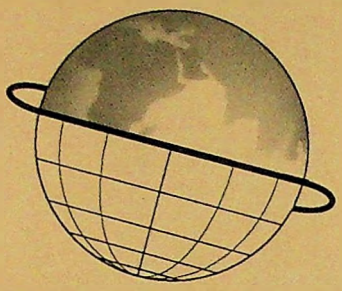
WHO/ICO/MESD.16
Original: English
Distribution: Limited

"Macroeconomics, Health and Development" Series



Number 16

POVERTY AND HEALTH IN DEVELOPING COUNTRIES

and the potential role of technical cooperation among developing countries (TCDC) for the poverty alleviation and health development

Technical Paper

WORLD HEALTH ORGANIZATION,
Geneva, May 1995

"Macroeconomics, Health and Development" Series, No. 16

Other titles in the "Macroeconomics, Health and Development" Series are:

No. 1: Macroeconomic Evolution and the Health Sector: Guinea, Country Paper - WHO/ICO/MESD.1

No. 2: Une méthodologie pour le calcul des coûts des soins de santé et leur recouvrement: Document technique. Guinée - WHO/ICO/MESD.2

No. 3: Debt for Health Swaps: A source of additional finance for the health system: Technical Paper - WHO/ICO/MESD.3

No. 4: Macroeconomic Adjustment and Health: A survey: Technical Paper - WHO/ICO/MESD.4

No. 5: La place de l'aide extérieure dans le secteur médical au Tchad: Etude de pays. Tchad -WHO/ICO/MESD.5

No. 6: L'influence de la participation financière des populations sur la demande de soins de santé: Une aide à la réflexion pour les pays les plus démunis: Principes directeurs - WHO/ICO/MESD.6

No. 7: Planning and Implementing Health Insurance in Developing Countries: Guidelines and Case Studies: Guiding Principles - WHO/ICO/MESD.7

No. 8: Macroeconomic Changes in the Health Sector in Guinea-Bissau: Country Paper - WHO/ICO/MESD.8

No. 9: Macroeconomic Development and the Health Sector in Malawi: Country Paper - WHO/ICO/MESD.9

No. 10: Macroeconomic Adjustment and its Impact on the Heath Sector in Bolivia: Country Paper - WHO/ICO/MESD.10

No. 11: The Macroeconomy and Health Sector Financing in Nepal: A medium-term perspective: Nepal, Country Paper - WHO/ICO/MESD.11

No. 12: Towards a Framework for Health Insurance Development in Hai Phong, Viet Nam: Technical Paper - WHO/ICO/MESD.12

No. 13: Guide pour la conduite d'un processus de Table ronde sectorielle sur la santé: Principes directeurs - WHO/ICO/MESD.13

No. 14: The public health sector in Mozambique: A post-war strategy for rehabilitation and sustained development: Country paper - WHO/ICO/MESD.14

No. 15: La santé dans les pays de la zone franc face [illegible] 5
(document no longer available)

POVERTY AND HEALTH IN DEVELOPING COUNTRIES

and the potential role of technical cooperation among developing countries (TCDC) for the poverty alleviation and health development

by:

Mr Godfrey Gunatilleke,
Executive Vice Chairman,
Marga Institute
(Sri Lanka Centre for Development Studies)
Colombo 5, Sri Lanka

Prepared at the request of the
Division of Intensified Cooperation
with Countries
World Health Organization,
Geneva

First presented at the
19th Meeting of Ministers of Health
of Non-Aligned and other
Developing Countries
Geneva, May 1995

POVERTY AND HEALTH IN DEVELOPING COUNTRIES

and the potential role of technical cooperation among developing countries (TCDC) for poverty alleviation and health development.

CONTENTS

INTRODUCTION

This paper focuses on the link between poverty and health. The link is twofold: poor health retains the poor in poverty, and poverty keeps them in poor health. One strategy for poverty alleviation is to direct special efforts at severing this link and taking people out of the trap of ill-health and poverty.

Low income is often identified as the principal characteristic of poverty; other forms of deprivation as derivatives of low income. This definition often tends to simplify the processes that lead to and perpetuate poverty. Poverty, when broadly defined as the lack of resources to satisfy basic needs, is multi-dimensional in character. It is a condition which encompasses various forms of deprivation:

- inadequate **income**
- lack of **education**, knowledge and skill
- poor **health** status and lack of access to health care
- poor **housing**
- lack of access to **safe water and sanitation**
- insufficient **food and nutrition**
- lack of control over the **reproductive process**

While most often these exist together, deprivation in any one form acts separately and independently as a determinant of poverty reinforcing the other factors and perpetuating poverty. This is especially true of "poverty in health". The health status is linked to all other variables. It is therefore necessary to identify strategies by which health can act on the other variables.

The first part of this paper examines the situation in the 40 poorest countries of the world. Four sets of health- related variables (approximately 25 in all) are analysed, their relationships are examined for several groups of countries with varying economic situations and some critical issues regarding the poverty-health link are highlighted.

The second part examines in greater depth data for the poorest countries and inter-country comparisons concerning the relationships between poverty and health. It takes a subset of countries which have suffered negative rates of per capita growth income in Africa and Latin America and examines health indicator and poverty trends in these countries. It presents broad conclusions regarding the typical problems and policy issues concerning health and poverty, drawing on relevant experience from East and South East Asia, South Asia, Africa and Latin America. The analysis in this section points to important areas where there is considerable scope for sharing experience and lessons among developing countries.

In the third part, the potential for Technical Cooperation among Developing Countries (TCDC) is analysed in greater detail, taking account of the unique opportunity available in a situation where countries are at different stages of the health transition. These situations enable a given country, on one hand, to transmit the lessons of its own transition to the country lower down which is entering that stage, and on another to benefit from the country in transitional stages immediately above it.

The fourth part provides a selective survey of relevant initiatives and experiences in TCDC. It examines the role of TCDC in areas of poverty alleviation and health, briefly discusses existing mechanisms for TCDC and reviews the progress made. There is an attempt to identify initiatives which have been successful. The paper proceeds to outline the steps that should be taken to further develop and strengthen TCDC in areas relating to poverty and health.

PART 1. POVERTY AND HEALTH IN THE POOREST COUNTRIES - AN INTER-COUNTRY COMPARISON

ISSUES RELATING TO CROSS - COUNTRY COMPARISONS

It is possible to draw initial conclusions about how health indicators move with reduction of poverty, by examining observable changes along the gradations of income among the poorest countries in the world. Table 1 illustrates the 40 poorest countries in terms of their per capita GNP, as listed in the World Bank's World Development Report 1993. The countries have been grouped into four income categories, the lowest income category with 11 countries having per capita incomes ranging from US$ 80 (Mozambique), to US$ 210 (Sierra Leone), to the highest with 10 countries having per capita incomes ranging from US$ 500 (Sri Lanka), to US$ 650 (Zimbabwe).

Before the comparisons are examined, the limitations which are inherent in such inter-country comparisons must be emphasized. First it is difficult to achieve accurate cross-country comparability when estimating per capita GNP. The World Bank's estimates which have been used in this paper have made adjustments to the national GNP estimates after systematically assessing the appropriateness of official exchange rates. Even after this is done the conversion does not adequately reflect relative purchasing powers of currencies. The estimates computed on the purchasing power parity of the dollar for different countries in the HDR, produce a somewhat different ranking from that of per capita GNP in World Bank estimates. Estimates based on purchasing power parity, also show a sharp reduction of disparities between countries. Therefore the findings of this paper must be considered as a broadly indicative analysis. The inter-country comparison and the analytical framework need much greater refinement, but in their present form are adequate for eliciting basic patterns in the relationships between poverty and health and for analysing the main issues.

INDICATORS OF WELL-BEING AND THEIR SIMULTANEOUS UPWARD MOVEMENT

The 20 indicators that have been selected can be grouped in different categories. One way is to group them into categories - health-related, educational, demographic, food. Another is to group them as outputs and as inputs or processes which are needed for the output. The output indicators will show the conditions of well-being, such as life expectancy, infant and child mortality, adult literacy. The indicators of the processes and inputs will include those that are health related, such as access to health services (and within it pre-natal care), access to water and sanitation, immunisation, the demographic inputs such as the fertility rate, birth rate, population growth, the nutritional input in the form of the daily per capita calorie supply, the educational inputs such as school enrolment and (within it) female enrolment. The two categories of outputs and outcomes on the one hand and processes and inputs on the other are not always mutually exclusive; school enrolment is an input into the state of educational well-being and knowledge for managing the adult life, but participation in education and the process of learning is also a condition of well-being and personal fulfilment for the children of school-

going age. Equally, low fertility is an input into health, but can also be taken as a condition of well-being for both mothers and children.

Table 2 presents the mean of every indicator for each group of countries at the four different income levels. Comparative data analysis available for the poorest developing countries indicates that, for most countries health, reduction of poverty and other socio-economic and demographic variables seem to be moving together. Most of the important output indicators - income, life expectancy, adult literacy, enrolment in primary schooling, fertility, daily calorie supply, and absolute poverty - have improved simultaneously as countries move upwards from the lowest quartile. The simultaneous improvement in these variables which can be observed in these four groups of countries, has important implications for the links between poverty alleviation and health. A first set of critical questions concerns the relative importance of the income and other variables. To what extent is an upward movement of the non income variables dependent on the upward movement of per capita income, and to what extent is the dependence reversed? The crucial question is whether the simultaneous upward movement of all key variables, income and non-income, is an imperative condition for the upward movement of each.

