OHE

Issues in Development: A Guide

The seventh in a series of
Office of Health Economics monographs
dealing with aspects of the
prescription medicine market

Klaus M Leisinger

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With a foreword by David Taylor

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Office of Health Economics

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Foreword

Unlike the great majority of OHE publications, this paper was not researched and written 'in-house'. It is a minimally edited translation of a study prepared in German by Dr Klaus Leisinger of the Swiss company CIBA-GEIGY. Hence its style, and at certain points its interpretation, differs from that of OHE; yet as regards the basic sentiments expressed OHE fully supports the line taken.

Our objectives in publishing this English version are basically two fold. First, it contains a wealth of fact useful to anyone who wishes to gain an informed view of third world health care problems and requirements. Second, it provides an example of how some major multinational pharmaceutical companies are working to build up a sensitive understanding of the needs of the poor nations, and of how they can play an appropriate part in meeting them.

Dr Leisinger stresses the need to utilise technologically based contributions to development prudently; that is in a manner compatible with the social and cultural conditions prevailing in each less developed nation. For example, agriculture is an area where companies like CIBA-GEIGY can rightly take a degree of credit for creating the tools of the 'green revolution'. But they will only contribute effectively to mass wellbeing in the third world if used hand in hand with the help poorer farmers and landless labourers need in the form of job opportunities, credit facilities, land redistribution, economic incentives and the like.

Similarly, with regard to demographic transition, Dr Leisinger notes that life preserving medicines (and the availability of contraceptives) may in time help to reduce expressed fertility and so ultimately reduce population growth rates. Yet his work also stresses the urgent need to understand the social determinates of fertility behaviour if desired changes are to be achieved before Malthusian disaster overwhelms the third world poor. He highlights issues like the need to liberate women from past positions of disadvantage relating to matters like their access to education.

Regarding the role of multinational companies in the process of development, the paper argues forcibly that it is a potentially desirable one. In terms of increasing capital investment, domestic production and third world trade balances, the role of multinational private enterprise is benign: isolated examples of ill-judged or clearly immoral behaviour coupled with propaganda from the critics of the social-market system should not obscure this fact. But Dr Leisinger's theme of technological advance via socially appropriate application needs constantly to be restated; the contributions of the western multinationals can only be optimised if there is an ongoing process of checking the relevance of their products and their policies to local community needs.

In the specific context of pharmaceuticals this is a timely reminder. The current activities of Health Action International participants (HAI is a loose grouping of like minded bodies co-ordinated in part by the International Organisation of Consumer Unions) are aimed at increasing political pressures on medicine manufacturers. As part of this international programme the charity Oxfam has, for instance, recently organised a series of meetings aimed at linking potentially damaging domestic attacks on British industry to third world medicine supply concerns.

To the extent that actions like this last encourage the pharmaceutical industry to adopt clear and responsible policies towards the poor they must be welcomed. But they should not be permitted to mislead the public into believing that multinational industry is currently unconcerned, or that it has nothing to offer the least advantaged communities of the world. This paper gives some important insights into the nature of the benefits the major drug houses generate.

It can be argued (perhaps in contrast to the line adopted in documents like the Brandt Report) that good health is not just a bi-product of the economic process of development: it is its central goal. The inherent value of a full life span free from disability coupled with the survival of one's family and friends far outweighs any other 'lifestyle' gain that social and economic progress may bring. With this point fully perceived the future role of the innovative pharmaceutical industry and the powerful curative therapies and preventive techniques it has contributed and will contribute to our global society will surely be seen as an important one.

Yet here again benefits will be maximised only if the social and economic factors relating to drug usage are fully understood and appropriate policies pursued. There may be a need at present, for instance, to involve traditional health practitioners more closely in the distribution of basic modern medicines in poor areas. Failure to do so could delay unacceptably the translation of initiatives like the WHO's Drug Action Programme into practical reality.

David Taylor

Introduction

A review of the problems now facing the developing countries often leads to resignation, to controversy, or to the proposal of push-button solutions with which it is thought all these problems can be swiftly overcome. None of these reactions can be regarded as satisfactory.

Resignation would be groundless, since in many cases things are moving in a desirable direction. Controversy, though sometimes capable of arousing brief attention through over-emphasis, seems to be unable to produce anything constructive. Push-button solutions are non-existent; the problems with which the third world has to deal are too differentiated and too complex for such an approach. There are no 'instant-success' stories.

The aim of this paper is to outline some aspects of under-development and to relate them to one another. Nutrition, health and population growth are problems of overriding importance for any development strategy centred on human beings and their living conditions. And the final section is concerned with a phenomenon the influence of which on development and underdevelopment has led to deep differences of opinion – the multinational, or as others say, transnational, corporations.

This discussion of aspects of the north-south relationship tries to steer a middle course between the complexities of science on the one hand and the crudities of popular journalism on the other. This involves the risk, however, that it will prove to be too banal for some readers, whereas for others it will still be too complicated. But hopefully such failures will not stop the paper achieving its basic goal of increasing interest in development problems and conveying information of a type calculated to encourage a deeper study.

Development and underdevelopment: facts, issues and prospects

After two decades of unprecedented economic growth in the third world, the overall balance sheet of development is positive with respect to economic and social improvements. The third world as a whole has progressed faster than the now industrialised nations did for any comparable time span. Yet economic performance has varied considerably among regions and countries.

This is also so in respect to changes in social development indicators like those shown below. The poorest have advanced disproportionately little.

There are many countries in Africa south of the Sahara where today (1983) life expectancy, child and infant mortality and literacy are below the average for the third world in 1960.

The words 'underdeveloped countries' with the many synonyms[1] used are no more than vague phrases describing a group of countries characterised by a vast heterogeneity in every important feature. Measured by their socio-economic status, their potential for economic growth, social stratification, culture, religion or even geopolitical importance, countries like Bhutan or Brazil, Somalia or Singapore, Trinidad and Tanzania do not have much in common. And yet they are all in the group which is commonly called the 'developing countries'.

Myrdal, in discussing the implications of this terminology,[2] has described what is actually meant in characterising a nation 'underdeveloped':

'There is in that country a constellation of numerous undesirable conditions for work and life; outputs, incomes, and levels of living are low, many modes of production, attitudes, and behavioural patterns are disadvantageous; and there are unfavourable institutions, ranging from those at the state level to those governing social and economic relations in the family and the neighbourhood. They are evaluated as undesirable – or low or disadvantageous or unfavourable – from the standpoint of the desirability of 'development' – a characterisation afflicted with vagueness but definite enough to permit its use. There is a general causal relationship among all these conditions, so that they form a social system'.

Whatever the 'undesirable conditions' might be, they are of a different structure in a 'capital-surplus oil exporting country' or a 'newly industrialised country' than in a very poor country in the sub-Saharan region of Africa which has been seriously affected by the rise of oil prices.

It is not, therefore, generally useful to examine this area in the context of broad, oversimplified aggregations applying to the entire 'third world'. Thus the World Bank is considering, for future analysis, disaggregating the 'South' into four groups:

- capital-surplus oil exporting countries.
- newly industrialised countries (NICs).
- non-industrialised, populous Asian countries (China, India, Pakistan, Indonesia).
- very poor countries in the sub-Saharan region of Africa.

1 To name a few: 'less developed countries', 'developing countries', 'third world', 'South', or 'backward areas'.

2 See Myrdal, G, *Asian Drama*, Harmondsworth 1968, pp, 1839–42 (Vol III).

Real growth of GNP and GNP per capita in the developing and industrial countries, 1960–81
(Percentage change per year.)

	GNP					*GNP per capita*				
	1960–70	*1970–80*	*1979*	*1980*	*1981*	*1960–70*	*1970–80*	*1979*	*1980*	*1981*
All developing regions	5.8	5.6	4.8	5.0	2.2	3.5	3.3	2.8	3.0	0.2
Africa south of the Sahara	4.7	3.7	1.5	2.8	2.2	2.1	1.0	–1.1	0.0	–0.7
East Asia and Pacific	7.3	6.9	7.5	5.8	5.5	5.1	4.9	5.9	4.3	3.9
Latin America and the Caribbean	5.5	5.5	5.9	5.3	–0.4	2.6	3.0	3.5	3.0	–2.7
North Africa and the Middle East	7.7	8.1	8.5	6.8	0.6	5.1	5.1	5.1	3.5	–2.3
South Asia	4.3	3.5	–3.1	6.6	5.9	1.9	1.2	–5.2	4.3	3.5
Southern Europe and other Mediterranean countries	6.6	5.1	2.5	1.2	2.4	5.0	3.3	0.9	–0.4	0.9
Industrial countries	5.1	3.3	3.4	1.4	1.2	4.0	2.5	2.8	0.8	0.7

Trends in life expectancy, child mortality, and literacy, 1950–79

	Life expectancy (years)				*Child mortality**				*Literacy rate (per cent)*			
Country group	*1950*	*1960*	*1970*	*1979*	*1950*	*1960*	*1970*	*1979*	*1950*	*1960*	*1970*	*1979*
All developing countries	43	48	54	58	28	22	16	12	33	38	46	56
Low-income	41	47	53	57	28	22	16	12	20	27	29	51
Africa	35	39	43	46	44	38	32	27	—	17	17	29
Asia	41	48	53	58	27	21	15	11	20	28	31	52
Middle-income	46	50	55	59	28	22	16	11	48	49	64	68
Africa	37	41	46	50	42	35	27	22	16	22	37	—
Asia	42	47	53	59	28	22	14	9	54	54	69	75
Latin America	51	56	60	64	23	17	12	8	57	65	72	78
North Africa	42†	47	52	57	40†	36	27	15	19†	19	24	40
Middle East	—	48	53	57	—	30	18	16	—	17	35	49
Southern Europe	59	62	66	68	10	7	5	3	75	80	85	85
High-income oil exporters	—	46	51	57	—	35	20	11	—	14	26	32
Industrial market economies	68	70	71	74	3	2	1	1	95	97	98	99

* Deaths per thousand children aged 1 to 4 years

† The 1950 data for North Africa includes the Middle East

Source World Bank Development Report, 1982.

Although more appropriate, even this breakdown still leaves a considerable heterogeneity within the respective groups. And this is also true for different regions within most of the individual countries.

Awareness of disparities in economic performance, resource endowment and development potential has led some commentators to employ the term 'the least developed countries'. The United Nations General Assembly approved in 1971 a list of 25 nations which met the following criteria:

- per capita GNP not more than 100 US$ yearly.
- literacy rates not more than 20 per cent, and
- a manufacturing sector totalling no more than 10 per cent of GNP.

Of the countries initially put on the list, 16 were in sub-Saharan Africa one in the Middle East, and five in Asia. Three were islands. The current list comprises twenty-one African countries south of the Sahara, eight Asian countries, and one Caribbean and one Oceanian island.[3]

Despite cultural, political and other differences there are problems and characteristics which are common to all of the least developed countries:

- Widespread poverty in the absolute sense;[4] that is a high percentage of the population is not able to satisfy its most basic human needs.[5]
- High proportions of the population living and working in the subsistence sectors, ie agriculture and informal services. Agricultural productivity is low, and agricultural support institutions (extension services, credit institutions, cooperatives) are weak.
- Common occurrence of communicable and nutritional deficiency diseases, inadequate preventive health measures and insanitary living conditions. High infant and child mortalities and low life expectancy result.
- Acute scarcity of skilled personnel and managerial expertise.
- Weak physical and administrative infrastructure.
- Low level of exploitation of existing natural resources.
- Low absorptive capacity; the poor quality of life at the margin makes it difficult for people to change their lifestyle without help, because any failure of new methods implies a high risk for survival. Traditional thinking, attitudes and habits condition life and work. Birth to a large extent determines a person's place in the social hierarchy – social mobility is low.
- Considerable ethnic diversity and consequent political fragility.

As noted above the least developed countries of Africa south of the Sahara are particularly poorly placed. Their overall economic development has been slow, their agricultural performance sluggish, and their population growth high. Output per person has risen more slowly in sub-Saharan Africa than in any other part of the world; and the future outlook gives rise to great concern.[6]

The life expectancy at birth in sub-Saharan Africa is 47 years – by far the lowest in the world. Infant mortality alone is in the order of 150 per 1000 live births, the child death rate 25 per 1000. In all least developed countries, but especially sub-Saharan Africa, the basic minimum quantities of goods and services to prevent disease, hunger and high mortality are not available to 40 – 60 per cent of the population.

A variety of problems peculiar to Africa south of the Sahara, such as uncertain rainfall and soil erosion and degradation, as well as overgrazing due to population pressure, make a rise of agricultural productivity much more difficult than elsewhere in the third world. Thus the prospects for rural development – a precondition for tackling absolute poverty – are very poor. Dependence on food imports is likely to increase.[7] Food aid imports rose from 958 thousand metric tons (grain equivalent) in 1975 to 1,201 thousand in 1979.[8] Grain importation into sub-Saharan Africa is expected to further increase to 4.5 million tons by 1985.[9] Export crop production is stagnating[10] or declining. The external indebtedness of sub-Saharan Africa rose from $6 billion to $32 billion between 1970 and 1979, bringing the debt service up from 6 to 12 per cent of export earnings in the same period.[11] The widening gap between African states and the rest of the world is shown by all available indicators. (See table opposite).

The poorest of the poor have fared badly over the last decade, not because the 'rich' have seized the fruits of

3 The criteria for grouping these countries are now a per capita Gross Domestic Product of US $125 (in 1975 values), a ten per cent or less share of manufacturing in total Gross Domestic Product, and a literacy rate (proportion of literate persons over 15) of 20 per cent or less. Borderline cases are included. The current (1982) list is as follows: Benin, Botswana, Burundi, Cape Verde, Central African Republic, Chad, Comoros, Ethiopia, Gambia, Guinea, Guinea Bissau, Lesotho, Malawi, Mali, Niger, Rwanda, Somalia, Sudan, Tanzania, Uganda and Upper Volta, all in Africa. In Asia: Afghanistan, Yemen Arab Republic, Bangladesh, Bhutan, People's Democratic Republic of Yemen, Laos, Maldives and Nepal, as well as Haiti and Samoa.