DEVIATIONS AND THEIR SIGNIFICANCE

The broad conclusions relating to the simultaneous upward movement of the variables of well-being could be further developed and refined by examining the trends at a more disaggregated level. Figure 7 attempts to plot the movement of the variables at a more disaggregated level. An index of well-being (Table 4) was developed to examine how the non-income variables have moved in relation to per capita income. The methodology is explained in the annexed note (Annex 1). Briefly, the index was compiled by assigning a score for each indicator at three levels of achievement - low, middle, and high - and the sum of the scores achieved by each country used as its score on the total index for the non-income variables. The disaggregation points to certain important irregularities within the synchronous movement observed for the all groups. These irregularities and exceptions could provide us with a clearer understanding of critical variables that are at work. Countries with a score below 35 are to be found in the three lower income groups; countries between 35 and 45 in all four groups; between 45 and 55 in the second, third and fourth groups; and the countries above 55 in third and fourth groups. The non-income variables do not appear to move upwards invariably with income. Nevertheless countries with the highest total index are in the highest two groups.

The irregularities emerge more clearly when selected key variables such as life expectancy are tested against other variables. Countries with life expectancies below 50 years are to be found in all four income groups. With the exception of Bhutan, all these countries are in sub-Saharan Africa.

One set of indicators which does not fit into the general pattern is that of nutritional data. Low birth weight can be found in Table 1. The percentages of low birth weight for South Asian countries are much higher than for most sub-Saharan countries which have lower per capita incomes, lower life expectancy, lower daily calorie supply and much higher infant and maternal mortality. The obvious link between poverty and malnutrition is the insufficiency of food consumption and

calorie intake. A high incidence of malnutrition disproportionate to levels of life expectancy and absolute poverty appear to be characteristic of South Asian poverty. Another related "deviation" is the per capita calorie intake; countries with low per capita incomes, low life expectancy and high infant and child mortality report a per capita calorie intake close to or above the norm, and higher than that of countries with much higher life expectancy and lower infant mortality. The comparative distribution of income does not provide an adequate answer. The explanation appears to lie in some as yet unidentified variables, which may include, among others, food behaviour, processes of physiological adaptation over long periods and genetic factors. This raises questions about anthropometric norms being applied and consequently the estimates of malnutrition.

There are individual countries in each group which deviate sharply from the average in respect of one or more key variables. Madagascar, in the lowest quartile, has an adult literacy rate far above that of any other country in its group. Sri Lanka, in the highest quartile, has a percentage of low birth weight babies higher than that of most countries in the lowest quartile, having much higher rates of infant mortality. Nepal which has a higher illiteracy rate than many African countries has lower infant mortality rates and enjoys a higher life expectancy.

THE RELATIONSHIP BETWEEN INCREASE OF INCOME AND IMPROVEMENT OF HEALTH

While inter-country comparisons of the aggregate data per-capita GNP of countries and their health-related indicators clearly show that increases in income are most often accompanied by improvements in health, what is not equally clear is whether this is an invariable outcome. In some cases increases in per capita income are not translated into corresponding improvements in health. The health outcomes can also vary widely among countries enjoying similar per-capita incomes. These variations reflect the complexity of the relationship between health and income. While health improvement and income increases interact closely, they seem to act independently in response to other variables.

HEALTH CAN IMPROVE WITHOUT SIGNIFICANT INCREASES IN GDP GROWTH OR PER CAPITA INCOMES.

In what special combination of conditions does this occur and when it does, will the improvement in health lead to higher productivity and incomes thereby acting on the health and poverty links to alleviate the poverty?

INCOMES CAN INCREASE WITHOUT IMPROVEMENTS IN HEALTH.

Whether health improves with increases in income will depend a great deal on how the increment is allocated. For households, the allocation in relation to health will depend mainly on patterns of consumption and health behaviour; while for governments it will depend on priorities governing public expenditure. The additional health expenditure will have very different health outcomes depending on what expenditure is being incurred. The determinants of health are numerous, those which are directly related to health, as well as those which act indirectly through factors which influence health behaviour and affect the physical environment for

health. Part of the explanation for health outcomes variations at similar income levels arises from the way in which health-related resources are allocated and managed, whether at national or household level.

SYNERGIES AND IMPACTS OF HUMAN AND PHYSICAL CAPITAL

Deviations from the average pattern in each group draw attention to special characteristics between these variables. The improvement in well-being appears to be affected by processes at two levels. At one level the improvements in well-being obtained through increases in income, life expectancy and health, education and demographic changes appear to be interacting, producing a synergistic impact and accumulating a fund of human capital which contributes to the simultaneous forward movement of all key variables. At another level service inputs affect each condition of well-being, such as access to health care, water and sanitation. This requires both physical capital in the form of infrastructure on the community level and the capacity of each household to access and use it. But the process does not always move smoothly. Some elements may lag behind, whether they concern a condition of well-being such as income or literacy, or inputs such as access to health care. Even when this happens, the fund of human and physical capital already created has an enduring effect. It is often able to sustain the process of improvement even during periods of lag in income growth or income decline. For example, when female education improves it has an independent and continuing impact on child care, on household expenditure, on childrens' school enrolment on nutrition and so on, even during periods of economic hardship.

It would seem, therefore, that when human capital is of a higher quality, it can compensate for a lower level of service inputs. This is probably due to inbuilt capacities at the household level which can be more effective than services delivered by an external agency. In several countries with medium human development, as defined by the UNDP Human Development Report , health personnel attend less than 40% of births, which is also the mean for the countries with low human development, yet their maternal mortality rate, ranging between 200 and 300, is far below that of the latter where the average is between 600 and 700. These countries with medium human development all have higher incomes, higher rates of adult literacy including female literacy and higher daily calorie supply. With available human capital, households in the medium range countries are not as dependent on the external delivery of basic elements of health care, as are households in the low range having much less human capital. This, however, does not mean that medium range households have less access to general health care services than those in the low range. Since the former would have more purchasing power and their countries would have better health systems, a higher level of access is available.

Table 1 **INDICATORS OF WELL-BEING FOR 40 POOREST COUNTRIES**

No.	Country	*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Mozambique	1	80	47	188	14	58	77	39	24	24	34	2.9	45	45	6.5	28	58	54	19	24	11
2	Tanzania	1	10	51	226	11	63	91	80	51	66		3.0	46	45	6.3	74	87	90	18	16	16
3	Ethiopia	1	12	48	861	13	38	71	46	28	16		2.7	50	44	7.5	58	14	40	21	20	10
4	Uganda	1	17	46	921	11	76	83	70	15	31	51	3.3	52	43	7.3		77	86	19	18	10
5	Bhutan	1	18	48	131	13	26		70	31	9	41	2.4	39	47	5.9	3	85	63	17	20	
6	Guinea-Bissau	1	18	39	175	14	59	97	80	39	25	39	2.0	45	47	6.0	16	73	29	25	24	12
7	Nepal	1	18	53	573	10	86	10		42	8	27	2.5	38	46	5.5	10	73	9	13	15	26
8	Burundi	1	21	48	585	10	72	85	80	56	48	52	2.9	46	45	6.8	12	81	80	17	17	14
9	Chad	1	21	47	619	12	57	69	30			33	2.6	44	46	5.9	21	21	22	18	21	11
10	Madagascar	1	21	51	101	11	92	63	65	20	5	81	2.8	43	45	6.2	62	34	77	14	16	10
11	Sierra Leone	1	21	42	178	14	48	86	37	50	62	24	2.6	48	45	6.5	25	69	30	22	25	13
12	Bangladesh	2	22	51	845	10	73	94	60		32	37	1.9	34	48	4.4	7	69	40	13	15	34
13	Lao PRD	2	22	50	151	10	10	11	67	37	24		2.9	44	45	6.7		36		16	14	13
14	Malawi	2	23	45	765	14	71	87	80	53			3.1	53	45	7.6	59	88	76	21	23	11
15	Rwanda	2	27	46	596	11	69	80	80	66	58	52	2.3	42	43	6.4	28	86	82	17	18	16
16	Mali	2	28	48	440	16	24	10	35	41	23	36	3.1	50	45	7.0	27	45	11	19	21	10
17	Burkina Faso	2	29	48	971	13	36	95	60	71	12	20	3.0	47	45	6.5	33	46	49	18	19	12
18	Niger	2	30	46	600	12	29	98	30	55	10	31	3.5	52	44	7.4	47	28	33	19	21	20
19	India	2	33	60	489	90	97	10			15	50	1.8	30	50	3.9	33	90	70	10	13	30
20	Kenya	2	34	59	800	67	94	86	77	50	43	71	3.5	45	43	6.5	28	62		11	85	15
21	Nigeria	2	34	52	198	85	72	93	72	50	15	52	2.8	44	45	5.9	45	43	86	14	15	17
22	China	3	37	69		38	13	11	90	83	97	80	1.3	22	56	2.4	94	94		7	35	6
23	Haiti	3	37	55	125	94	53	94	50	39	27	55	1.7	35	48	4.7	20	30	43	13	12	15
24	Benin	3	38	51	285	11	61	10	30	54	42	25	2.9	45	44	6.3	34	75	69	15	14	10
25	Central	3	39	47	447	10	67	77	30	12	21	40	2.5	42	46	5.8	66	52	38	17	17	18
26	Ghana	3	40	55	129	83	75	91	60	54	42	63	3.2	45	44	6.2	73	46	65	13	13	17

Country	Country	*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
27	Pakistan	3	400	59	431	97	37	101	90	56	24	36	2.8	41	46	5.7	24	81	70	11	130	30
28	Togo	3	410	54	288	87	103	99	60	59	21	45	3.1	48	45	6.6	56	51	83	14	140	32
29	Guinea	3	460	44	500	136	37	100	40	64	24	27	2.9	49	44	6.5	76	55	36	21	220	11
30	Nicaragua	3	460	66	215	56	98	100		54	52		3.1	40	46	5.1	42	78	87	7	75	8
31	Sri Lanka	4	500	71	590	18	107	99	90	71	60	89	1.1	21	54	2.5	87	88	86	6	30	22
32	Mauritania	4	510	47	177	119	51	109	40	70	23	35	2.9	49	44	6.8	23	48	39	19	210	10
33	Yemen	4	520	52	347	109	22	93	30		68	41	3.7	52	44	7.5	11	50	17	14	175	10
34	Honduras	4	580	65	377	49	108	91	66	78	67	75	2.9	38	46	5.0	50	92	78	7	80	9
35	Lesotho	4	580	56	304	81	107	93	80	48	25		2.4	35	46	5.1	28	64	50	11	120	10
36	Indonesia	4	610	60	268	74	117	122	80	51	44	84	1.4	25	52	3.0	43	92	47	9	95	8
37	Egypt.Arab	4	610	61	190	59	98	133	99	88	51	50	2.1	32	48	4.2	24	90	40	9	80	12
38	Zimbabwe	4	650	60	630	48	117	94	83	36	42	69	2.3	36	47	4.7	69	74	83	8	85	6
39	Sudan	4		51	145	101	49	83	60	45	70	28	3.0	44	45	6.3	20	69	40	15	160	15
40	Zambia	4		49	136	106	93	87	74	48	43	75	3.0	47	45	6.5	43	45	80	15	150	14

Key to Indicators

* Groups according to GNP per capita. (1991)
1. GNP per capita.(1991)
2. Life expectancy at birth.(1991)
3. Population per physician.(1970)o
4. Infant mortality per 1000 live births.(1991)
5. Percentage of age group enrolled in primary education.(1990)
6. Daily calorie supply.(1990)
7. Access to health facilities.(1991)
8. Access to safe water.(1991)
9. Access to sanitation.(1991)
10. Adult literacy rate.(1992)
11. Population growth rate.(1991)
12. Crude birth rate per 1000 population.(1991)
13. Women of childbearing age as % of all women.(1991)
14. Total fertility rate.(1991)
15. Births attended by health staff.(1985)
16. One year old immunized.(1992)
17. Pregnant women receiving pre-natal care.(1990)
18. Crude death rate per 1000 population.(1991)
19. Under 5 mortality.(1992)
20. Low birth weight children per 1000 live births.(1990)

o The data are for the year 1970, as comparable data for all countries were not available for a later year. This indicator needs to be updated.

Note: The data on GNP Per Capita are for the year 1991 from World Development Report 1993.
The data for other indicators have been taken from the Human Development Report 1994 and the World Development Reports 1993 & 1994.

Table 2 **MEAN VALUES OF INDICATORS FOR EACH INCOME GROUPS**

Variable Name	Groups Mean Value				Remarks
	1	2	3	4	
1. Gross National Product (US Dollars)	**168.18**	**282.00**	**404.4**	**570.0**	**Poverty**
2. Life Expectancy (Years)	47.27	50.50	55.55	59.60	Health
3. Infant Mortality Rate	125.7273	111.90	89.77	69.625	Health
4. Crude Death Rate	18.45	15.8	13.11	10.37	Health
5. Under 5-Year Mortality Rate	157.72	169.3	131.66	109.37	Health
6. Daily Calorie Supply	82.5	95.6	97.22	104.25	Food & Nutrition
7. Low Birth Weight Babies	13.3	15.1	16.55	10.87	Food & Nutrition
8. Population Access to Health Services (%)	59.7	62.60	56.25	71.00	Access & Service
9. Population Access to Safe Water (%)	36.60	52.87	52.77	63.14	Access & Service
10. Population Access to Sanitation (%)	29.40	25.77	38.88	47.50	Access & Service
11. Births Attended by Health Personnel	31.7	34.11	53.88	41.87	Access & Service
12. One Year Old Immunized	61.09	58.10	62.44	74.73	Access & Service
13. Pregnant Women Receiving Prenatal Care	52.72	57.37	61.37	55.00	Access & Service
14. Population per Physician	33925.45	39381.60	23008.75	15956.25	Access & Service
15. Percentage of Age Group Enrolled in Primary Education	61.36	66.90	74.60	90.87	Education
16. Adult Literacy Rate	42.44	43.62	46.39	63.28	Education
17. Average Annual Growth of Population	2.7	2.79	2.611	2.31	Demographic
18. Crude Birth Rate	45.09	44.10	40.77	36.60	Demographic
19. Women of Child Bearing Age	45.27	45.30	46.00	47.62	Demographic
20. Total Fertility Rate	6.40	6.23	5.47	4.85	Demographic

Figure 1

Selected Health Indicators

(mean values for the 4 country groups)

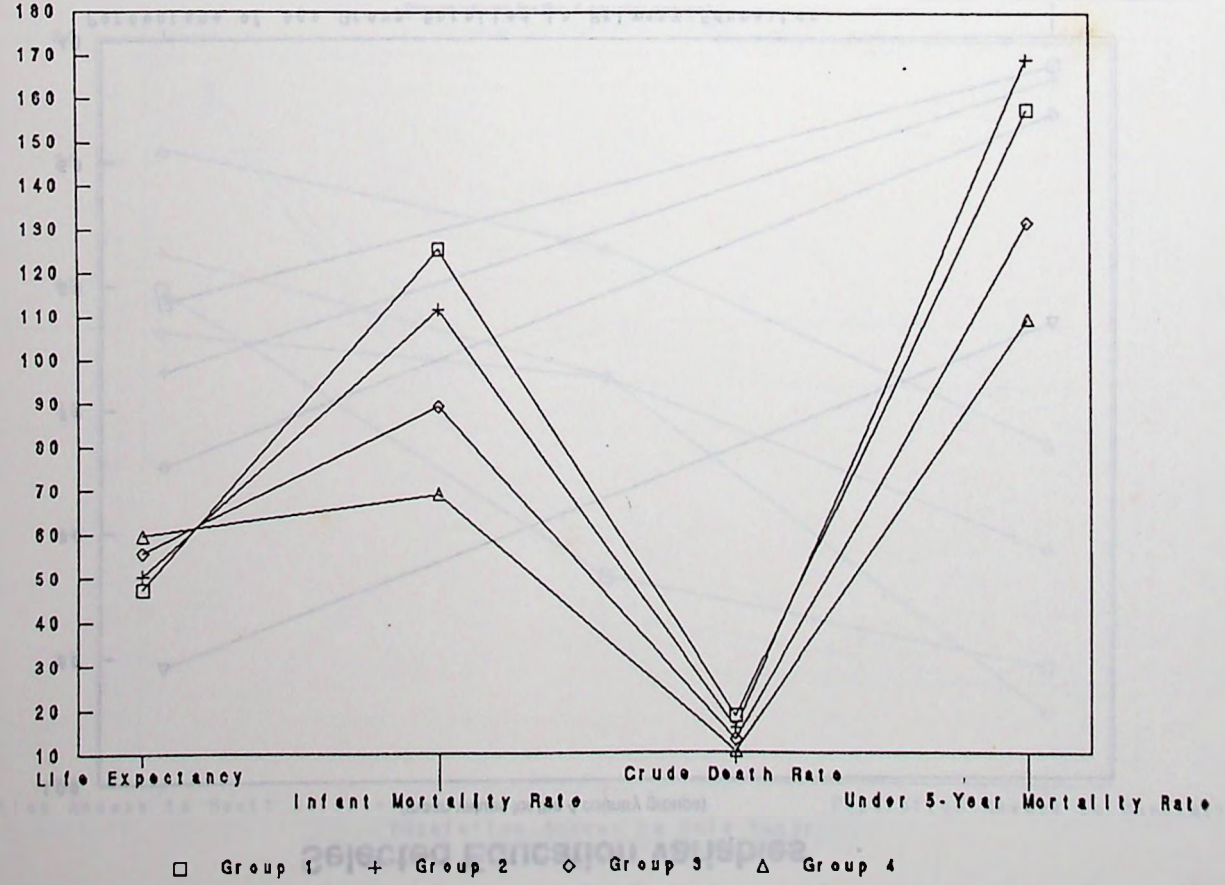


Figure 2

Selected Education Variables

(mean values for the 4 country groups)