4 The poverty line can be defined in terms of a food consumption yielding 2,250 calories per day. It can also be defined by a minimum income, Chenery *et al* (in *Redistribution with Growth*, Oxford, 3rd printing 1976, pp 10–16) set two poverty lines. One is a yearly income of US $50, the other US $75. Absolute poverty is defined by deficiencies in essential requirements (calorie intake, nutritional levels, health, education, etc). To the extent to which these deficiencies are reflected in income levels, poverty can be approximated by comparing absolute levels of income or consumption of a population group with defined minimum requirements. The concept of 'absolute poverty' has been thoroughly discussed by the ILO (*Poverty, Unemployment and Underemployment, Geneva 1976*). Poverty as defined here is a state of living where people fall very far short of satisfying their most basic human needs. Estimates of poverty 'in principle require information on the relative purchasing power of different currencies, since foreign exchange rates give a distorted picture, on the distribution of income before tax, and on the extent to which taxation and provision of public services improve the real distribution of income' (ILO, *Employment, Growth and Basic Needs*, p 21). The ILO estimated the number of people living in absolute poverty to be between 706 million and 1,210 million in 1972. (ILO *Employment, Growth and Basic Needs*, p 22; for a comprehensive discussion of poverty, see chapter two, paragraph 3c).

5 There are a number of interpretations of the basic needs concept. The most original and most widely used is that of the ILO, which includes 'minimum requirements of a family for private consumption; adequate food, shelter and clothing are obviously included, as would be certain household equipment and furniture'. Also included are 'essential services provided by and for the community at large, such as safe drinking water, sanitation, public transport, and health and educational facilities'. If one follows the comprehensive basic needs approach of the International Labour Office, a basic needs policy implies also the participation of the people in making the decisions which affect them.

6 See: World Bank, *Accelerated Development in sub-Saharan Africa.*

7 Lele, U, 'Rural Africa: Modernisation, Equity and long-term development', in: *Science*, Vol 211, No 6 (February 1981) pp 547–554.

8 World Bank, *Accelerated Development in sub-Saharan Africa, An Agenda for Action.* Washington, 2nd printing April 1982, p 166.

9 *World Development Report* 1980, p 89.

10 World Bank, *Accelerated Development in sub-Saharan Africa*, p 166.

11 ibid p 160.

growth, but because there has been no growth. The current account balance of the least developed countries deteriorated massively between 1970 and 1980.[12] The debt service as a percentage of GNP rose from 1.1 per cent to 1.8 per cent. Population growth is increasing in most least developed countries, again specifically in those south of the Sahara[13] – the true extent of this being extremely difficult to measure in rural African societies.[14]

Thus despite development efforts and a marked increase of development assistance[15] in the past, the number of those living in absolute poverty has increased from about 600 million in 1970 to about 750 million in 1980. The political will and the economic ability to provide funds for development assistance is today less than at the beginning of the seventies. In real terms, aid to the poorer developing countries[16] rose by 65 per cent between 1970–72 and 1974–76. Since then it has fallen by about 5 per cent.[17] And there has been a change of priorities; today, the middle-income countries receive substantially more concessional assistance on a *per capita* basis than the low-income countries.[18]

The outlook is grim: the World Bank concludes on the overall economic and social prospects for the group of the least developed countries:[19]

- The gap between this poorest group and the middle income and industrial countries will continue to widen.
- The outlook for reducing poverty has worsened along with the prospects for the poor countries. Current estimates suggest that in 1980 about 750 million people lived in absolute poverty in the developing world, about 33 per cent of its population (these estimates exclude China). If optimistic forecasts are extended to the year 2000, the proportion could by then be reduced to 18 per cent. But continued rapid population growth would mean that the absolute numbers living in poverty would still total 630 million. Under pessimistic assumptions, at the end of a century of unprecedented economic and social advance in some parts of the world, 850 million people may still be living in absolute poverty. Recent 'worst case' estimates predict 1 billion living in absolute poverty by 1990.[20]

Trapped in a vicious circle where poverty breeds disease and disease results in poverty, some 800 million individuals are deprived of any possibility of a decent life. Their self-perpetuating plight denies the poorest of the poor a share in the social and economic progress which has taken place elsewhere in their countries; they neither benefit from nor contribute much to socio-economic development. As noted above their capacity to absorb innovations is limited. The benefits of new technologies and techniques are absorbed by those in a position to respond to opportunities offered; thus, there is a tendency for benefits to trickle up to those who are already better off, by-passing the poorest and deepening existing social disparities. Thus today it may be argued that the most important development relates to how those living in absolute poverty may be most effectively helped. How can these populations participate in a development process which is both viable and socially acceptable to them?

12 For specific data see: *World Development Report* 1981, Table 13, 'Balance of Payments and Debt Service Ratio', p 158.

13 To give a few examples of population growth:

	1969–1970	*1970–1979*
Tanzania	2.7%	3.4%
Burundi	1.6%	2.0%
Mali	2.4%	2.6%
Benin	2.6%	2.9%

14 See as an example: Ministry of Economic Planning and Development/Central Bureau of Statistics, 'Major Highlights of the Kenya fertility survey' in: *Social Perspectives*, Vol 4, No 2, Nairobi, December 1979. (Infants below a certain age are not yet counted in many African societies).

15 From: 4.6 billion dollars in 1960 to 26.6 billion dollars in 1980 for the OECD countries, and 5.5 billion (1975) to 7 billion (1980) of OPEC countries. See *World Development Report* 1981, pp 164–165.

16 The 'low-income countries' in the World Bank terminology.

17 McNamara R S, *Economic interdependence and Global Poverty: The Challenge of our Time*, Barbara Ward Memorial Lecture, Baltimore, July 20, 1982, p 21.

18 ibid.

19 *World Development Report* 1981, pp 16–18.

20 McNamara R S, *Economic interdependence and Global Poverty*, op cit.

Sub-Saharan Africa and the World: basic data

Countries	*Population (millions) mid-1979*	*GNP per capita average annual growth rate (5) 1960–70*	*1970–79*	*Per capital growth 1970–79 (%) Agriculture*	*Volume of exports*	*Adult literary rate (%) 1979*	*Life expectancy at birth (years) 1979*	*Death rate of children aged 1–4 (per thousand) 1979*
Sub-Saharan Africa	343.9	1.3	0.8	–0.9	–3.5	28	47	25
Low-income	187.1	1.6	–0.3	–1.1	–4.5	26	46	27
Nigeria	82.6	0.1	4.2	–2.8	–2.8	–	49	22
Other middle-income	74.2	1.9	–0.5	–0.4	–3.5	34	50	22
South Asia*	890.5	1.5	1.5	0.0	0.6	36	52	15
All developing	3,245.2	3.5	2.7†	0.1	–1.5	57	58	11
Low-income	2,260.2	1.8	1.6†	0.1	–3.1	50	57	11
Middle-income	985.0	3.9	2.8†	0.6	1.9	72	61	10
All industrialised	671.2	4.1	2.5†	0.2	5.2	99	74	1

*Bhutan, Bangladesh, Nepal, Burma, India, Sri Lanka, and Pakistan.
†1970–80.

Source: World Bank, *Accelerated Development in Sub-Saharan Africa*, Washington 2nd printing April 1982, p 3.

World food problems

The optimism prevailing at the beginning of the 70s has evaporated. As late as 1974 the participants at the World Food Conference held by the UN still believed that hunger could be eradicated by the middle of the 1980s. Today even the optimists among food experts feel that there is hardly any chance of this traditional scourge of mankind being overcome before the end of the century. *'Global 2000'*, a report written for the US President by experts in the State Department and the US Environmental Council, stressed this point:

'The outlook for improved diets for the poorest people in the poorest LDCs is sobering. In the 1970s consumption of calories in the LDCs averaged only 94 per cent of the minimum requirements set by the UN Food and Agriculture Organisation (FAO). Moreover, income and food distribution within individual LDCs is so skewed that national average calorie consumption generally must be 10–20 per cent above minimum levels before the poorest are likely to be able to afford a diet that meets the FAO minimum standard. Latin America is the only major LDC region where average calory consumption is projected to be 20 per cent or more above the FAO minimum standard in the year 2000. In the other LDC regions – South, East, and South-east Asia, poor areas of North Africa and the Middle East, and especially Central Africa, where a calamitous drop in food per capita is projected – the quantity of food available to the poorest groups of people will be insufficient to permit children to reach normal body weight and intelligence and to permit normal activity and good health in adults.'[21]

Pessimistic reports are nothing unusual today. People have become so accustomed to them in fact that feelings are blunted and only resignation remains. Resignation, however, is precisely what can least be afforded if we are to avoid catastrophic famines in the third world. Mere figures convey no impression of the bitter reality of hunger. To appreciate the urgency of what lies behind the statistics on food problems, it is valuable to have seen for oneself the distended bellies, the big, sunken eyes, and the stick-like arms and legs of starving children. With this in mind, this section examines first some basic facts about world food production, second, the causes of food shortages and malnutrition, and, third, the strategies which may alleviate such problems.

The Facts

Depending on the definition of 'malnutrition' used, between 450[22] and 1,000 million[23] people do not receive sufficient food. FAO estimations of the number of people below the critical minimum food intake show the same distribution as absolute poverty:

Estimation of the extent of malnutrition (1972–74)

	People affected (millions)	*Percentage of total population*
Africa	83	28
Far East	297	29
Latin America	46	15
Near East	20	16
Total	446	24

Source FAO *Fourth World Food Survey*, Rome 1977, p63.

Out of the 446 millions severely malnourished people referred to above, 69 per cent are living in the least developed countries.

According to statistics compiled by the FAO, about 2,000 million persons are suffering from deficiency symptoms due to inadequate nutrition. That is, they may have an adequate daily intake of calories but their diet does not contain sufficient proteins, vitamins, or other substances.

Experts differ in their views as to precise dietary requirements. And in any case they vary depending on climatic conditions, type of work, age and sex. It is fairly safe to assume, however, that the following broad averages are valid:

Requirements and intake	*Energy*	*Total protein (in g)*	*Animal protein (in g)*
Requirement	2,200–3,000	70	40
Intake in indust. countries	3,100	90–110	30–70
Intake in devel. countries	2,150	35–60	5–10

Source Mesarovic M and Pestel E, *Menschheit am Wendepunkt*, Stuttgart 1974, p172.

For the poorest groups in developing countries *per capita* food consumption has not increased at all over the past decade. In some cases it has decreased.[24] Moreover malnutrition does not affect all members of a poor society alike. There are particularly vulnerable groups, such as infants, children and pregnant or nursing mothers. UNICEF estimates that every year 17 million children die of malnutrition in less developed countries[25] and that 'some 100 million childen under 5 years of age are suffering from protein-energy-malnutrition, more than 10 million of them having the severe form, which is usually fatal if left untreated'.[26]

Clinton puts the vulnerability of infants into the context of educational and cultural problems:

'The great majority of infant malnutrition arises between the sixth and twenty-fourth month when supplementation is provided too late and/or the weaning foods are inadequate. Contributing to this enormous problem are: limited food resources, cultural priority given to eating needs of older family members, taboos against giving certain protein and vitamin-rich foods (for example, fish and eggs) to children, inadequate understanding of locally available nutritious foods (for example, soyabeans) and incomplete knowledge of the infants' nutritional requirements'.[27]

Another vulnerable group is pregnant women who need more calories and protein per day than other women in the same age and occupational group, and nursing mothers who need even more calories and proteins than during pregnancy.

21 *The Global 2000 Report to the President 'Entering the Twenty-First Century'*, Charlottesville 1981 (Blue Angel), p 17.

22 FAO, *Fourth World Food Survey*, Rome 1977, p 63.

23 National Academy of Science, *World Food and Nutrition Study*, Washington DC 1977, p 26; WHO, *Sixth Report on the World Health Situation*, Geneva 1980, p 18.

24 WHO, *Sixth Report on the World Health Situation*. p 19.

25 Grant J P, *The State of the World's Children 1981–82*, New York (UNICEF) 1981

26 WHO, *Sixth Report* op cit, p 132 and WHO *Food and Nutrition Strategies in National Development*. Geneva 1976 (Technical Report Series No 584), p 9.

27 Clinton J J, *Health Population and Nutrition Systems* in *LDCs: A handbook* Washington DC, 1979, p 287.

Wherever country-specific surveys are made, malnutrition is found to be a major cause of illness or death and a significant contributory factor to the high morbidity and mortality from infectious diseases. Nutritional deficiencies are more directly interrelated with morbidity and mortality than any other factors.[28] They have been found to be the leading cause of death, disease and retarded development in children.

Extensive field studies in Guatemala,[29] India,[30] several Latin American states,[31] and Nigeria[32] have demonstrated a synergistic interaction between malnutrition and infectious diseases. Malnutrition was found to reduce resistance to diseases, increase the severity of illness and increase neonatal and postnatal mortality significantly by being (at least partially) responsible for low birth weights.[33] Puffer and Serrano concluded in their long study that 'nutritional deficiency was the most serious health problem uncovered in the investigation, as measured by its involvement in mortality'. They further noted that 'through the study of mortality by multiple causes, 57 per cent of the children who died under 5 years of age were found to have had immaturity or nutritional deficiency as either the underlying or an associated cause of death. In several areas two-thirds of the deceased children had such evidence of increased susceptibility to disease'.

Nutritional deficiencies also have an important influence on mental development: early malnutrition impairs brain growth.[34] The resultant loss in productivity and physical output throughout life[35,36] represents a major cost to poor nations. The vicious circle 'nutritional deficiences' → 'lower labour input[37] and efficiency' → 'lower income and lower food production' → 'nutritional deficiencies' constitutes a massive obstacle to improved health and is standing in the way of other forms of development.

The causes of malnutrition

The causes of food problems are extremely complex. Social, economic and political factors, interconnected and at the same time inter-acting with one another, influence supply and demand, the level of consumption, and the size of reserves. At least three sets of variables are particularly important in this connection:

- The amount of food produced in the third world.
- The purchasing power of the population groups affected by hunger.
- The distribution and utilisation of the supply of food in the third world.