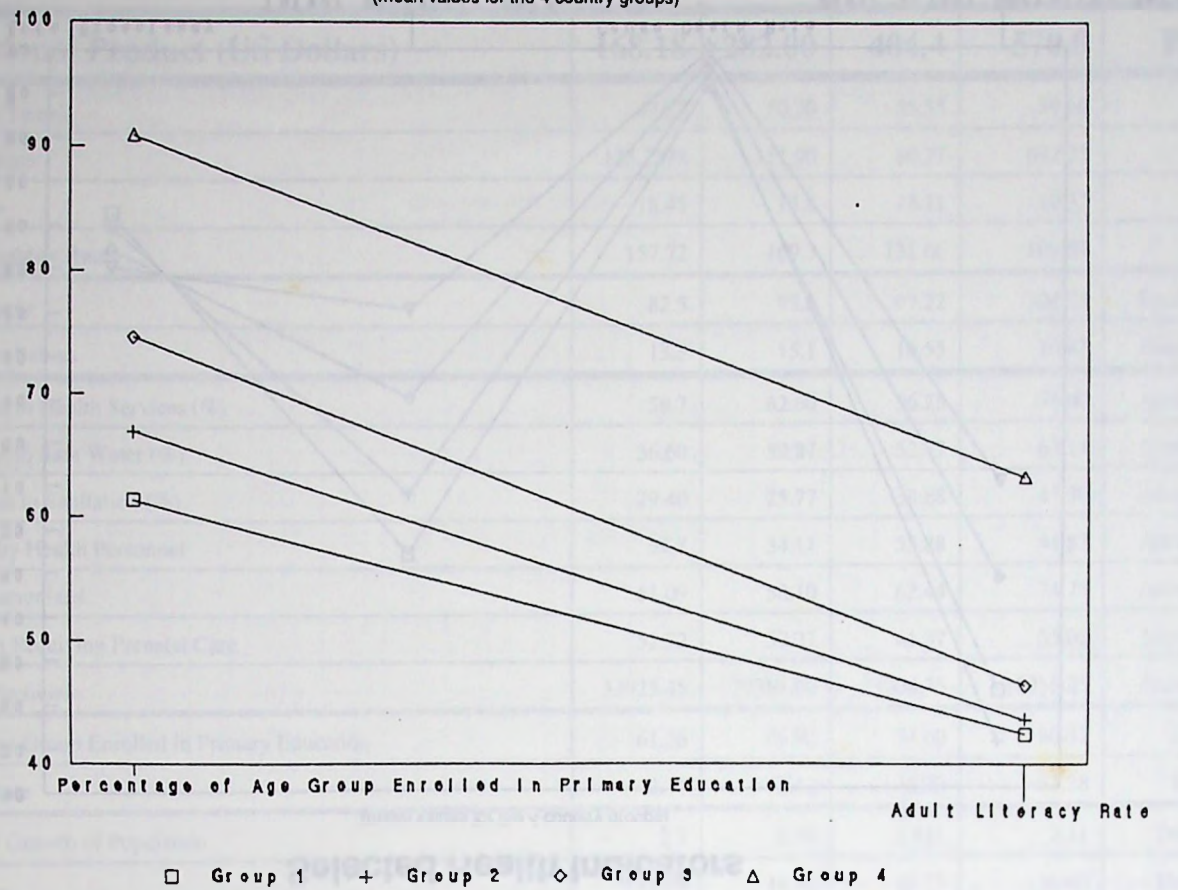


Figure 3

Selected Access & Service Variables

(mean values for the 4 country groups)

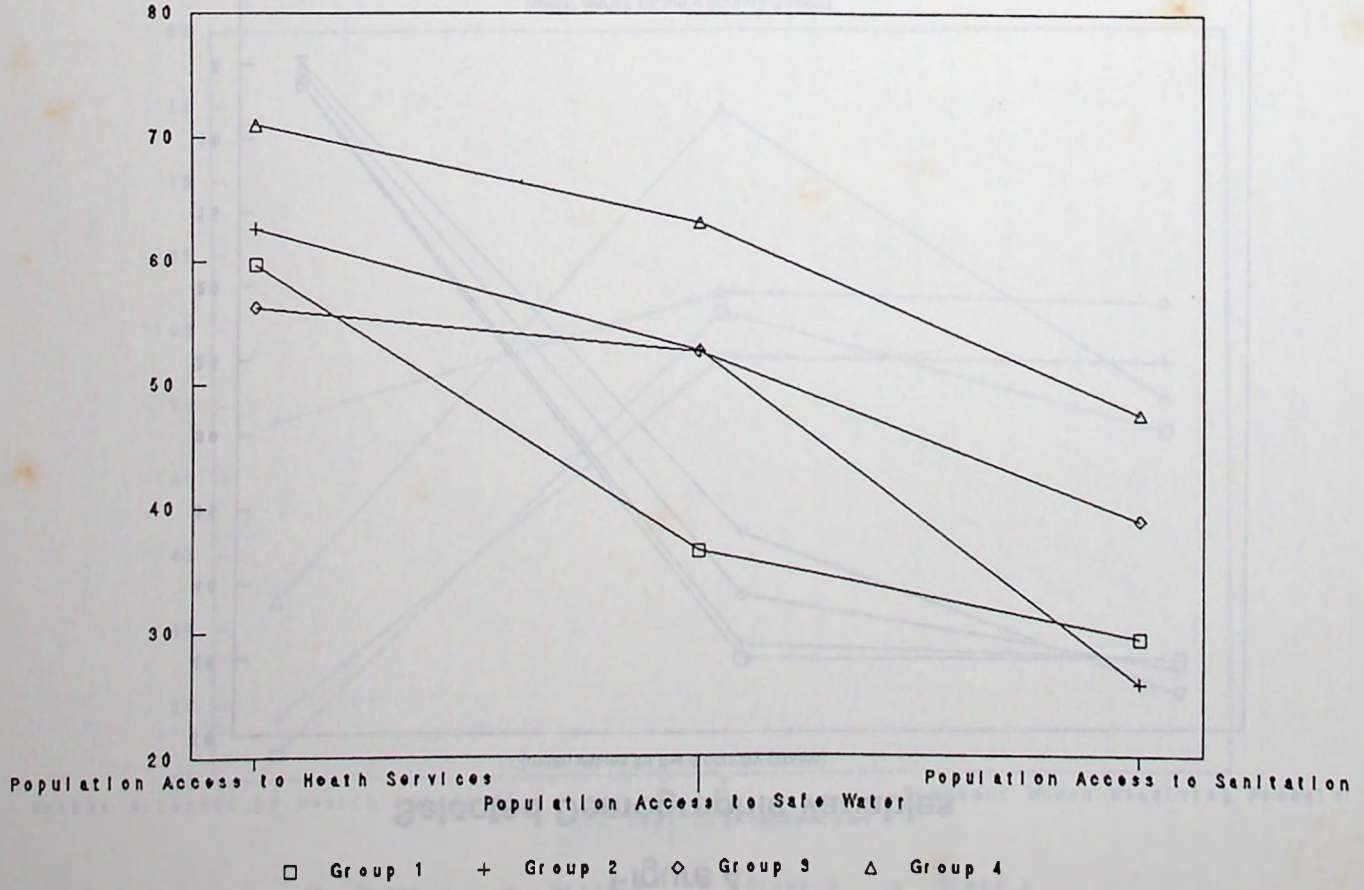


Figure 4

Selected Demographic Variables

(mean values for the 4 country groups)

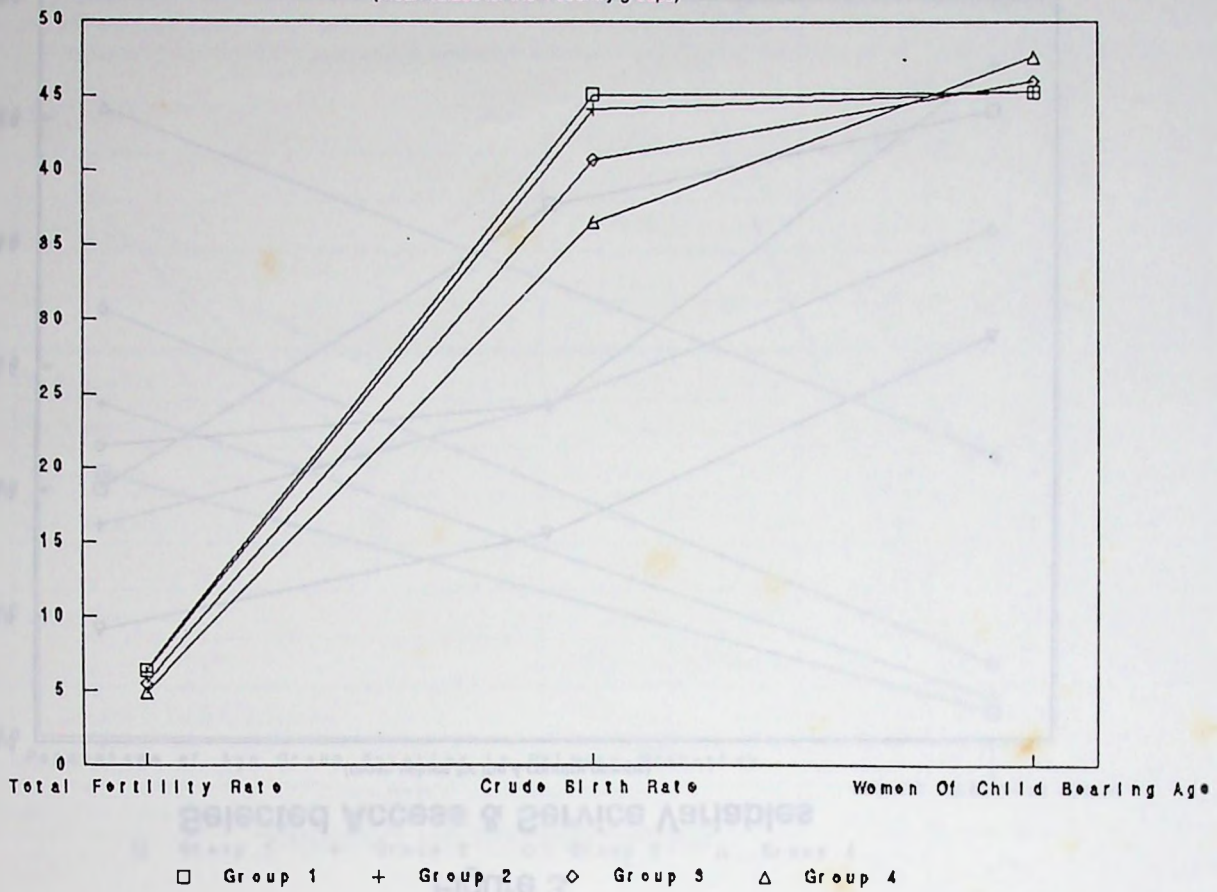


Figure 5

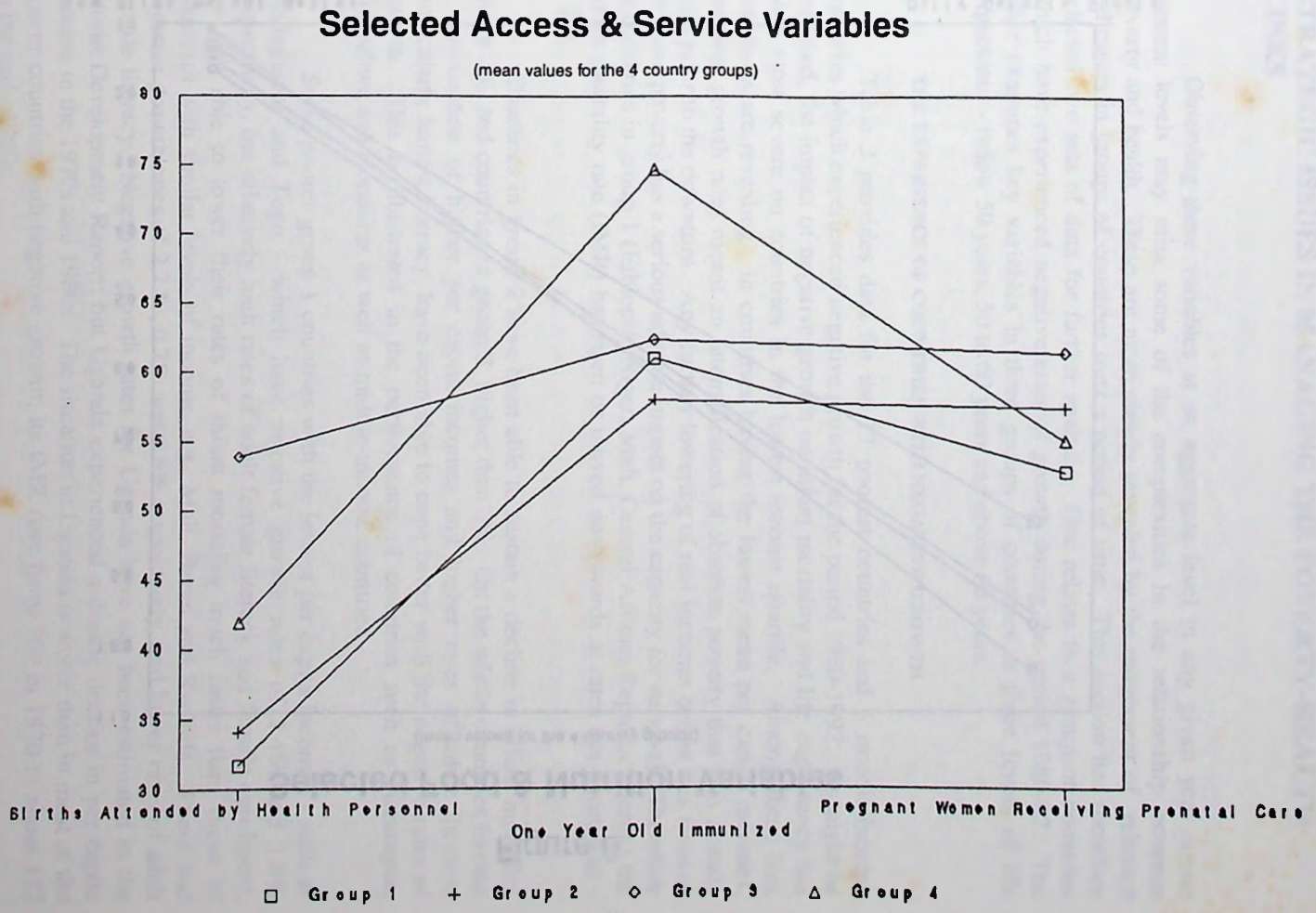
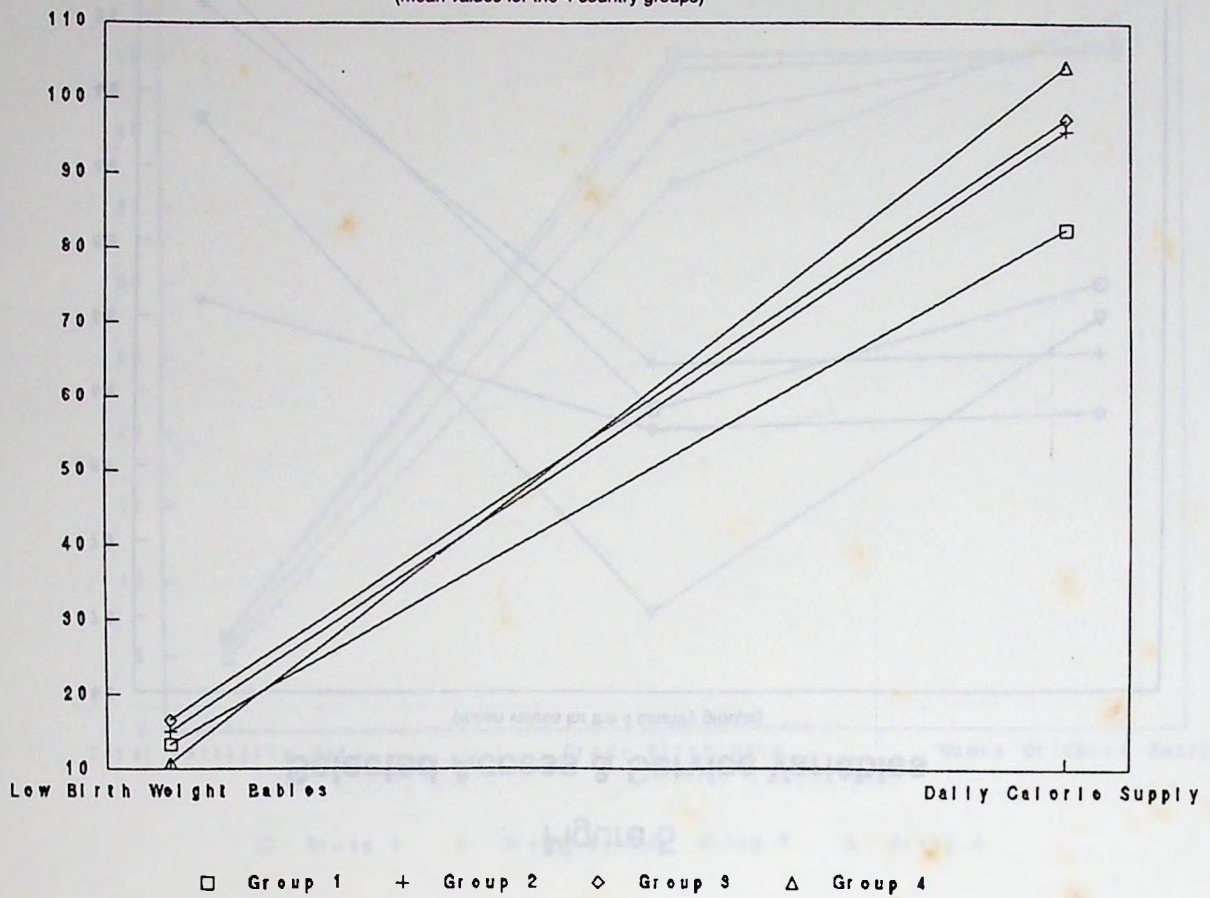

Selected Access & Service Variables
(mean values for the 4 country groups)
80
75
70
65
60
55
50
45
40
35
30
Births Attended by Health Personnel
One Year Old Immunized
Pregnant Women Receiving Prenatal Care
Group 1
Group 2
Group 3
Group 4

Figure 6

Selected Food & Nutrition Variables

(mean values for the 4 country groups)



PART 2. STRATEGIC ISSUES IN MANAGING THE POVERTY-HEALTH LINKS

Observing these variables at an aggregate level in any given year across income levels may miss some of the complexities in the relationship between poverty and health. These are more clearly revealed by the movement of relevant indicators in groups of countries over a period of time. This section has therefore selected two sets of data for further analysis. One relates to a group of countries which have experienced negative rates of growth during the period 1980-92. The other examines key variables in three groups of countries at three levels of life expectancy - below 50 years, 50 to 60 years and above 60 years.