The production problem

The following table shows the production, consumption and overall trade pattern for food grains:

	Grains (million metric tons)			
	1969–71	*1973–75*	*1985*	*2000*
Industrialised countries				
Production	401.7	434.7	569.5–525.9	739.7–679.1
Consumption	374.3	374.6	486.2–465.3	648.4–610.8
Trade	+32.1	+61.6	+83.3–+60.6	+91.3–+68.3
Centrally planned countries				
Production	401.0	439.4	567.0	722.0
Consumption	406.6	472.4	596.0	758.5
Trade	–5.2	–24.0	–29.0	–36.5
Less developed countries				
Production	306.5	328.7	471.7–490.7	735.0–740.6
Consumption	326.6	355.0	526.0–522.3	789.8–772.4
Trade	–18.5	–29.5	–54.3–31.6	–54.8–31.8

Source *Global 2000*, technical report, table 6.5.

Worldwide the production of cereals is increasing by about 2.2 per cent per year and in the year 2000 is projected to be 90 per cent higher than in 1970, provided there are no adverse changes in the climate. This means that, worldwide, food production should rise faster than the population. The third world, however, will at best only be able to keep step with the rise in population.

In the large, highly populated countries in south Asia there will be hardly any improvement in the situation. According to the American analysis, the same is true of northern Africa and the Middle East. South of the Sahara the situation will become worse. The shortfall in production can only be made by international aid and by the importation of foodstuffs, albeit at higher prices.

The poverty dimension of hunger

Hunger has a supply dimension – to be solved by the production and distribution approach – and it has a poverty dimension. The latter involves the fact that

28 Most probably also for a less developed Europe: McKeown and Record attribute the decline of mortality during the 19th century in England and Wales to improvements in nutrition rather than to any other influence: see McKeown T and Record R G, 'Reasons for the decline in mortality in England and Wales during the nineteenth century'. In *Population studies*, Vol 16 (1962), pp 94–122.

29 Scrimshaw N S, Ascoli W, Kevany J J, Flores M, Iscaza S J and Gordon J E, 'Nutrition and Infection field study in Guatemalan villages, 1959–64'. In *Archives of Environmental Health*, Vols 15, 16, 17 and 18. Chicago, July 1967, October 1967, February 1968, March 1968, July 1968, November 1968, and January 1969.

30 Kielmann A A, De Sweemer C, Parker R L, Uberoi I S, Reinke W S, Masih N, Kakar D N, Sarma R S S, Taylor C E and Chernichovsky D, *Malnutrition, Infection, Growth and Development: The Narangwal experience*. (Mimeo) Baltimore, Johns Hopkins University, November 1981.

31 Puffer R R and Serrano C V, *Pattern of Mortality in Childhood*, Washington, DC (Pan American Health Organisation), 1973.

32 Morley D, *Paediatric Priorities in the Developing World*, London 1973, especially pp 316–40.

33 Read M S, Habicht J P, Lechtig A and Klein A, 'Maternal Malnutrition, Birth Weight, and Child Development' in: Canosa C A (Ed) *Nutrition, Growth and Development*, Basle 1979, pp 203–15.

34 See: Winick M, Rosso P and Brasel J A, 'Malnutrition and cellular growth in the brain: existence of critical periods'. In Ciba Foundation (Ed) *Lipids, Malnutrition and the Developing Brain*, London 1972, pp 199–206.

35 In order to survive, individuals who have low calorie intakes must reduce their physical activity. Myrdal refers to the 'hidden hunger' as a general state of weakness that impairs peoples' labour input and efficiency. See *Asian Drama*, p 1603. The discrepancy between estimated normal requirements and actual dietary intakes observed for the populations of most developing countries suggests that such reduced activity is widespread.

36 Cravioto J, 'Effects of early malnutrition and stimuli deprivation on mental development'. In Doxiadis S (Ed), *The Child in the World of Tomorrow*, Oxford 1979, pp 357–64. Also: Chase H P, Canosa C A and O'Brien D, 'Nutrition and Biochemical Naturation of the Brain'. In Canosa C A (Ed) *Nutrition, Growth and Development*, Basel 1979, pp 110–18.

37 For a specific example see Karyadi D and Basta S, *Nutrition and Health of Indonesian Construction Workers: Endurance and Anaemia*, Washington, DC (World Bank Staff Working Paper No 152).

people simply cannot buy as much appropriate quality food as they need to solve their nutrition problems.

There is good evidence that a large proportion of additional income earned is spent on food. The 'calorie response elasticities to income' are especially high among the poorest:

Calorie response elasticities to income

Country	*Poorest 10%*	*Richest 10%*
Bangladesh	0.69	0.34
India	0.85	0.33
Indonesia	0.77	0.30
Morocco	1.04	0.35
Pakistan	0.32	0.24
Sri Lanka	0.22	0.17

Source Knudsen O and Scandizzo P L, *Nutrition and Food Needs in Developing Countries*, Washington DC, 1979 World Bank Staff Working Papers No 328, p 7.

Recent research by the World Bank found 'ability to pay' to be a much more decisive determinant of whether people obtain enough food than the aggregate amount of food available.[38] Is malnutrition a poverty problem or a production problem? The answer is that it is both, although in many instances the two are actually indivisible.

For example, the authors of a UN Study in the Indian state of Kerala[39] analysed the effects of both poverty and low local food production and concluded 'raising the level of calorie intake in order to reduce the scale of undernourishment depends on both raising the level of production and reducing the degree of inequality in the distribution of land'.

Higher production and higher rural income in fact depend on each other. The World Bank found clear-cut evidence that economic growth has gone hand in hand with agricultural progress. All farmers – small, medium, and large – respond to economic incentives. Far from being 'tradition-bound peasants', farmers have shown that they share a rationality that far outweighs differences in their social and ecological conditions. Farmers can contribute to agricultural investment. Even those with only a few acres save a substantial part of any extra income and invest it on their farms. They also use their own and their families' labour to level land, grow trees, dig ditches, and build paddy terraces – all activities that create the capital to produce more agricultural output in the future.

Small farmers can be highly productive, typically producing more from each acre than large farmers do. Programmes and policies favouring smallholders can thus offer good economic returns as well as increase employment and reduce rural poverty. Given incentives and opportunities, farmers will expand output.[40]

Utilisation problems

In the third world pests such as rodents, insects, spiders and fungi cause enormous damage every year to both stored and standing crops. In some countries up to 60 per cent of potential food production is destroyed before harvesting by insects and fungi. Of what remains, it is common for a further 40–50 per cent to be lost as a result of storage pests. Unspoilt these crops could have helped to eliminate hunger.

A second set of problems concerns the land available for agricultural use. In many instances, the smallholders that till the land in the regions most prone to hunger receive too little support. In many third world countries procrastination is the rule when it comes to putting into force land reforms which would make more land available for the production of food. Small farmers usually stand little or no chance of obtaining credit or of benefiting from advisory services, irrigation schemes, or fertilisers – all factors that would help them to increase their productivity. And yet it is above all the self-subsisting small farmers that have to feed not only themselves but also, with their surplus crops, other members of the population.

A further group of utilisation problems arises in those cases where prejudice, ignorance, and traditional dietary habits make it difficult to improve the standards of nutrition, even when food is available.

In many parts of Africa – often those regions where proteins are most lacking – the inhabitants may refuse to include in their diet eggs, fish and other rich sources of protein. The sacred cows of India provide another instance of what some Western commentators regard as an irrational misuse of a resource, although within the values of Hindu culture this is of course not the case. Re-education may be a slow and arduous process for all concerned.

Strategies for Eradicating Hunger

Hunger and undernourishment across the third world cannot be alleviated overnight. There are, however, strategies which in the medium term could do much to reduce the scale of such problems. They centre on providing support for smallholders, subsistence farmers and landless agricultural workers, and include:

- Genuinely useful credit granted on favourable terms.
- Land tenure reforms.
- Provision, by state experts or members of development aid teams, of free advice on selection of feed, fertilisers, and agricultural methods.
- Provision of aid and advice with respect to the storage and marketing of crops, so that storage damage is minimised and yield maximised.
- Provision of incentives encouraging farmers to produce more than they need for themselves.

Supporting the groups referred to above has the advantage not only that it directly helps those who have too little to eat but also that it enables groups that produce too little to be transformed into groups that produce surpluses. Admittedly, the political and economic interests at work in most of the South are such that this solution is easier to propose than to put into effect. But careful analysis of the causes of food problems would seem to suggest that there is no other strategy with more advantages to offer. The aim is not to convert all smallholders into industrial farmers; rather to help them to a position where they are able to produce for themselves the food

38 See Reutlinger S, 'World Bank Research on the Hunger Dimension of the Food Problem'. In *World Bank Research News*, Vol 3, No 1, Washington, 1982, pp 3–9.

39 UN *Poverty, Unemployment and Development Policy*, A case study of selected issues with reference to Kerala. New York, 1975.

40 *World Development Report* 1982, pp 5–6.

they need, and hopefully also to contribute a surplus to meet the needs of the fast expanding urban and peri-urban populations.

According to *Global 2000*, by the end of the century the area of cultivable land will have risen by only 4 per cent. Increases in food production must therefore chiefly be achieved by stepping up the size of harvests. The requisite technology is already available and consists of a package of measures with which the production of maize can be increased by up to 100 per cent and that of rice by up to 25 per cent, as compared with the figures achieved with the methods of agriculture traditionally used in the third world. This package is known as the 'green revolution'. The measures it comprises are:

- High-yielding varieties (seeds);
- Fertilisers;
- Controlled and adequate irrigation;
- Pesticides;
- Mechanical aids (for example, tractors).

The high-yield seeds respond exceptionally favourably to the use of fertilisers and, as they ripen very rapidly, two to three harvests are possible per year. It was only with the advent of these high-yield seeds that production surplusses became possible in the industrialised countries. If Canada or the USA were still employing the traditional methods, then there would not be the millions of tons of surpluses available for food aid schemes, without which catastrophes would long since have occurred in the third world, and probably in the centrally planned countries as well. Technically, the 'green revolution' has been a success in every single instance, including the third world. This, however, is only one side of the coin. Socially, agricultural innovations have varied in their impact, since, owing to differences in legislation, systems of land tenure and credit facilities, only the already well-established benefited in some countries, whereas in others the smallholders as well were able to profit from technical progress. Also mechanised aids like tractors may sometimes have displaced human labour in an undesirable manner, leaving people without useful work.

However, it is worth stressing that these 'side-effects' are not an inherent property of 'green revolution' technology; rather they stem from the way in which it is (or is not) integrated into the structure of society. Examples of genuine success – that is, the transformation of technological progress into social progress to the benefit of the mass of rural populations – can be found in such countries as the People's Republic of China, Taiwan, Korea and Japan.

Where no assistance was forthcoming for groups like the smallholders, no land reforms took place, and no governmental interest was shown in the fate of the farming population in general then the introduction of the new types of seed proved of benefit exclusively to those farmers who were already rich and powerful. Mexico, where 0.5 per cent of the farmers were responsible for 94 per cent of the increase in crops due to the 'green revolution', is an example of how a limited governmental policy may cause progress to have a retrograde social effect.

In India more than half of the farmers owning one hectare of land or less (smallholders in the literal sense of the word) switched to high-yield seeds and planted them with success. In a country where the traditions of inheritance necessitate the repeated splitting up of arable land so that from generation to generation each family has less and less to live on, the introduction of the new sorts of seed came as a blessing. With the traditional seeds and methods of cultivation families needed, in order to produce enough merely for themselves, on average five times more land than is actually available. The new sorts of seed enable them to manage even on a small plot.

Further grounds for hope on the technical side have been provided by successes in the genetic improvement of certain types of seeds. Some of the new varieties are more resistant to pests and require less water. Technically, the production problem is soluble; as far as distributional questions are concerned, it is up to governments and individuals in the third world to play their part in seeing that the prerequisites of social success are fulfilled.

Prevention of post-harvest damage

It is estimated that even today about one-third of the crops produced in the developing countries are destroyed by insects, rats, mice, or fungi after they have been stored. In India alone, insects and rodents destroyed over 13 million tons of grain in 1963 and 1964. This would have been sufficient to provide 77 million families with their 'daily bread' for one year. Preventing these losses would bring about an important increase in the volume of food potentially available – and what is more, without necessitating any politically sensitive measures.

Some commentators put forward the naive proposal that post-harvest losses in the developing countries could be prevented by building simple but functional granaries and silos. The crops could then it is suggested be stored without having to resort to chemicals.

There can be no doubt that it is first necessary to provide suitable storage facilities so as to protect the crops from atmospheric influences and from pests such as rodents, grain weevils, mites, and mould fungi. These measures, however, are far from sufficient in themselves. In most cases, only the use of chemical pesticides will provide an adequate degree of protection. The climatic conditions prevailing in most developing countries (high temperatures and high relative humidity) offer pests particularly favourable conditions for proliferation. Moreover, crops contaminated by rodents, grain weevils, mites and mould fungi can endanger the health of humans and animals, in which context the aflatoxins (metabolites produced by mould fungi) are particularly dangerous. They are amongst the most potent carcinogens known.

In other words, it is necessary not only to reduce losses but also to ensure that cereals, for instance, contain no inferior or health-endangering substances. Hence, as regards the use of modern and traditional methods to prevent damage to harvested crops, there is no 'either/or' solution.

Balldin, Hart, Huenges and Versluys have shown how complex the causes of malnutrition are and how comprehensive a strategy to improve the nutrition of vulnerable groups must be.[41] The elements required include;

1 Good agriculture

- Clearing of land at the right time.
- Planting of sufficient crops.

41 Balldin B, Hart R, Huenges R and Versluys Z, *Child Health*, Nairobi 1975 (AMREF) Nutrition 5.5. The authors made their recommendations for an East African environment.

- Use of irrigation and fertiliser, if necessary, and advice from instructors.
- Harvesting at the right time, and safe storage of the food to avoid losses through pests.
- A transport and distribution system to get enough food to all regions.