THE EXPERIENCE OF COUNTRIES WITH NEGATIVE GROWTH

Table 3 provides data for the 17 poorest countries and 6 middle-income countries which experienced negative growth for the period 1980-1992. As might be expected, the impact of negative growth on infant mortality and life expectancy has been most severe on countries in the lowest income quartile. Among these too, variations are revealing. In countries having the lowest mean per capita incomes, negative growth rates meant an intensification of absolute poverty that was already high prior to the downturn. Any further lowering of real incomes below this level of absolute poverty has a serious adverse impact on the capacity for survival. Therefore in countries in group 1 (Ethiopia, Niger, Mali, Central African Republic, Benin) the infant mortality rate (IMR) has risen or moved downwards at rates not exceeding -1.2%.

Countries in group 2 have been able to sustain a decline in infant mortality above 2%, and countries in group 3, higher than 3%. On the whole countries having a combination of higher per capita incomes and higher rates of adult literacy, particularly female literacy, have been able to cope better with the negative rates of growth. This is illustrated in the performance of countries such as Nicaragua, Zimbabwe and Honduras as well as middle-income countries.

Some poorer group 1 countries with the lowest per capita incomes - such as Madagascar and Togo - which have negative growth rates of 2.4% and 1.8% respectively, but relatively high rates of adult female literacy and female enrolment, are also able to lower their rates of infant mortality much faster than those of countries with similar levels of income, e.g., Mali, Benin and Rwanda. These had negative growth rates of 2.7 %, 0.7% and 0.6% respectively, and lower rates of adult female literacy. Negative growth rates for Uganda have not been estimated in the World Development Report; but Uganda experienced a drastic decline in per capita income in the 1970s and 1980s. The situation in Uganda is worse than in most of the poorer countries with negative growth; its IMR rose from 109 in 1970 to about 122 in the early 1990s.

In all these cases the effect of available human capital appears to be independent of factors relating to income. The variables which seem to be acting

independent of income needed to sustain the improvement in well-being, are relatively high female literacy and decline in total fertility.

These findings reveal two sets of issues which must be addressed in dealing with the poverty-health links. One concerns the definition and concept of poverty; the other relates to the simultaneous movement of the of well-being variables.

POVERTY AS LACK OF HUMAN AND MATERIAL RESOURCES

Poverty is most often defined in terms of current income. The poor are identified as those whose current incomes are insufficient to satisfy the minimum nutritional requirements and other basic needs. The "current income" concept assumes that low income will adequately reflect deprivation in all other forms. It is indifferent to numerous other non-economic variables which in combination with economic ones produce inadequate current incomes of the poor. Such an approach concentrates on the economic dimension of poverty. It tends to neglect, first, the central role of human capital in poverty and, second, the collective nature of poverty in relation to social and economic infrastructure. The lack of human capital - low levels of education and poor health - reduces income-earning capacity and perpetuates poverty. This lack has to be seen, therefore, not as a derivative of "income poverty", but as an independent aspect of poverty which contributes to it. Poverty should be perceived holistically as an absence of "well-being" where poverty of health, knowledge, education, environmental well-being and income are elements of a total condition in which people lack an entire range of essential resources, both human and material. A major part of any strategy for poverty alleviation must focus on all those processes which improve human capital - health, nutrition, knowledge, skills and literacy, both in terms of households and the community.

These forms of deprivation also draw attention to another important dimension of poverty. The condition of deprivation is one where poverty of households is integrally linked to the collective poverty of communities. When measured in terms of the household and the individual, poverty appears related to their directly available resources. Households and individual poverty derives from the collective or community poverty in which it exists. It results from an inadequate economic and social infrastructure, lack of communal amenities for sanitation, water, health care and education. Therefore the processes which alleviate poverty have to be powerful enough to eliminate these collective elements. Their removal requires strategies capable of distributing improvements equitably throughout society; it must transform both backward parts of the economy and weak social infrastructures which produce poverty.

THE SIGNIFICANCE OF SIMULTANEITY IN DEVELOPMENT

The manner in which all key variables move upwards together points to "simultaneity" of the advance as a primary factor in improving well-being. Each factor of well-being - income-related, health-related, educational and demographic among others - seems to generate a system of supply and demand within which they interact continuously. They tend to move towards equilibrium, in a manner analogous to factors of production in the equilibrium model for an economy.

These variables relating to well-being are interdependent and interact closely. In real situations there is always disequilibrium with one or more "factors" of well-being lagging behind. Processes at work within the system of well-being as a whole, as well as the internal momentum of each factor seem to move them constantly towards an equilibrium.

A fuller understanding of these processes is therefore critically important for policies relating to health and poverty alleviation. In certain situations some variables appear to be triggers activating other variables such as female education or nutritional intake. The "trigger" variables are different for different situations, depending on the existing disequilibrium. These observations underscore the need for an approach which identifies each of the key "output" variables. As integral parts of total well-being, towards which each must move, the output variables concerned are: health status, economic well-being (including income and income earning assets), availability of shelter, water and sanitation, level of education, and participation in the decision-making that affects well-being. The poverty-health link should be defined and understood within that of total well-being. The policies relating to each key variable should be planned in relation to the prevailing disequilibrium. The annexed chart (Figure 8) attempts to depict the relationships between the different resource bases needed for well-being, the processes which produce or reduce poverty conceived as lack of well-being, and the outputs which result in improvement, stagnation or loss of well-being. Each set of variables is linked to the others by two-way relationships and by circular relationships. The health-poverty link must be identified and managed within this system of relationships.

The circuitous nature of the path to poverty alleviation and well-being will vary significantly among countries. For several countries with high mortality, high fertility and high female illiteracy, the path may lie through female education, better spacing of births, smaller family size, better health of women and children. These may result in an increase in the productive labour available to the household and a new and higher income generating capacity. The path for countries, such as Madagascar, with a high rate of literacy may be different. Sri Lanka, with its high social indicators co-existing with poverty, unemployment and malnutrition, will again require strategies which focus on that country's special constraints. The framework which the paper develops can help plot such paths.

Table 3 INDICATORS OF WELL-BEING FOR COUNTRIES WITH NEGATIVE GNP PER CAPITA GROWTH

Country with negative GNP per Capita growth in 1980-1992	Annual rate of GNP		GNP per Capita US$	% of age group enrolled in education - Female				Total Fertility rate		Infant Mortality rate (per 1000 live births)			% Pop. in absolute poverty	Life years lost (per 1000 people)	Rate of change in IMR		Rate of change in life exp. at birth		Life exp. at birth		
				Primary		Secondary															
	60-80	80-92	1992	1970	1991	1970	1991	1970	1992	1970	1982	1992	1992	1990	70-82	82-92	70-82	82-92	70	82	92
Low Income Economies																					
Mozambique	-0.1	-3.6	60	*	53	*	5	6.7	6.5	156	105	162	58.9	141	-3.2	4.4	1.8	-1.5	41	51	44
Ethiopia	1.4	-1.9	110	10	21	2	11	5.8	7.5	158	122	122	60.0	107	-2.1	0.0	1.8	0.4	38	47	49
Sierra Leone	*	-1.4	160	27	39	5	12	6.5	6.5	197	190	143	65.9♦	188	-0.3	-2.8	-0.8	1.2	42	38	43
Malawi	2.1	-0.1	210	*	60	*	3	7.8	7.7	193	137	134	81.5	110	-2.8	-0.2	0.4	0.0	42	44	44
Madagascar	-0.5	-2.4	230	82	91	9	18	6.6	6.1	181	116	93	43.4	63	-3.6	-2.2	1.1	0.6	42	48	51
Rwanda	1.5	-0.6	250	60	70	1	7	7.8	6.2	142	126	117	85.3	124	-1.0	-0.7	0.8	0.0	42	46	46
Niger	-1.6	-4.3	280	10	21	1	4	7.2	7.4	170	132	123	34.2♦	121	-2.1	-0.7	1.4	0.2	38	45	46
Mali	1.4	-2.7	310	15	19	2	5	6.5	7.1	204	132	130	54.1	108	-3.6	-0.2	1.2	0.6	39	45	48
Nigeria	4.1	-0.4	320	27	62	3	17	6.9	5.9	139	109	84	40.0	98	-2.0	-2.6	1.3	0.4	43	50	52
Nicaragua	0.9	-5.3	340	81	104	17	46	6.9	4.4	106	86	56	20.0	45	-1.7	-4.2	0.5	1.4	55	58	67
Togo	3.0	-1.8	390	44	87	3	12	6.5	6.5	134	122	85	29.6♦	79	-0.8	-3.5	0.9	1.6	42	47	55
Benin	0.4	-0.7	410	22	39	3	7	6.9	6.2	155	117	110	64.6♦	89	-2.3	-0.6	1.1	0.6	42	48	51
Central African Republic	0.9	-1.5	410	41	52	2	7	4.9	5.8	139	119	105	90.1♦	74	-1.3	-1.2	1.1	-0.2	42	48	47
Ghana	-1.0	-0.1	450	54	69	8	29	6.7	6.1	111	86	81	41.9	55	-2.1	-0.6	1.7	0.2	45	55	56
Mauritania	1.6	-0.8	530	8	48	0	10	6.5	6.8	165	132	117	85.7♦	*	-1.8	-1.2	1.2	0.6	39	45	48
Zimbabwe	0.7	-0.9	570	66	120	6	45	7.7	4.6	96	83	47	59.3♦	37	-1.2	-5.5	0.8	0.7	51	56	60
Honduras	1.1	-0.3	580	87	107	13	34	7.2	4.9	110	83	49	36.4	27	-2.3	-5.1	0.9	0.9	54	60	66
Lesotho	6.1	-0.5	590	101	116	7	30	5.7	4.8	134	94	46	55.5	*	-2.9	-6.9	1.0	1.2	47	53	60