2 Good economic conditions
- Sufficient money and resources wisely allocated for priorities like agricultural improvement, food and fuel, education, health.
- Enough arable land for sufficient food crops and also cash crops for income.
- Communal production, and fair distribution and marketing.
- Enough productive jobs and hard work.
- Control of alcoholism (and other drug abuse) to avoid waste of money and manpower.

3 A healthy environment
- Safe and sufficient water. Water supplies should be both safe and not too far from homes
- Enough fuel available for adequate cooking.
- Use of latrines and raising of the general standard of sanitation.
- Disease vector control.

4 Good education
- Spreading of knowledge about nutrition and child health in schools, families, communities.
- Showing ways of how to improve on present attitudes and practices. Special emphasis should be laid on better nutrition in the most vulnerable groups, the mothers and children.

5 Social and family life
- Family size. All the children are more likely to receive enough food and attention if the family is small.
- If the mother or father or both are away from the home at work it is important to ensure that the children are looked after properly and that they get enough food.
- Appropriate distribution of money, work and food within the family. Support for the mother is important to keep the children healthy. Priorities within the family include children getting their share of high quality energy and protein foods. Children need smaller portions of food more often than adults, as they cannot digest large quantities at one time.
- Care for children from broken or incomplete families. Social integration and communal care for these children and underprivileged families is an important factor.

6 Prevention and control of diseases
- Infectious diseases, for example measles, interfere very much with nutrition in children. Many infections are preventable by immunisation. Comprehensive vaccination for children, and good maternal care, contribute very much to good nutrition.
- Early detection and effective treatment of acute diseases like the diarrhoeal diseases and respiratory tract infections are further important factors.
- Good management of chronic diseases or congenital malformations which are interfering with children's food intake or food utilisation can often produce at least some improvement.
- Illnesses in adults are also important to look after properly as they reduce 'manpower' and diminish the ability to take proper care.

Summary

The problems of hunger and malnutrition in the third world are to be solved in the third world countries themselves. What is needed is a comprehensive package of technical, social and political measures.

Alleviating poverty in rural areas and increasing agricultural production are the two most important objectives if hunger is to be overcome. Food aid can only be a short-term measure to avoid disasters – in the long term, production and allied social problems will not be solved by surpluses produced in industrialised countries.

There is a two-way relationship between health and socio-economic development in general. In a less developed country the great majority of the people are individually poor. The populations which lie at the main focus of this study are malnourished, uneducated, have no access to safe water and adequate sanitation, live in poor housing conditions and have little access to the few services available. As a result, their health is inevitably poor.

The fundamental interrelations between poverty and disease have been common knowledge since the middle of the last century.[42] If underlying poverty persists medical technology might be able to provide temporary cures for diseases like the gastrointestinal infections. But unless the socio-economic, cultural, attitudinal, and behavioural background which generates these infections is changed recurrence is inevitable.

As Winslow puts it, 'men and women were sick because they were poor, they became poorer because they were sick, and sicker because they were poorer'.[43] Poor health conditions are part of the social system of poverty. They are linked with all aspects of it.

On the other hand, poor health is a main obstacle to development. The state of health of an individual determines his or her productivity, earnings and thus living standards. The links between health and factors like nutritional status result in measurable impacts on learning ability and adult intelligence – which again are long-run determinants for adult productivity and earning capacity. Poor health thus is an important barrier to intergenerational socio-economic mobility: there is an interrelationship between parental education and income and infant and child health and nutrition, which in turn determines the adult options of that individual. These linkages have specific peculiarities in each society. Understanding the precise causes of mortality and morbidity is usually a precondition for altering current and future states of health.

Not everybody is exposed to the same risks of premature death and high mortality. There are special vulnerabilities. The jobless, the unschooled and the unskilled, in other words the poorest, have a far greater mortality and morbidity than the higher social classes. This is also true for 'developed' countries.[44] Perceptions of disease, its acceptance or non-acceptance, and eventually the demand for health services place the poorest at further disadvantages. A traditionally disease-ridden environment makes poverty-related illnesses a 'normal' part of reality. Even if perceived, disease might be accepted as a punishment or the 'will of God' and not struggled against through, for instance, demanding health services. Again, similar factors apply in the industrialised countries.[45]

The Data

The WHO has described the health status of the poorer groups in the third world. 'Nearly 1,000 million people are trapped in the vicious circle of poverty, malnutrition, disease and despair that saps their energy, reduces their work capacity and limits their ability to plan for the future. For the most part they live in the rural districts and urban slums of the developing countries. The depth of their deprivation can be expressed by a few statistics. Whereas the average life expectancy at birth is about 72 years in the developed countries, it is about 55 years in the developing countries: in Africa and southern Asia it is only about 50 years. Whereas only between 10 and 20 out of every 1,000 infants born in the developed countries die during their first year, the infant mortality rate in most developing countries ranges from nearly 100 to more than 200 per 1,000. Whereas the death rate for children between 1 and 5 years old is only about 1 per 1,000 in most developed countries, it averages about 20 in many developing countries and more than 30 in Africa south of the Sahara. Of every 1,000 children born in poverty in the least developed countries, 200 die within a year, another 100 die before the age of 5 years, and only 500 survive to the age of 40 years.'[46]

Thus, health as a 'fundamental human right' is not a reality for at least one billion people in the South. Nearly one-third of the individuals so deprived live in the least developed countries. The huge disparities between the health conditions of least developed countries, other developing countries and the industrialised nations underline the need for urgent action.

Health and related indicators

	Least developed countries	*Other developing countries*	*Developed countries*
Number of countries	29	90	37
Total population (millions)	283	3,001	1,131
Infant mortality rate (per 1,000 liveborn)	160	94	19
Life expectancy (years)	45	60	72
Percentage of newborn with a birth weight of 2,500 g or more	70%	83%	93%
Coverage by safe water supply	31%	41%	100%
Adult literacy rate	28%	55%	98%
GNP *per capita*	$170	$520	$6,230
Per capita public expenditure on health	$1.7	$6.5	$244
Public expenditure on health as % of GNP	1.0%	1.2%	3.9%

Note The figures in the table are weighted averages, based on data for 1980 or for the latest available year.
Source WHO.

The majority of the people living in the least developed countries are exposed to living conditions which favour multiple infections. Most sick people suffer from a number of different parasitic, bacterial, viral and fungal agents at the same time. The prevailing tropical climate with its high temperature and humidity facilitates the transmission of disease. Primitive housing, lack of sanitation, inadequate hygiene and illiteracy increase the risk of exposure.

In addition malnutrition is widespread, giving rise to the type of vicious circle stressed in this paper. On the one

42 See Winslow C E A, *The Cost of Sickness and the Price of Health*. Geneva (WHO) 1951, p 9.

43 ibid.

44 Department of Health and Social Security, *Inequalities in Health*, London 1980, quoted in: Morris J N 'Epidemiology and Prevention'. In Milbank Memorial Fund Quarterly, Vol 60, No 1, 1982, p 31 (examples are given for the UK).

45 See Kane R L, Kasteler J M and Gray R M (Eds), *The Health Gap: Medical Services and the Poor*, New York, 1976, pp 3–15 (examples are given for the US).

46 WHO, *Global Strategy for Health for All by the Year 2000*, Geneva 1981, p 19.

hand malnutrition is known to increase host susceptibility to infection and to interfere with host immunological responses. On the other, heavy and severe infections are known to precipitate malnutrition.

The structure of mortality (and implicitly morbidity) occurring in such circumstances is typically as follows:

Model disease pattern in less developed and developed countries.

	Less developed country	*Developed country*
Deaths from all causes	100%	100%
– Infectious, parasitic and respiratory diseases	43.7%	10.8%
– Cancer	3.7%	15.2%
– Disease of the cirulatory system	14.8%	32.2%
– Traumatic injuries	3.5%	6.8%
– All other causes	34.3%	35.0%

Source World Bank, *Health Sector Policy Paper*, Washington DC, 1975, p10.

This model may be illustrated with data from Switzerland, Canada, Zambia and Philippines.

Percentage distribution of deaths by cause in selected countries.

	Canada 1974*	*Switzerland* 1975*	*Philippines* 1974*	*Zambia† 1972*
Deaths from all causes	100%	100%	100%	100%
– infectious, parasitic and respiratory diseases	6.6	6.8	44.7	42.0
– Cancer	19.1	22.0	4.3	4.2
– Diseases of the circulatory system	49.3	44.8	18.4	6.6
– Traumatic injuries	10.1	8.7	5.5	4.5
– All other causes	14.9	11.7	32.1	42.7

Sources

*Calculated from: WHO *World Health Statistics*, Vol 1, Geneva 1977, p 20 ff.

†Calculated from: Republic of Zambia, Ministry of Health, *Annual Report for the Year 1972*, Lusaka 1976, p 264 ff.

The two main explanations for the differences in morbidity and mortality structures are:

- The different age structures of the populations in less developed countries and industrialised countries which largely determine the incidence of conditions such as the chronic degenerative diseases, cardiovascular diseases and cancer. As life expectancy rises, such diseases occur more often.
- The different socio-economic conditions in which the majority of the population has to live. The socio-economic conditions of poverty with its lack of hygiene and sanitation, and qualitative and quantitative nutritional deficits favour airborne and faecally related infective diseases and increase the susceptibility to ill-health creating the typical pattern of what can be defined as 'poverty diseases'.

Infectious, parasitic and respiratory diseases constitute a six to seven times higher percentage of all deaths in less developed countries than in developed countries. The excess mortality so caused is particularly marked in children. Enteritis hits hardest at those under 5 years of age. It accounts for up to 50–80 per cent of all deaths from infective and parasitic diseases.

In addition to paying close attention to this last area the WHO has placed special emphasis on the six[47] main tropical diseases. With the exception of leprosy, all of them are parasitic infections and vector-borne. With most both treatments and methods of prevention are known. Yet despite efforts to control them the situation has not improved over the last five years: 'the degree of damage to health caused by the major tropical diseases has changed little'.[48] In some regions, the situation has deteriorated:

- Malaria continues to be a public health problem of great socio-economic importance, chronically affecting 250 million people. About 1,800 million people are exposed to infection. Over the next few years the global malaria situation may be expected to worsen.
- Schistosomiasis continues to be a serious problem, with an estimated 200 million people infected. Schistosomiasis is spreading in association with the implementation of water resource projects in most developing tropical countries. For example, the prevalence of schistosomiasis rose from 10 per cent to nearly 100 per cent among the inhabitants around Lake Volta, Ghana, within five years of impoundment.
- Filariasis continues in its different forms to affect several hundreds of millions of people.
- African Trypanosomiasis constitutes a serious threat to 45 million persons. In Latin America some 65 millions more are at risk from Chaga's Disease.
- Leprosy is on the increase, at least with regard to case finding. The estimated total number of leprosy cases is over 11 million.
- Leishmaniasis is a disease the extent and severity of which was largely unrecognised until recently. It is now estimated that there are 400,000 new cases each year.

47 With the exception of leprosy, the 'six diseases' included in the Special Programme do not represent single disease entities, either by aetiology or as syndromes. They are, in fact, five groups of diseases and in each group there are at least three specific infections caused by different, though generically related, parasitic agents which differ in their pathogenicity to the human host. There are, for example, four clinical types of malaria *(P. falciparum, P malariae, P. vivax* and *P ovale)*: four diseases caused by different schistosomes *(S. haematobium, S. mansoni, S. japonicum* and *S. intercalatum)*: three types of trypanosomiases, including the acute and subchronic forms of African sleeping diseases caused by *T. rhodesiens* and *T. gambiense*, as well as Chagas' Disease *(T. cruzi)*: three major types of leishmaniases, namely Kala-azar *(L. donovani)*, cutaneous-mucocutaneous leishmaniasis or Espundia *(L. braziliensis)*, and cutaneous leishmaniasis or oriental sore *(L. tropica)*; and eight filarial diseases *(W. bancrofti, B. malayi, O. volvulus, D. streptocercum, L. ioa, D. perstans, M. ozzardi* and *D. medinensis)* with syndromes ranging from the mild constitutional symptoms found in infections with *D. perstans* to such severe chronic disability as, for example, elephantiasis in Bancroftian filariasis and blindness in onchocerciasis. Thus we are actually speaking of *23* diseases, all found concentrated in the tropical zones because of the environmental requirements of their vectors and intermediate hosts. See WHO *Epidemiological research on Tropical Diseases*, TDR/WP/76. 18, pp 2–3.

48 *Tropical Disease Research Newsletter*, No 18, (WHO) Geneva, May 1982, p 5.

The table below stresses the enormous dimensions of the problems caused by the tropical diseases.

Tropical diseases as a public health problem (in millions)

	Actually suffering	*Exposed to*
Leprosy	11–12*	2,000
Trypanosomiasis		
– African	?	45†
– Chagas' Disease	24†	65†
Filariasis	300*	600*
Schistosomiasis	200†	600*
Malaria	215†	1,800†
Leishmaniasis	?	?

Sources
*WHO, *Special Programme for Research and Training in Tropical Diseases*, Geneva, 1976.
†WHO, *Newsletter on Tropical Disease Research*, No 18, Geneva, May 1982.

Today optimism with regard to quick solutions has disappeared. Traditional approaches have not on the whole resulted in satisfactory control.[49] Assessing the situation today, the WHO concludes that 'improvement in the health of tropical populations is not only a matter of developing new tools. The tools must be effective in the epidemiological contexts of disease, acceptable within the social framework of the population which will use them, and available at a cost which is affordable. The circumstances and problems of disease control vary with geographical location, with culture and with time.[50]

Following on from this it is important to remember that the developing countries have at their disposal (per head of population) small financial resources, few doctors, and few hospital beds. The vast majority of the rural population still has hardly any access to persons with a professional medical training. In rural areas of the third world some eight out of ten patients consult traditional healers, medicine men, or witchdoctors.

Health care resources in selected countries

	Population per hospital bed	*Population per physician*	*Population per nursing and midwifery personnel*
Bangladesh	5,640	15,050	38,540
Ethiopia	3,080	69,340	22,320
Mali	1,350	42,770	2,480
Chad	1,140	47,980	3,760
Upper Volta	1,170	56,480	3,980
India	1,620	4,100	3,960
Tanzania	700	18,490	2,740
Sri Lanka	330	4,010	1,300
(for comparison Switzerland)	90	560	n.a.