Lower Middle Income Economies																				
Cote d'Ivoire	2.5	-4.7	670	45	58	4	16	7.4	6.6	135	119	91	*	50	-1.0	-2.6	0.9	1.8	4	4	56
Bolivia	2.1	-1.5	680	62	81	20	31	6.5	4.7	153	126	82	60.0	59	-1.6	-4.2	0.7	1.6	4	5	60
Peru	1.1	-2.8	950	99	126	27	70[0]	6.0	3.3	108	83	52	32.0	32	-2.2	-4.6	0.4	1.1	5	5	65
Guatemala	2.8	-1.5	980	51	73	8	*	6.7	5.1	100	66	62	70.4	41	-3.4	-0.6	0.9	0.8	5	6	65
Dominican Rep.	3.4	-0.5	1050	100	96[0]	*	*	6.3	3.0	90	65	41	54.7	24	-2.7	-4.5	0.3	0.9	6	6	68
Ecuador	4.5	-0.3	1070	95	*	23	*	6.3	3.5	100	78	45	55.8	21	-2.0	-5.4	0.6	0.6	5	6	67

Note : * Not available, ♦ % of Rural population in absolute poverty, [0] for the year 1990 Source : World Development Report; Human Development Report; World Population Prospects

Table 4 TOTAL INDEX OF WELL-BEING EXCLUDING GNP PER CAPITA

Country Number	Country Name	Total Health Index	Total Demographic Index	Total Education Index	Total Nutrition Index	Total Index
1	Mozambique	16	5	7	5	33
2	Tanzania	26	5	8	5	44
3	Ethiopia	14	5	7	7	33
4	Uganda	23	4	9	7	43
5	Bhutan	18	8	7	7	40
6	Guinea-Bissau	18	8	7	6	39
7	Nepal	14	8	8	7	37
8	Burundi	27	4	8	5	44
9	Chad	12	6	6	5	29
10	Madagascar	19	6	15	7	47
11	Sierra Leone	18	5	7	5	35
12	Bangladesh	21	10	9	8	48
13	Lao PRD	18	5	15	8	46
14	Malawi	23	4	8	5	40
15	Rwanda	27	8	11	4	50
16	Mali	13	4	7	10	34
17	Burkina Faso	17	4	6	6	33
18	Niger	13	4	6	5	28
19	India	22	10	13	7	52
20	Kenya	22	5	15	5	47
21	Nigeria	18	6	13	5	42
22	China	27	10	15	10	62
23	Haiti	16	10	9	6	41
24	Benin	17	6	8	10	41
25	Central African Republic	13	6	9	4	32

Country Number	Country Name	Total Health Index	Total Demographic Index	Total Education Index	Total Nutrition Index	Total Index
26	Ghana	17	5	13	4	39
27	Pakistan	26	6	7	7	46
28	Togo	21	4	11	5	41
29	Guinea	17	6	7	8	38
30	Nicaragua	25	7	12	10	54
31	Sri Lanka	30	10	15	5	60
32	Mauritania	16	4	7	10	37
33	Yemen	15	4	9	8	36
34	Honduras	28	8	12	8	56
35	Lesotho	19	10	15	8	52
36	Indonesia	24	10	15	10	59
37	Egypt. Arab Rep	28	10	13	8	59
38	Zimbabwe	23	10	15	8	56

Figure 7

COUNTRIES AND TOTAL INDEX

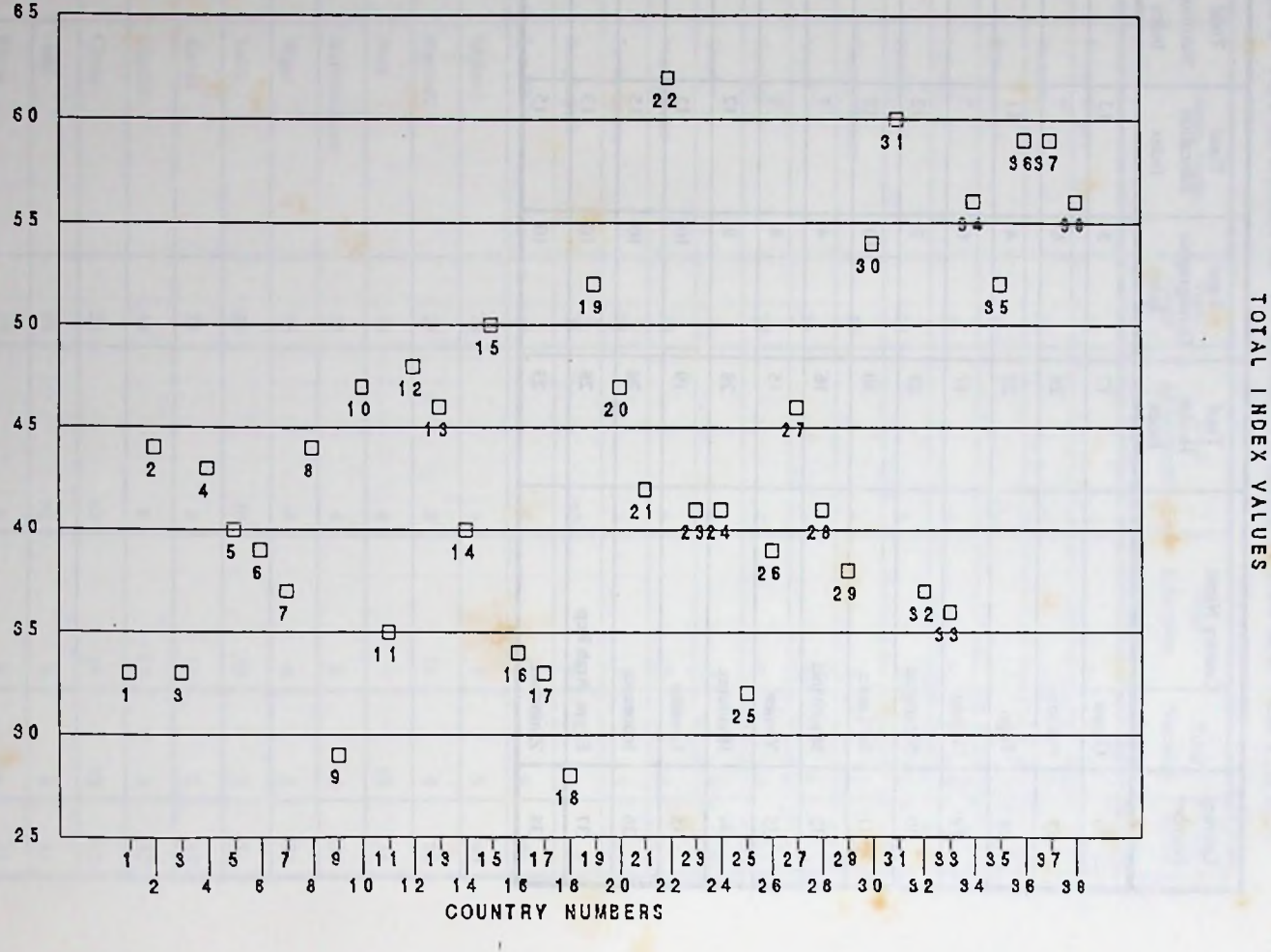
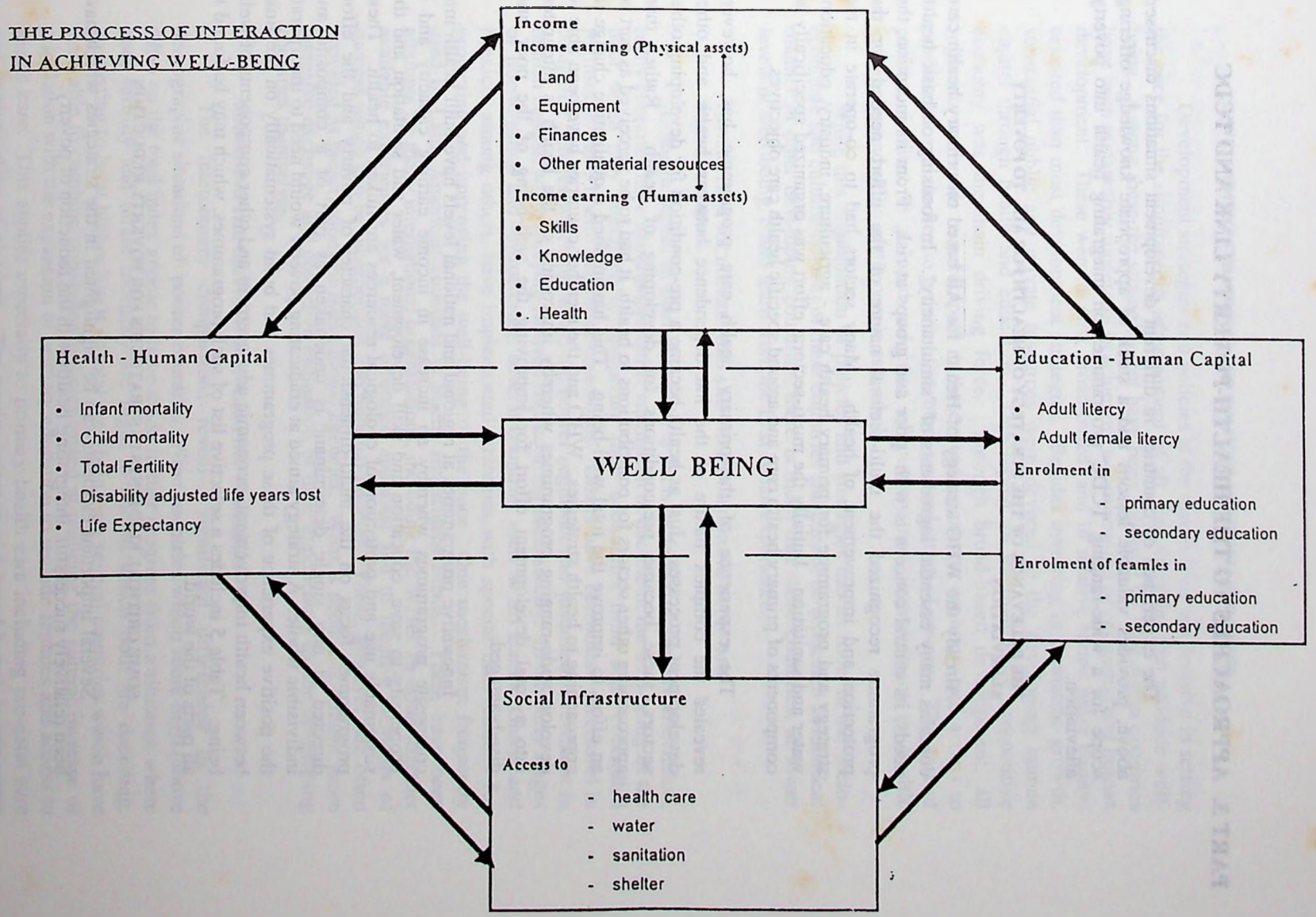