Source World Bank.

These rich-world type health care resources are not well distributed between the major cities and the rural areas where the bulk of disease exists. There is a heavy urban bias in the distribution of all health care facilities with the exception of traditional healers.

If public expenditure on health express the commitment of governments to that goal, then it appears to be astonishingly low:

49 See WHO *Workshop on Epidemiological, Social and Economic aspects of present and future methods of Chagas' Disease Control*, Geneva 1981, p 3.

50 *TDR Newsletter*, Ibid.

Public health (central government) expenditure in selected countries

		In percent of GNP	*Per capita in US$*	*In percent of total government expenditure*
Bangladesh	(1976)	0.8	1	—
Burma	(1976)	0.9	1	6.6
Ethiopia	(1976)	0.9	1	4.5
Nepal	(1976)	0.8	1	6.7
Chad	(1976)	0.9	1	4.2
Upper Volta	(1973)	0.8	1	7.8
India	(1976)	1.2	2	2.7
Tanzania	(1975)	1.9	3	7.0
Sri Lanka	(1975)	1.9	4	6.1

Source World Bank.

In OECD countries (1974) public expenditures on health were, on average, 4.4 per cent of 'trend' Gross Domestic Product.[51] Recent data on the US health system put 'national health expenditures' (public plus private) at 9.4 per cent of GNP, a *per capita* amount of 1,067 US$.[52] The 'Health for all by the Year 2000' target of WHO is 5 per cent of GNP.

Interesting additional information on political commitment is revealed if expenditures on health are compared with those on education and defence:

Public health, education and defence expenditure of selected countries, 1978 (1975 dollars)

	Health	*Education*	*Defence*
Low-income Countries	2	4	7
eg – Somalia	2	5	7
– Burma	1	2	5
– Mali	1	5	4
– Burundi	1	6	3
– Upper Volta	1	5	4
– Sri Lanka	5	8	2
– Tanzania	4	7	7

Source *World Development Report 1981*

Defence almost always seems to enjoy a higher priority than health. The low priority given to health has remained constant over the past ten years.[53] This trend is not encouraging, although the pressing security needs of poor, unstable countries and the development role of armed forces should not be ignored. It should also be noted that if the *per capita* health expenditures of governments are converted at purchasing power parity instead of official exchange rates, then they are up to 3 times higher in absolute amounts.[54]

Comprehensive statistics on private expenditures on health are generally not available. They are, however,

51 OECD, *Public Expenditure on Health*, Paris 1977, (Studies in Resource Allocation No 4), p 10. This was more than twice as much as in 1962 (1.8 per cent).

52 US Department of Health and Human Services, *Health – United States 1981*, Hyattsville 1981 (prepublication copy), p 263. Expenditure on health care is expected to grow faster than GDP in the foreseeable future. See SRI International *Health Care Expenditure in Four Western European Countries*, Business Intelligence Programme, Research Report No 606. Menlo Park, 1978.

53 WHO, *Sixth Report on the World Health Situation*, op cit, p 180 (Part 1).

54 See Galladay F and Liese B, *Health Problems and Policies in the Developing Countries*, Washington (World Bank) 1980, p 13.

assumed to be substantial, particularly if transportation and other costs are accounted for.[55] In the least developed countries most private health outlays are direct household expenditures, as institutional sources[56] like employer financing and private health insurances are not widely available. The impact of charitable institutions like mission hospitals and organisations such as UNICEF is considered to be substantial. There is also evidence that private health expenditure going to traditional healers can be very high if compared with public expenditure on health *per capita*.

Towards an Outline Solution

The health problems of individual developing countries comprise many specific elements: thus generalised solutions or proposals for solutions are frequently unhelpful. Yet there are a variety of structural similarities which allow one to draft at least a rough structure of what could be developed into an appropriate country-specific approach to tackle the currently unacceptable situation.

With complex problems, there are no one-dimensional solutions. Needless to say, more food, clean water, refuse removal, better living conditions and improved education would soon lead to improvements in health. In short, development is probably the best health policy. But this understanding is of itself of little practical use.

Similarly, the insistence that what is needed is more financial support, more doctors, more rural hospitals and the like is undoubtedly quite correct. But it is not realistic. How could these 'health boosters' be forthcoming in countries where there are scarcities in every sector of the economy?

At a workable level, then, what action is desirable? As far as the public part of the health sector is concerned, the first step is to set priorities, that is to invest resources where they will have the greatest effect on mortality, invalidism and the incidence of disease. This seems obvious. In the third world, however, such a health policy rarely gets put into practice. Staff capable of adequate economic, social and medical planning are lacking, as is the appropriate governmental infrastructure.

In the capitals of the third world it is all too common to find ultra-modern hospitals with facilities capable of permitting open-heart surgery and organ transplantation. Whilst only 20 kilometres beyond the city limits children still die of tetanus or diarrhoea because basic pharmaceutical and allied supplies are lacking.

In the South, as it is today, setting priorities in terms of the urgency of the problems generally means that schemes for professional labour intensive and medically sophisticated care should be abandoned in favour of the supply of basic, high quality drugs and other less costly primary care facilities. Broadly speaking setting priorities also means that to start with services needed by the most vulnerable members of the population like mothers and their newborn infants should be selectively favoured. Oral rehydration therapy for diarrhoeal diseases is an obvious example. Setting priorities means concentrating on the reduction or mortality and ignoring diseases which subside by themselves or which leave no lasting damage.

Priorities as regards public health also include prophylactic measures, mainly vaccination campaigns against diseases such as measles (from which hundreds of thousands of children still die in the third world), polio, tuberculosis, diphtheria, and tetanus (one of the chief causes of the high infant mortality in Africa).

For other diseases and conditions like worm infestations or the effects of undernourishment and malnutrition there are no specific preventive measures apart from a well-balanced pattern of socio-economic development. Although a range of effective medicines is available they will usually bring no more than short-term superficial success unless changes take place in the environmental conditions. In the field of public health the accent should thus be laid on diseases which are very common, have a high mortality, and are relatively easy to treat from the technical standpoint. In the modern private sector, however, the situation is totally different.

Here there is another disease structure. The patients requiring treatment in this sector will usually be persons who can afford to pay. Their mortality and morbidity experience tends to resemble that found in the industrialised countries. The conditions involved are more difficult to treat, call for more laboratory investigations and other types of work, and necessitate a more sophisticated hospital infrastructure than could be afforded in the public domain. Since patients in the private sector have higher purchasing power, it is justifiable that the prices demanded should cover the costs of the services provided. The public sector should refrain from taking any subsidies which would intensify difficulties in the provision of medical aid to the majority of patients.

Of course, charging cost-covering prices for, say, transplantations, might mean that such medical services could no longer be offered in every country. In such cases existing centres in industrialised countries or in more advanced developing countries might be used to care for patients from poorer ones. Over and above the advantage that small, very poor countries would not have to spend excessive resources on diseases which are of relatively rare occurrence, capacity available in existing centres elsewhere may be exploited more effectively.

Under conditions where there are too few doctors, nurses, pharmacists and hospital beds, and where the medical infrastructure is thus inadequate, major importance must attach to pharmaceutical products. With the aid of medicines patients can be maintained on an ambulant basis and paramedical personnel can play a large part in the treatment process. Drugs which produce rapid relief or cure without causing excessive side effects, which are easy to use, and which are priced in line with the purchasing power of poor countries may provide a 'breathing space' for the overtaxed health services in the third world and help to ensure that treatment is available for more patients than hitherto.

In simplified terms, the formula for a realistic health policy for most developing countries is 'clear-cut priorities plus effective drugs' in the short term; in the long term it is 'a development policy which satisfies man's basic needs and thus prevents diseases due to poverty and misery'. Such a development strategy should eventually also create the preconditions for fertility to adjust downwards to lower mortality, in order to avoid social and economic problems resulting from sustained high population growth.

55 See (eg) King M, '*Medical Care in Developing Countries*' 12 : 7.

56 See Zschock D K, *Health Care Financing in Developing Countries*. Washington DC (AID), 1979, pp 17–3.

Population expansion in the third world: the struggle to achieve zero growth

It took about one million years for the world population to reach one thousand million. That was in 1800 or thereabouts. From then on the rate of increase rose sharply: two thousand million after only 130 years, three thousand million after another 30 years and four thousand million after fifteen years, that is in about 1975. Today there are more than four and a half thousand million human beings living on a world whose natural resources are becoming scarcer and scarcer and where an ever greater strain is being imposed on the environment.

Currently the annual population growth is just below 2 per cent; hence world population will double in about 38 years. By the year 2000 there will thus be about six thousand million human beings, about twice as many as in 1950. Fifty-nine per cent of them will be living in Asia, 11 per cent in Africa, 13 per cent in Latin America, and only 17 per cent in the industrialised countries. Such figures suggest that the number of persons living in absolute poverty will almost certainly rise and that the problems created by poverty will become more acute. What solutions can be found?

Efforts to improve health conditions in the less developed countries have a direct influence on the pace of population growth. Better health first and foremost leads to a reduction in infant and child mortality. More children survive to the age of reproduction and have children themselves. Better health also leads to higher fertility,[57] as diseases which reduce the chance for pregnancies (like malaria, tuberculosis and rubella) are eliminated or reduced.

The discussion about population growth and its impact on economic progress and social welfare in general was initiated by Thomas Malthus.[58] In his 'Essay on the Principle of Population' he strongly advocated that population size 'must always be kept down'[59] as nature can only support a limited number of people. A growing population, so Malthus argued, would sooner or later face 'positive checks' which brings an increase in the death-rates. To prevent this, Malthus recommended a limitation of birth-rates through 'moral restraint', meaning sexual abstention. Today's discussion about the costs and benefits of population growth is still dominated by the concern that the long run socio-economic development of a society would seriously suffer if the population grows too fast. The answer to the question 'What is too fast?' depends on country-specific circumstances.

A balance of high birth-rates and high death-rates traditionally kept population growth in less developed countries low. This is why, for most least developed countries, the real problems with population growth are yet to come. Countries which already enjoy a certain level of socio-economic development are the ones with fast growing populations. There, the introduction and application of modern medical technology, improved nutrition and sanitation and better hygiene has brought about substantial reductions in mortality, mainly in infants. Improvements in education encourage further progress. While mortality is reduced birth-rates may remain high and in some instances even increase. The result of such changes must be high population growth.

As the interrelation of health, population growth and long-term development is a subject of central importance to development policy, this paper analyses in detail the costs and benefits of population growth, the factors which influence mortality and fertility and the theory of demographic transition.

The Costs of Population Growth

The conventional analysis of the costs of population growth in relation to economic development can be summarised as follows:.

Rapid population growth increases the ratio of dependants to workers. This lowers the savings rate of individual households and thus cumulative savings in the whole economy. Investments in physical capital decline as a consequence.

More capital has to be invested for social overhead purposes like schools and hospitals. Therefore proportionally less resources are available for investment in physical capital yielding tangible production items. Population growth retards the growth of output per worker, because returns on labour diminish as the stock of capital does not increase in the same population.

The relative labour abundance in the agricultural sector may exacerbate income inequalities and worsen the situation of the poorer groups. Within households, the risks for children (morbidity and mortality) increase with the size of the family into which the child is born. Thus in this respect larger family sizes adversely affect family welfare.

High population growth in the past and present leads to a young age distribution. Today in many least developed countries up to 50 per cent of the population is under 15 years old:

Age structure in selected country groups and countries

Countries and country groups	*Age group 0–14 years*	*Age group 15–64 years*	*Age group 65 and more*	*Dependent children per 100 working age adults (15–64 years)*
Low income countries	43.4	53.1	2.9	82
– Ghana	47.5	49.0	2.0	97
Middle income countries	40.4	54.3	3.6	74
– Kenya	47.0	50.0	3.0	94
Industrialised countries	23.3	64.2	11.3	36
– Sweden	21.0	64.0	15.0	33

Source World Bank, *World Tables 1980*, Washington, DC, 1980, pp 436–41 (all data are 'most recent estimates').

The working age adult population (unemployment not considered) of an economy characterised by high population growth (such as Ghana) has to support about three

57 Taylor C E, Newman J S and Kelly N U, 'Interactions between health and population'. In *Studies in Family Planning*, Vol 7, No 4, New York 1976, p 95.

58 Mark Perlman, ('Some economic growth problems and the part population policy plays', *Quarterly Journal of Economics*, Vol LXXXIX, No 2, May 1975) has found an 'earlier and better statement of Malthus's *a priori* argument' (p 248) in Francesco Botero *Delle cause della grandezza delle cita* (1558). However, Malthus had a much bigger impact on the discussion of the population issues.

59 Malthus T R, *An Essay on the Principle of Population as it Effects the Future Improvement of Society*, London 1798. In the later editions he slightly modified the title to *An Essay on the Principle of Population or a View on its Past and Present Effects on Human Happiness.*

times as many children than that in an economy characterised by slow population growth (like Sweden).

Leff explains why there is an inverse relation between dependency ratios and savings rates: 'Children constitute a heavy charge for expenditure which, in the standard national income accounting framework, is put under the heading of consumption. Because they contribute to consumption but not to production, a high ratio of dependents to the working age population might be expected to impose a constraint on a society's potential for savings'.[60]

The assumption that high dependency ratio is associated with lower savings was verified in several studies. Leff supported his theoretical assumption with findings from 74 countries, out of which there were 40 less developed countries.[61] Musgrove has supplemented Leff's findings with a field study from Latin-America.[62]

A similar exercise in Taiwan has also confirmed the view that more children negatively affect savings. Freedman found that, for Taiwanese families that have been married ten years or more – holding income and education constant – smaller families were more likely to have accumulated some savings since marriage. The proportions were 48 per cent, 41 per cent, 40 per cent and 31 per cent for family sizes 1–2, 3, 4 and 5+ respectively.[63]

Extrapolated to the whole economy, a high burden of dependency will tend to reduce the total amount of savings and therefore the supply of capital. Assuming that the rate of growth of aggregate output (GNP) depends on private investment and public spending on development projects, and that the availability of capital depends mainly on domestic savings (rather than on factors like development assistance or private capital investment from abroad) a high dependency ratio inevitably negatively affects the economic performance of a country.

Even if it is assumed that there is as much capital formation as necessary to equip all new entrants in the labour market with the available capital goods, a low fertility economy is still better off. The reason is that there is a higher share of the absolute amount of investment available for capital deepening.

Meade has shown how difficult it is to maintain standards of capital equipment under conditions of high population growth. Suppose the capital stock of a country to be worth £4,000 millions and the annual income to be £1,000 millions. Suppose the population to be growing by 3 per cent per annum. To achieve a concomitant 3 per cent increase of a capital stock of 4,000 one needs an addition of 120 units to the capital stock. But to save 120 units out of an income of 1,000 one must save 12 per cent of one's income.[64]

If the gross domestic savings of the least developed countries are analysed, they are rarely found to reach a level of 12 per cent. But a large number have a population growth (average 1970–79) of 3 per cent and higher.[65] In such cases, and given the data suggested above, the relative capital structure must deteriorate.

Singer calculated the practical implications of population growth for the investment structure of a less developed country: 'As an example, let us compare Great Britain, a developed country, with Kenya, a developing country. In the latter the labour force grows at a rate of 3.3 per cent per year whereas it increases only 0.4 per cent in Great Britain. Because of this demographic factor, Kenya must create eight times more employment than Great Britain. Thus the available resources for each new job are 120 times (8 × 15) less than those in Great Britain. Should Kenya wish to give itself the luxury of creating the same type of employment as in Great Britain, it would have to spend 120 times as much, relative to its revenue.'[66]

The impact on schooling is similarly severe: 'If in all developing countries the number of children had remained constant after 1960, the number of additional enrolments by 1965 would have sufficed to provide primary schooling for 82 per cent instead of which only 54 per cent were in school. In India the number of primary school places provided today would suffice for universal primary education for the population of the early 1950s. Yet only about 60 per cent of children aged 6–11 are now even enrolled, let alone in satisfactory schooling.'[67]

The absolute size of this problem can be comprehended if individual country data are examined – see opposite.

High rates of population growth also have a tendency to adversely affect the income shares of the low-income groups. It may perpetuate a labour surplus situation and thus depress wages or hold back rises in real wages that might otherwise occur. Increasing inequalities due to pressures on remuneration triggered off by population growth – be it in terms of payment under conditions of overabundancy of labour or in terms of declining harvests due to overutilisation of soil and/or use of less fertile soils – are increasing poverty.

In addition, there are a number of global problems associated with high population growth which carry with them serious economic implications. These cannot be discussed in full here (and are touched on in other sections of this paper); but the following brief comments may be of value.

First, in the context of malnutrition, traditional agriculture can achieve only limited increases in food production. Without substantial investments to raise agrarian productivity it will therefore become even more difficult to feed the rapidly increasing population in the least and

60 Leff N H 'Dependency Rates and Savings Rates'. In *The American Economic Review*, Vol LIX, December 1969, p 887.

61 ibid. He was recently challenged by Bilsborrow on the ground of 'methodological weaknesses' (scaling error in the regression equation and sample heterogeneity). See Bilsborrow R E, 'Dependency rates and aggregate savings rates revisited: Corrections, further analysis, and recommendations for the future'. In Simon J L and DaVano J (Ed), *Research in Population Economics*, Vol 2, Greenwich 1980, pp 183–204.

62 Musgrove P, 'Determinants of Urban Household Consumption in Latin-America: A summary of Evidence from the ECIEL'. In *Economic Development and Cultural Change*, Vol 26, No 3 (April 1978), pp 441–65. His conclusion: Larger family sizes are associated with lower household savings rates.

63 Freedman D, 'Family size and Economic Welfare in a Developing Country–Taiwan' Population Studies Center, University of Michigan, 1972. Quoted in Simon J L, *The Economics of Population Growth* op cit, p 218.

64 Meade J E, 'Population Explosion, the Standard of Living and Social Conflict'. In *The Economic Journal*, Vol LXXVII, London (June 1967), p 24.

65 *World Development Report* 1981. Washington DC p 142–160. There is, however, substantial doubt about the validity of these data.

66 Singer H, at the Cairo World Population Conference Symposium in June 1973 (document UN/E/Conf 60/SYM 1/36) quoted in Tabah L, *Population Growth and Economic Development in the Third World*, Liege 1975 (IUSSP), p 30.

67 Cassen R H, 'Population Growth and Expenditure in Developing Countries'. In IUSSP, International Population Conference, Vol 1, Liege 1973, p 337.

Size and growth rates of school-age populations, selected countries, 1950 to 1980.

	1950	*1965*	*1980*
Bangladesh			
Absolute size	9,697,186	16,053,984	24,482,580
Average annual growth rate (%)	3.36	2.81	
Indonesia			
Absolute size	20,069,434	27,002,990	40,251,910
Average annual growth rate (%)	1.98	2.66	
Nigeria			
Absolute size	8,938,870	12,996,492	21,428,796
Average annual growth rate (%)	2.49	3.33	
Mexico			
Absolute size	6,811,136	12,047,032	19,178,356
Average annual growth rate (%)	3.80	3.10	

Source UN Secretariat. Department of Economic and Social Affairs. *Selected World Demographic Indicators by Countries, 1950–2000.* August 1979, quoted from Birdsall, N, Population and Poverty in the Developing World, Washington DC (World Bank) 1980.

less developed countries. *Global 2000*[68] foresaw a rapid growth in world populations which will occur mainly (90 per cent) in the poorest countries where '*per capita* food consumption will scarcely improve or will actually decline below present inadequate levels'.[69] There is much evidence illustrating the relationship between high population growth and poor availability of food. For instance, Almagir concluded from the 1974 famine of Bangladesh that 'the consequences of adverse forces in 1974 would have been more moderate had the rate of population growth been lower.[70] Most least developed countries today are already net importers of food – this dependency is likely to increase with high population growth, especially if current agricultural policies prevail.

Second, fast population growth has particularly negative consequences for the health of vulnerable groups like mothers and their infants:

> Maternal morbidity and mortality are directly related both to maternal age at delivery and to parity (the total number of children born).[71]
>
> Infant (under 1 year of age) and childhood (1–4 years of age) morbidity and mortality are directly related to the total number of children per family, the time interval between births and of successive children, and a child's rank in the family birth order.

'In families with larger numbers of children, diseases such as gastroenteritis and malnutrition occur more frequently. The physical and mental development of children is negatively correlated with the total number of children in a family, as indicated by such measurements as gain in height, IQ tests and age of menarche. Short birth intervals may lead to early weaning and increased risk of malnutrition in the child displaced prematurely from the breast, as well as to a "maternal depletion syndrome" in the mother (iron deficiency anaemia, malnutrition, avitaminosis) resulting from the cumulative and continuous physiologic stress of pregnancy and lactation which accompanies short birth intervals'.[72]

There are more intrafamily costs of high population growth: Birdsall found in a Columbian field study significant evidence to the effect that investment per child declines 'monotonically' as family size increases. This is particularly so with five and more children. 'As much as 30 per cent increase in the income of the head of the household would be required to offset the negative effect of one additional child on a household's per child educational expenditure.[73]

Finally, there will be a rising burden on ecological systems, on non-renewable resources and on energy if the world population continues to rise at present pace. There are a number of so-called 'world models' which simulate the 'limits to growth'. They all have their own limitations from the poorer countries' perspective: in today's world it is the industrialised North with its relatively small population which consumes more scarce resources and pollutes the environment more than does the South.[74] Yet it is worth stressing that, for instance, over-grazing of pasture and over-use of farmland contributes to man-made erosion in the least developed countries. The *Global 2000* Report foresees a decline from four-tenths of a hectare to one-quarter of a hectare of arable land per person.[75] This is due to population growth. In the least developed countries the massive demand for firewood is in addition likely to accelerate deforestation which again tends to worsen regional water shortages.

The Benefits of Population Growth

Why, it may be asked in the face of such observations, do people have so many children? The answers relate to a number of factors which in low income societies make additional children beneficial for their parents, if not for the nation as a whole.

In addition to the purely personal, existential rewards of child rearing they include:

- additional labour at low cost.
- old age and sickness insurance.

These benefits carry much weight. Where children can participate early in farm and household work, they are obviously economically beneficial to the family. There are field observations which suggest that 'male children may

68 Council on Environmental Quality, Department of State, Barney G O, *The Global 2000 Report to the President, Entering the Twenty-first Century*, Washington DC 1980.

69 see pp 68 and 77–104.

70 Almagir M, *Famine in South Asia: Political Economy of Mass Starvation*, Cambridge (Mass) 1980, p 248.

71 Stewart M M, Reilly T A, Morrow R H, Rosenfield A G, and Suskind R M, Ecologic Determinants of Health Problems, New York 1977. 111/7 p 24–28, see also Taylor C E, Newman J S, Kelly N U 'Interactions between Health and Population', in *Studies in Family Planning*, Vol 7, No 4, New York 1976.

72 ibid, p 29, For more evidence see Birdsall N, 'Population and Poverty' . . ., op cit pp 36–41.

73 Birdsall N, 'A Cost of Siblings: Child Schooling in Urban Columbia' in: Simon J L and DaVanzo J (Ed), *Research in Population Economics*, Vol 2, Greenwich 1980, p 117.

74 See: Mesarovic M and Pestel E, *Mankind at the Turning Point*, New York, 1974, Meadows D H and Meadows D L *et al*, *The Limits Growth*, Washington 1972, Herrera A O *et al*, *Catastrophe or New Society? A Latin American World model*, Ottawa, (IDRC) 1976. This model makes different proposals than the two models above, as it takes a 'South stand' in its argumentation. See also Leontieff W, *et al*, *The Future of the World Economy*, New York 1977, and Kahn H *et al*, *The Next 200 Years*, New York 1976.

75 *The Global 2000 Report to the President* . . . p 16.

become net producers as early as age 12, compensate for their own cumulative consumption by the age 15, and compensate for their own and one sister's cumulative consumption by age 22'.[76] Cain found in his Bangladesh field study that 'children of both sexes begin their economically useful lives around age 6, performing such tasks as gathering fuel, fetching water, carrying messages, and caring for younger children'. Cain's results are substantiated by White, who studied a Javanese village.[77]

In addition to their direct economic contribution, children, and again mostly sons, are in low-income societies the predominant support for old age. As some may die prematurely, or survive but not support the parents, and as there are no suitable alternatives for old age security, parents have a tendency to 'overinsure'. In the ex-post analysis they may have more children than they would have needed to be supported in their old age.[78]

But even without 'overinsurance' the number of children must be quite high to give a satisfactory degree of certainty that at least one son survives until the father is about 65 years old. A computer simulation calculated on the basis of Indian parameters of the 1950s showed that a 65 year old father needed to have had 6.3 children to have a 95 per cent certainty of a surviving son.[79] Children entail low costs in traditional agricultural societies and thus represent a small insurance premium for old age.

Such considerations have over the centuries become anchored in certain typical patterns of thought and behaviour. In societies where kin solidarity is intense there is often a strong compulsion to marry. As a consequence fewer persons go through life without marrying than in the industrial nations. The pressure to reproduce is inevitably strong under such circumstances.[80]

From the female viewpoint there are additional motivations to have offspring as early as possible, and in considerable number. Given the extended family system and the widely prevailing rule of patrilocal residence, the bride is a stranger among her husband's relatives. Because of her newness and her youth, she is often assigned a low position in the restricted hierarchy of women. She has little to call her own until a child is born. The birth of a son is seen as establishing her contribution to her husband's line. This enhances her position within the domestic hierarchy.

Davis has stressed the extent to which the sharp segregation of male and female roles in low-income agrarian societies influence fertility. The effect is to restrict women's activities largely to the household and to identify them with reproduction, so that their lives revolve around home and children. Female education is regarded as unnecessary if not actually immoral. Women in low-income agrarian societies, therefore, have little knowledge, sophistication or independence. They cannot conceive of an alternative role, involving a career outside the home, which would compete with the childbearing one. 'A further consequence of femine seclusion is that, when economic development first begins, women do not proportionately enter the industrial and commercial labour market. The occupations that Westerners now regard as chiefly feminine – nursing, teaching, stenography, domestic service, retail selling – are generally staffed by men. The exclusion of women from the labour market therefore continues for them the conditions favourable to high fertility even after considerable economic development has occurrred.'[81]

In summary, high birth rates are in many non-industrial societies perceived to be economically and socially advantageous to individuals and their families, and behaviour associated with high expressed fertility are strongly rooted in institutions and beliefs.[82, 83] There is, however, at least one important paradoxical benefit in population growth resulting from falling mortality; it may provide the social motor for its own limitation. Declining mortality is a condition *sine qua non* for the motivation for smaller families. There is no evidence that a society ever decreased its fertility without a prior decline in mortality. Population growth in this respect is a problem of transition.

Demographic Transition – the Mechanisms

The demographic history of today's developed countries shows three distinct stages:

- High birth-rates and high death-rates, resulting in low population growth.
- High birth-rates and declining death-rates, producing growing populations.
- Low birth-rates and low death-rates, resulting in low population growth again.

Notestein[84] and others formulated a theory which associates birth and death rates with economic development, based on the statistical evidence of 'premodern Europe'. The theory of demographic transition attaches a specific kind of society to the three stages of population growth mentioned above.

The low-income agrarian society

The low-income agrarian society of premodern Europe was characterised by high and stable birth-rates and death-rates which were also high, though fluctuating in response to varying fortunes. The majority of the people were not able to satisfy their basic needs on a regular, reliable basis. Poverty, with its concomitant malnutrition, lack of sanitation and hygiene, and absence of effective

76 Cain M T, 'The economic activities of children in a village in Bangladesh', in: *Population and Development Review*, Vol 3, No 3, New York 1977, p 201.

77 White B, 'The Economic Importance of Children in a Javanese Village', Colombia University International Institute for the Study of Human Reproduction, New York 1973, unpublished, quoted in Birdsall N. *Population and Poverty in the Developing World*, Washington DC 1980 (World Bank Staff Working Paper No 404), p 50.

78 This is one reason why parents have often more children than they desire, see: Freedman R, 'Norms for family size in under-developed areas', in: *Proceedings of the Royal Society*, Vol 159, 1963.

79 Heer D and Smith D O, 'Mortality levels, desired family size and population increase', in: *Demography*, Vol 5, No 1, 1968, pp 104–21.

80 Davis K, 'Institutional Patterns favouring High Fertility in Underdeveloped Areas', in: *Eugenics Quarterly*, Vol 2, No 1, March 1955, pp 33–39, reprinted in Shannon L W, *Underdeveloped Areas*, New York 1957, pp 88–95.

81 Davis K, Institutional patterns . . . p 93.

82 See for a specific African context: Speed D E, Population crises in Central Africa; Rwanda and Burundi. In Gould G C (Ed), *Health and Diseases in Africa: A Community Approach*, Nairobi 1971, p 243ff.

83 The Population Council gives a short overview on all major religions and their (positive) attitude towards high birth rates. See Population Council (Ed) *World Population: Status Report 1974*, New York 1974 p 21.

84 Notestein F W, 'Economic problems of population change', in: *Proceedings of the Eighth International Conference of Agricultural Economists*, London 1953. It was not only 'premodern Europe', but also Northern America, Australia and Japan which followed a comparable demographic pattern.

health care, resulted in high morbidity and mortality. High birth-rates were institutionalised to guarantee collective survival. This kind of society had structures which were in many ways similar to today's least developed countries.

The transitional society

As the economy changed its structure to a more interdependent and specialised market-dominated system, and as incomes rose, particularly among the poorer classes, better health conditions brought about a reduction in the death-rates.

The European data suggests that societies in this stage, which display a greater division of labour, become more urbanized and exhibit rapid technological change. Infrastructure is gradually built up, so that communication, transport and a number of public services are available. Productivity increases further accelerate social and economic development. Food supply is regular and permanent, law and order is established and investments are made in public health, sanitation and education. As a consequence, death-rates continue to decline.

Somewhat later birth-rates begin to decline as well. For some time, birth and death-rates pursue a more or less parallel downward course with the decline of the birth-rates always lagging behind.

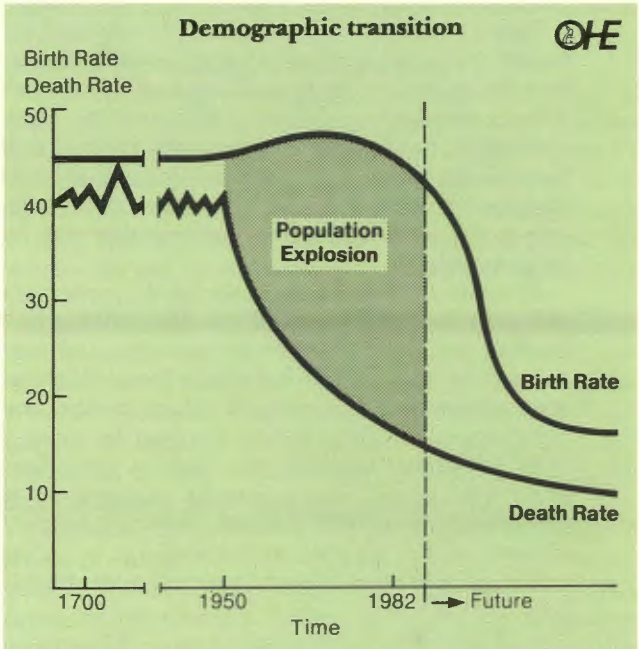
The modern society

Beyond a certain level, for example a crude death-rate of around 10–20 per 1,000, further reductions in mortality become hard to attain. The decline of mortality levels out. The modern society is characterised by a production structure in which the family is no longer an important production unit. Job allocation is done through an impersonal system and there are increasing economic roles for women outside their home environment. Small families become the typical pattern, first in the urban areas at the higher end of the income scale, then gradually spreading out to smaller cities, lower income groups, and eventually to rural areas.

The whole process of development creates multiple pressures which weaken the old ideals and beliefs that favoured high fertility. This accelerates the further decline of the birth-rates. The modern society is characterised by low mortality rates and low birth-rates which respond to voluntary decisions rather than deeply embedded customs and attitudes.

Whether or not a course of transition similar to the North-Western experience is to be expected for the less developed countries of today is uncertain. The varying influences of economic, social, cultural, educational and technological factors cannot be determined accurately. Thus a recent conference on *Health and Population in Developing Countries*[85] could not conclude on the relative weight of such individual elements in initiating or facilitating demographic transition. A background paper to the conference stated: 'The theoretical position of the "basic determinants" of fertility appears to be in considerable disarray. On the one hand, the received wisdom from traditional demographic transition theory is increasingly challenged and qualified as more becomes known, on the other hand the offered reformulations are not yet widely accepted. Everything is always more complicated than that.'[86]

Demographic transition may be graphically demonstrated as follows:



Note Birth and death rates per thousand population.

Nevertheless, for development strategy reasons one observation is of key importance. It is that all major studies reveal that population growth is high where the basic needs of the least advantaged 40–60 per cent of populations or not, or are only poorly, met.[87] By contrast in all cases where fertility has eventually fallen a specific development strategy was adopted: that is, a 'basic needs strategy' creating 'development from below',[88] not imposing new structures with a 'top down' approach.

Further it may be argued that although cultural specificities determine the precise pattern of fertility in a given society, there are at least some basic elements which have been observed in all cases where demographic transition occurred along the lines described above.[89]

Reduced infant mortality

As observed above, societies where parents expect a high proportion of their children to die tend to insure themselves against such losses by having more children. Once they come to perceive that virtually all children born will survive to adulthood, parents gradually reduce their

85 Bellagio, April 18–21, 1979.

86 Berelson B, Mauldin W P and Segal S J, *Background Paper on Population*, Bellagio, April 18–21, 1979. Quoted from Birdsall N, *Population and Poverty*, p 43, footnote 1.

87 See Sheehan G and Hopkins M, 'Meeting basic needs; an examination of the world situation in 1970'. In *International Labour Review*, Vol 117, No 5, Sept-Oct 1978. Also Morawetz D, 'Basic Needs – Policies and Population Growth'. In *World Development*, Vol 6, No 11/12, 1978, pp 1251–59.

88 See Trappe P, *Development from Below as an Alternative*, Basel 1978 (second edition published in *Social Strategies*, Monographs on Sociology and Social Policy, Vol 6, Basel 1978). See also Stoehr W and Taylor D R F, *Development from Above or Below*, New York 1981.

89 With the important difference that demographic transition in today's industrialised countries took 150–200 years, whereas the third world countries like Sri Lanka or Taiwan transition has occurred in about 20 years.

family size goals. But in addition to the behavioural link between infant mortality and fertility, a biological one has become more and more apparent – breast-feeding.

Breast-feeding is not only directly relevant to infant health: it also helps to extend the interval between births, as it delays the return of ovulation and menstruation in a woman who has just delivered. If a baby dies, the mother will stop breast-feeding, resume ovulation and is likely to become pregnant again. Newland draws attention to a Bangladesh study where the extension of birth intervals due to the lactation-ovulation relationship was found to be 13 months.[90]

It would be beyond the scope of this paper to discuss this area in detail. Much of the data relating to breast-feeding and its alternatives is unreliable and potentially misleading. But it is worth stressing that conflicting forces may sometimes be generated when on the one hand development requires a new freedom for women from their traditional domestic role and on the other better child feeding and care generally. Although it may be worthwhile from both a health and a poulation control viewpoint to support breast-feeding in transitional societies, awareness of such broader issues should not be lost.

General and maternal education

Wherever the general educational level has improved, fertility has decreased. This may be illustrated by the findings of a Latin American study[91] which showed the average number of births per couple to be highest when women had no formal education (4.86 births). It declined with 'some primary school' (3.40 births) and reaching the lowest level after completion of primary school and 'some secondary school' (1.21 births).

Admitted there is a network of interrelations between education and infant mortality, level of living, female participation in the labour force and demand for health services, all of which separately influence mortality and fertility. The fact, however, remains: women with completed primary schooling are found to have a lower expressed fertility than those with no schooling at all.[92] The impact of general education is also positive.

Urbanisation

Women living in cities are found to have, to expect and to desire fewer children than their rural counterparts.[93] Again there are multicolinearities with education,[94] standards of living, access to health care, and other factors. The urban life-style in the sense that it is less traditionally conditioned[95] may be an additional complex factor leading to reduced fertility.

Summary

A population policy cannot be pursued in isolation from other policies for income, employment, health, and social welfare; if it is, it is bound to fail. Only the eradication of the disease 'poverty' will heal the high population growth rates which are its symptom in societies which have taken the first steps to improving the quality of their individual members lives. To this extent population expansion is a secondary problem: but it is one which all too often confounds and worsens the primary complaint. It is daunting to recall that:

- Every extra decade it takes to stabilise the world population, that is to achieve a zero growth rate, means that the end population will be 15 per cent higher.
- If the current trend persists – that is, if the birth rates drop by six points per decade – it will take until the year 2090 before the world population becomes stable. The total figure under these circumstances will be eleven thousand million.
- If this process could be shortened by 20 years, the final world population would be about three thousand million lower, that is 75 per cent of present world population.

Faced with these figures we cannot foretell what the world will look like in the years to come, what environmental problems will arise, and where the resources needed to maintain life will be coming from. Population forecasts for poor countries like India and Bangladesh (4,400 and 250 million respectively) induce pessimism about the prospects for a peaceful future in which everyone has enough to live on and is able to lead a decent life.

90 Newland K, 'Infant Mortality and the Health of Societies', *Worldwatch Papers* 47, Washington DC, December 1981, p 42.

91 Data are for Cauquenes, Chile. See Miro C and Mertens W, 'Influences Affecting Fertility in Urban and Rural Latin America'. In *Millbank Memorial Fund Quarterly*, Vol 46, No 3 (July 1968), p 105.

92 See Cochrane S H, *Fertility and Education: What Do We Really Know?* World Bank Staff Occasional Paper No 26, Baltimore 1979.

93 Hermalin A I, 'Empirical Research in Taiwan', op cit, p 250.

94 In correlations where 'mothers's education' was kept constant (as urban educational levels are likely to be higher than rural ones) the factor 'urbanisation' lost much of its significance. See Birdsall N, *Population and Poverty*, op cit, p 52, and the literature quoted there.

95 This was found to be of high importance in the case of Taiwan. See Freedman R, Coombs L C, Chang M C and Sun T H, *Trends in Fertility Family Size Preferences and Practice of Family Planning: Taiwan 1965–1973*, published by the East-West population Institute, Honolulu, 1976.

Economic influences on development – third world debt, free trade and the place of multinational companies (MNCs)

Whatever else has happened in the world economy over the past ten years, one factor has continued to snowball with frightening consistency: the burden of debt borne by the third world. Largely as a result of the steep rise in energy prices, and also since 1978 the worldwide recession and the concomitant drop in the prices of raw materials, this has assumed 'mind-boggling' proportions.

The structure of debt has changed over the years. Increasing proportions have been contracted at market prices and on short terms with private banks. Progressively less has involved international institutions like the World Bank. In 1982 only 21 per cent of total third world debts were being paid on relatively soft terms (to international institutions). The rest had to be served with rising interest rates. The overall average was 11.3 per cent in 1982. This meant that over 60,000 million US$ in interest alone had to be paid.

Debt problems are not equally serious for all third world nations. Some 40 per cent of the total concerns only 4 countries, Mexico, Brazil, Argentina and South Korea. Thus, for the majority of the developing countries, the debt problem is still manageable, if less easily than a few years ago.

The oil-importing developing nations experienced on average a net decline of 13 per cent in their terms of trade over the period 1978–81. This loss reflects the increase in the price of oil, the associated rise in the cost of manufactured imports, and the decline in the prices of most commodity exports. The deterioration in the terms of trade was most pronounced for countries which export commodities like coffee (down 17 per cent), cocoa (down 20 per cent), or rubber (down 23 per cent) or which are in the take-off period of energy-intensive industrialisation and need items like machinery for their expansion. Brazil suffered a deterioration in its terms of trade of minus 25 per cent over the period 1978–81, the Ivory Coast minus 30 per cent, Ghana minus 36 per cent and Ethiopia minus 27 per cent.

How can third world countries escape from this vicious spiral? In principle, there are several ways of tackling the problem: writing off debts, rescheduling them, introducing strong austerity measures and improving the trading performance of the debtor country. Only the last of these approaches goes to the root of the problem. The other two merely eliminate the symptoms and may actually postpone the finding of a true solution.

Some years ago, when political concern first began to focus on this problem, the suggestion was made that the debts should be written off. That is to say the industrialised countries should simply cancel the debts owing them. And in fact a few countries actually did do this. Today, it is evident that this helped for only a very short time, for meanwhile the overall debts have continued to rise. Is it time to cancel the debts anew?

Apart from the costs to the donor nations and agencies one argument against this path is that general cancellation of debts would be tantamount to condoning the economic policy of countries and governments that have been imprudent or irresponsible in their spending and borrowing behaviour. Those that have been thrifty, that have refrained from building prestige airports or new capitals and that have not gone to war against neighbours would in effect be penalised for having pursued a reasonable economic policy. There would no longer be much incentive for them to remain so reasonable since they, too, could likewise hope that their debts would one day be cancelled. The overall effect would be to harm the creditworthiness of the whole third world, and so to collapse the international lending system.

Should lending be cut, in order to avoid a further building up of debts? Can the size and the structure of the third world debt be tackled by simply lending less? Plainly not, most experts agree. Borrowers will find themselves forced to contract their economies, and less and less be able to repay the loans they already have.

Is, then, the answer to lend more? This will depend on the structure of future loans. It is certainly not desirable to lend more if, as has been so over the last five years, quick-maturing private bank loans at market conditions, mostly not linked to productive investment and concentrated on a few third world countries, form a growing proportion of the West's lending. That would leave most development

Debt and debt service by income group

Total debt disbursed at year-end, total annual debt service during 1976–82, $ billion

Income Group	*1976*	*1977*	*1978*	*1979*	*1980*	*1981 prel*	*1982 est.*
DEBT:							
1 Low-income countries	47	56	66	76	86	95	110
of which: least-developed countries	*10*	*12*	*14*	*16*	*19*	*21*	*26*
2 Middle-income countries	48	60	75	91	107	124	144
3 Newly-industrialising countries	89	111	141	165	192	226	266
TOTAL Non-OPEC	184	227	282	332	385	445	520
4 OPEC	36	48	64	74	79	85	106
TOTAL less developed countries	220	274	345	406	465	530	626
DEBT SERVICE:							
1 Low-income countries	3.6	4.4	5.2	5.8	7.9	9.3	11.5
of which: least-developed countries	*0.6*	*0.6*	*0.7*	*0.9*	*1.2*	*1.4*	*1.8*
2 Middle-income countries	6.3	7.9	12.1	14.4	16.8	20.2	23.5
3 Newly-industrialising countries	15.3	19.9	28.8	37.1	40.5	52.3	63.3
TOTAL Non-OPEC	25.2	32.2	46.1	57.4	65.2	81.8	98.3
4 OPEC	6.7	9.9	12.8	18.3	21.7	27.5	33
TOTAL less developed countries	31.9	42.1	59.0	75.6	86.9	109.3	131.3

Source OECD *Observer*. Vol 120, Jan 1983, p12.

requirements unmet and expose the world financial system to great risks. The former World Bank president Robert McNamara believed only one option to be feasible in the medium term. It is a 'gradual expansion of private bank lending to developing countries, alongside a dramatic improvement in its distribution and quality through the rapid build up of supervision linked to lender of last resort facilities; and with concessional and other long-term lending forming a growing proportion of total capital flows'.[96]

In the last analysis, however, the only permanent way of solving the problem of third world debts is to ensure that the trade and payments of the developing countries are brought into a state of balance. As far as imports are concerned, most of the countries will not find it possible to manage without restructuring their economies. Priorities will have to be set – for example, luxury goods should be restricted, preference being given instead to goods which help to increase the local creation of value. To make certain that the steady increase in the need for crude oil is kept within bounds, new and renewable forms of energy must be discovered, developed, and introduced.

It is also necessary to remind the industrialised countries that they need to adopt a more liberal import policy. It would be unfair to go on selling the third world machinery and capital goods on the understanding that they would later be able to sell their products to the industrialised countries and then shut the door in their face simply because the rich nations are anxious to protect their own obsolete structures. Free trade should not be just a fair weather policy.

Today there is a real danger that the industrialised countries, faced with unemployment and recession, will resort to protectionism which will hurt above all the developing countries. One of the aims of current policies is to limit the importation of goods like textiles, which can be manufactured with relatively little know-how and relying on unsophisticated, labour-intensive production methods. But what should the third world export, if not such goods? If the industrial *market* economies belie their avowed philosophy and seek to safeguard jobs by protection against manufactured and semi-manufactured goods exported by non OECD countries, it is possible that retaliation by the developing countries would lead to a disaster in the industrialised countries in the 1980s. Third world exports to rich nations amounted to US$64 billions at the start of this decade, but their visible imports from developed countries were about US$154 billion. A 'trade war' could cost the North-West more jobs than would be gained from keeping imports out.

Only by earning foreign exchange for itself will the third world eventually be able to pay for its imports. If it is not given this chance, then in the long run the industrialised countries will suffer as well. The outcome of protectionist measures directed against the developing countries would be the imposition of import restrictions and a further increase in indebtedness. Ultimately, it is the taxpayer in the industrialised countries who, indirectly, has to pay the bill when debts are consolidated by the state or, alternatively, has to subsidise higher expenditure on social security due to a drop in the volume of goods exported to the third world. It is of note that in the Federal Republic of Germany alone there are more than 800,000 jobs dependent on the exportation of industrial goods to the third world.

Multinational corporations and development

The conduct of multinational corporations (MNCs) in third world countries has over the last ten years become an extremely controversial issue. To some observers multinationals threaten the international political and economic system; to others they promote free trade and good international relations. To some they are engines of economic growth and social welfare; to others agents of doom.

The list of accusations against multinational companies in the less developed nations is long. It is said that they conceal their profits and evade the taxes to which the host countries are entitled, and that they subvert such nations' economic and fiscal policies: that they enforce decisions made at corporate headquarters thousands of miles away, regardless of whether or not they contribute to achieving the host countries' economic and social aims and priorities: that they oppress and exploit, imposing debilitating industrial monocultures on the third world and that they create monopolies and help perpetuate the power of vicious oligarchies bent on enslaving their peoples.

Proponents of such opinions believe that, by pursuing strategies of economic integration regardless of national boundaries, the multinationals have succeeded in acquiring enormous unchecked and democratically uncontrollable power.

But against this it may be argued that transnational companies are a significant force for encouraging industrial development. Generalisations derived from albeit disturbing but usually isolated instances of entrepreneurial misbehaviour by transnational enterprises[97] have sometimes been used to create a distorted view of the entire system of international private enterprise. The fact that negative attitudes towards multinational companies seem to have become relatively widespread can be attributed in part to propagandists who oppose the way of life characteristic of the Western democracies and in part to the incompetence of the companies themselves.

Often multinationals faced with criticism remain mute, anxious not to stimulate further interest in the attacks made upon them. This silence is, however, often construed as a tacit acceptance of guilt. And even in cases where companies speak out against their accusors and try to defend themselves, they often do so in a way which can only be described as 'ham-fisted'. For example, according to over-zealous protagonists, multinationals are the sole guarantors of social and economic progress in the third world.

How is it that the criticisms levelled at the MNCs have generated so much interest? Does the fact that an industrial corporation must *ex definitione* make profits inevitably mean that a nation's economy must lose in the process? Attempts to answer must rest first on a look at the framework and the complementarities within which a multinational corporation works in the third world context.

96 McNamara R, *Economic Interdependence and Global Poverty: The Challenge of our Time.* The First Barbara Ward Memorial Lecture, Baltimore 1982.

97 See Turner L, *Multinational Companies and the Third World.* New York, 1973.

The development framework

Each developing country has its own specific development framework consisting of socio-economic conditions, the political system, historical and cultural background, resource endowment, the sectoral distribution of value added and other components.

A development strategy is simply the domestic policy within the particular framework of each individual country. What is appropriate and beneficial in one country, say Somalia, might be inappropriate if not detrimental in another country, say, Singapore. When seeking to develop its country, each government must try to find that particular path which is best adapted to the local social and economic structures. When cooperating in these attempts, the international community can play no more than a complementary role, selectively supporting the efforts made in each case to develop the national economy.

The paths available to achieve this involve two structurally different 'windows', the 'soft condition window' of international development assistance and the 'business window' where normal market conditions are the rule with regard to payment, prices and competitive offers. Private companies are thus only one stone in a complex mosaic of factors. For good or for bad, the impact of transnationals on 'development' in its comprehensive sense cannot be a decisive one.

Private business in development

In their objectives, transnationals do not differ from purely local companies. They look for markets for their products, try to spot opportunities for company growth, and endeavour to remain competitive. In many cases it is the last of these aims, combined with import restrictions or the necessity for products to be offered along with certain services (advice, service, spare parts), which provides the incentive to 'internationalisation'. With regard to labour-intensive products (clothes, home electronics), low wages may constitute a further motive for investment. This factor – and the same applies to possible tax advantages in the country in which investments are being made – is, however, far less important than the search for markets.

An investigation[98] into the investment motives of the major German companies and the largest Swiss corporation revealed the following:

Motives for establishment or purchase of local firms

Rank	*Motive*	*Priority Rating*
1	Gaining markets/using chances for growth	181
2	Safeguarding markets against competitors	179
3	Safeguarding markets against state interventions (eg, import restrictions)	141
4	Stable political and social conditions in the host country	112
5	Promoting sales of German products	100
6	Factor cost advantages	59
7	Financial incentives offered by the host country	34
8	Financial incentives offered by the Federal Republic of Germany	26
9	Safeguarding raw material supplies	16

Source Pausenberger 1980

As a consequence the geographic distribution of the investments made by multinational companies is not even across the world. Those poorer countries which have already reached a certain stage of development attract roughly nine investment projects out of ten. Nations whose aggregate purchasing power is generally too poor to constitute a market for modern products attract hardly any international investment. A mere ten countries account for over 50 per cent of all private direct investments in the third world:

Breakdown of private direct investments in developing countries (end of 1977)

Countries	*US $ (m)*	*% Top ten total*
Brazil	10,700	26.0
Indonesia	5,160	12.6
Mexico*	5,070	12.4
Bermuda†	4,065	9.9
Venezuela*	3,300	8.1
Argentina	2,850	6.9
Panama†	2,750	6.7
Malaysia	2,700	6.6
India	2,450	5.9
Dutch Antilles†	2,000	4.9
All ten countries	41,045	100.0

Source OECD 1979.
* oil-producing countries
† offshore banking centres

At the end of 1976, 28.4 per cent of all private direct investments were in Asia (including the Far East and Oceania), 27.8 per cent in South America, 26.7 per cent in Central America, about 14 per cent in Africa, and only 3.2 per cent in the Middle East.

As demonstrated above, the motives for foreign investment are of a commercial nature. It is in this respect that they differ in principle from development assistance undertaken by governmental or international organisations. To deduce from this, however, that the activities of the MNCs are irrelevant or detrimental to development would be absurd.

Transnationals accelerate production and trade

In the UN's strategy for the Third Development Decade, the factors considered necessary or desirable include 'an accelerated production tempo and a rapid expansion and diversification of their (poor countries) international trade'. In order to attain this objective, the strategy demands that 'by 1990 gross investments should amount to about 28 per cent of gross national product'. Multinational companies can help to accelerate the production tempo and in many cases favour the diversification not only of the products offered locally but also of those intended for export. This effect is in line with the aims of the Third Development Decade.

As a rule, the governments in host countries specify the conditions under which investments may be made. They often specify criteria relating to items like conservation, training programmes, and local participation in management. By such regulations a developing country is able to maintain an investment structure which is in accordance

98 Pausenberger E, 'The Conduct of International Enterprises in Developing Countries'. In *Intereconomics*, Hamburg 1980, (pp 293–98).

with its development targets. It is the prerogative of each developing country to set the latter in accordance with its own beliefs. Multinational companies are usually neither able nor entitled to influence the discussions concerning these targets and priorities. The outcome of the discussions on the political framework engenders what can be described as the 'investment climate'. If this tallies with the aims and ideas of potential investors, then they will invest. If not, they will invest elsewhere. The multinationals are confronted with a situation not of their making and have to conduct themselves accordingly.

Transnationals create jobs

Critics have accused MNCs of undermining minimum wages, of lowering working conditions and even of using child labour in developing countries. Yet in reality this does not appear to be so. In 1976, two studies carried out by the International Labour Organisation (ILO) came to the conclusion that in most cases multinational companies were far ahead of local firms as regards the working conditions, social benefits[99] and training[100] provided for their staff. Hostile commentators deprived of the arguments that MNCs are exploiting local labour may in response say that they are poaching workers from indigenous firms, but in relatively weak economies with few industrial jobs this is highly unlikely to be true.

Turning to the issue of employment creation it is evident that in less developed countries generally it is the agricultural sector which should, for the foreseeable future, provide occupations for the great mass of the people. Even so, the MNCs appear over the past 20 or so years to have created posts in the third world as a whole at a rate faster than the average for the non-agricultural sector as a whole. Despite the attacks of the critics it also appears that these jobs largely benefit local people. In the study of German and Swiss companies quoted earlier it was found that: 'To go by the available empirical data, very few of the staff abroad have been sent out from the home country. In the examined 69 subsidiaries in developing countries the proportion was 0.7 per cent overall: it ranged from 0.4 per cent in the automobile industry to 1.8 per cent in the chemical industry. No more than 13 per cent of the expatriates belonged to the top management; 63 per cent were engaged in production and sales below this level. Local staff occupy a definite majority of the managerial posts; there was not a single case in which the management consisted entirely of expatriates.'[101]

This analysis concludes as follows: 'The background of the various charges (against MNCs) is, one feels, the conviction that there is a fundamental and irreconcilable conflict between the objectives of the development policies of the developing countries and the commerical profit-oriented conduct of the international enterprises. Contrary to this view it has to be pointed out that in important spheres of economic activity the interests of the two sides run largely parallel. To give subsidiaries in developing countries access to modern technologies is consistent with a fundamental demand of these countries and with their micro-economic needs. The same is true of the supply of capital, the education and training of native personnel, and the introduction of local suppliers and industrial customers to a higher level of technology. The commercial requirements of the international enterprise and the demands of development policy are thus in a number of areas congruent.

This does not rule out conflicts of interest which may lead to open clashes. Mention must be made in this context in particular of the transfer of profits and charges for technology, the import and export activities of the subsidiaries and their integration with a world-wide group in which the group management has to take and enforce central decisions. But to sum up our findings in a comprehensive verdict: there can be no doubt that international enterprises are making an important contribution to the industrialisation of the developing countries and are thus – one might say, unwittingly – important performers of development functions'.[102]

This is not to say that transnationals are a condition *sine qua non* for the development of countries of the third world. The development of agriculture and of the rural regions, the creation or enlargement of the material and 'intangible' infrastructure, the establishment of greater social order – all these are things of major importance in the advance of a country. However, with their large bank of know-how, their research and their ability to translate theoretical knowledge into practical results, multinational corporations pursuing carefully adapted corporate policies can be important partners for poor countries striving for progress and future prosperity.

99 ILO *Wages and Working Conditions in Multinational Enterprises*, Geneva 1976.

100 ILO *The Impact of Multinational Enterprises on Employment and Training*, Geneva 1976.

101 See also ILO *The Impact of Multinational Enterprises on Employment and Training*, ibid.

102 Pausenberger E, 'The Conduct of International Enterprises in Developing Countries'. In *Intereconomics*, p 298.

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ISSN 0473 8837

Printed in England by White Crescent Press Ltd, Luton