Figure 8

THE PROCESS OF INTERACTION IN ACHEVING WELL-BEING



PART 3. APPROACHES TO THE HEALTH-POVERTY LINK AND TCDC

The experience of countries in different development situations discussed above, provides valuable lessons and a stock of appropriate knowledge offering scope for a wide-ranging TCDC programmes on integrating health into poverty alleviation.

THE RELEVANCE OF THE STRATEGY OF HEALTH FOR ALL TO POVERTY ALLEVIATION

Already the WHO strategy of Health for All based on primary health care contains many essential ingredients of "simultaneity". In focusing on basic health needs, its central concern is with poor and groups at risk. From its inception, the programme recognized the multi-sectoral nature of the effort needed for the protection and improvement of health. Many sectors had to co-operate in the strategy and programme for primary health care - agriculture, industry, education, water and sanitation. Initially the multi-sectoral effort was organized specifically as components of primary health care and around specific health care objectives.

The experience of the primary health care programme has, however, revealed the complex nature of the interdependence between health and other development processes. Just as health became a pre-condition for developing other sectors, these became pre-conditions for developing of health. Rather than approaching other sectors for contributions to health, it had to be perceived as part of an effort to improve the total well-being. This has implied a qualitative change in approaching to health strategies. WHO and the member countries have been able to develop wide-ranging programmes whereby improving of the health is integrated into a total development effort for improving the well-being of the poor and disadvantaged.

Innovative programmes at regional and national levels have built health into composite programmes whereby an increase in income earning capacity and a propensity to save, education and skill development, water and sanitation and the sustainable use and protection of ecological resources are linked to health. These programmes focus on the multi-dimensional character of poverty and the effort directed at any single determinant is undertaken as part of a composite and indivisible whole. A strategy aimed at eradicating poverty would need to incorporate the positive experience of these programmes and build systematically on the links between health improvement, economic advancement and other components of well-being. Table 5 includes a selective list of such programmes, which may be found in all parts of the world.

SOME CRITICAL ELEMENTS IN STRATEGIES FOR POVERTY REDUCTION

Several important elements can be highlighted in the strategies which have been relatively successful integrating health with the reduction of poverty.

DEVELOPMENT STRATEGIES AND POLICIES AT THE MACRO LEVEL

Development strategies and policies at the macro level are decisive in setting the pace for the simultaneous advancement of all key variables that produce well-being. Among these the strategies that have been followed by East Asian countries have been remarkably successful in achieving a combination of economic and human development. These were at first broad-based, and in relative terms more equity-oriented than most development strategies. Besides investing in economic growth, substantial public and private resources were devoted to the developing human capital through health and education. Developing an internationally competitive economy was the main driving force. Through broad-based development, all segments were able to participate in the expanding market economy and access to markets became the key to growth of incomes and reduction of poverty. This mix of policies resulted in a rapid reduction of poverty and improvement in health, knowledge and skills of the people as a whole.

While this combination of policies and strategies has its roots in the socio-economic and cultural context of these countries and cannot be replicated in identical manner in other developing countries, there is much that these countries, at lower levels of well-being, could learn from the East Asian experience.

PROTECTING SOCIAL SECTORS AND THE POOR DURING ECONOMIC RESTRUCTURING

Although access to markets can be a decisive factor in poverty alleviation, many countries have experienced either stagnation or decline in the well-being of the poor when they attempted to restructure their economies from state controlled regimes to more liberal market-oriented ones. Others have been more successful in designing policies which protected the poorer segments and sustained investment in human capital, while carrying forward restructuring successfully. In the early stages of liberalization and restructuring, several countries such as Sri Lanka, Ghana and Mexico, among others, have implemented strategies with special interventions for protecting and improving the well-being of the poor. One mechanism frequently used in Latin American countries is Social Investment Funds. There have been attempts by many international organizations, including the WHO, to bring together available experiences for a more informed appraisal and to identify elements of success which can be incorporated into national policies. These, however, are often provided as prescriptions of international agencies. What is needed is a much more intensive exchange and collective evaluation of their experiences by the developing countries themselves.

MANAGING THE CRITICAL DEMOGRAPHIC VARIABLES

The intercountry comparisons reveal significant differences in the demographic situations of poorer countries. Nine countries which score high (above fifty) on the total index appear to have made further progress from a situation where both fertility and infant mortality are high, to one in which both are declining. Appearing to be at higher levels of total well-being are several countries which have been able to combine population policies aimed at reducing the natural increase of population with the expansion of primary education to include females and access to health care. This applies especially to primary health care including pre-natal care and immunization of children. The equity-oriented and broad-based development strategy would, therefore, need to pay special attention to these policy elements if it

is to have a significant impact on the reduction of poverty. Many of the policy combinations and methods of implementation developed by the nine countries which have fared well in terms of these policy criteria, could have great relevance for the countries at lower stages of the demographic transition.

INTERVENTIONS TO ALLEVIATE POVERTY

Many countries have found that a broad-based strategy of development, which combines rapid growth with human resources development through expansion of primary education and primary health care, does not by itself enable the poor to move out of their poverty at a pace that is needed. The East Asian examples of South Korea and Taiwan are not entirely relevant to many societies where the structural inequalities are high. The East Asian economies had the initial advantage of radical reforms in land ownership which created an equitable base for the market economy. Therefore, several countries facing structural poverty of a high order have attempted to implement programmes of poverty alleviation especially targeted at the poor. These range from national programmes such as the Janasaviya programme in Sri Lanka to basic minimum needs programmes in the Eastern Mediterranean region of WHO, similar ones in Thailand and a wide range of credit to the poor programmes such as the Grameen Bank of Bangladesh and the Kupedes programme in Indonesia.

The programmes appearing to be most successful are those able to deal simultaneously with all the major conditions of deprivation - low income, poor health, high fertility, and illiteracy, especially female illiteracy. In most of these programmes the poverty-health link is clearly articulated and dealt with. In extreme poverty in which about a billion people live, health becomes a problem of survival. Therefore protecting the health of the extreme poor is an absolute pre-condition for all other efforts towards improving their well-being and alleviating poverty. High infant and child mortality, undernutrition of all age groups, prevalence of communicable diseases aggravated by a poor, insanitary environment, poor reproductive health and large families, the especially disadvantaged situation of women, heightened exposure to epidemics and natural disasters make up the familiar health profile of the poor.

The poorer segments of the population are those who are most exposed to risks of major diseases such as malaria, schistosomiasis and onchocerciasis. This is partly because the regions where these diseases are endemic are also the habitats of the poor. They are relatively neglected in the national allocation of development resources and continue in the vicious circle of poverty. The HIV/AIDS pandemic is likely to have its most damaging effects on the poor in regions such as sub-Saharan Africa and Asia. How countries manage control and eradication programmes for major diseases will have a significant impact on poverty and employment creation. This has already been demonstrated by the way countries have benefited from effective control programmes of malaria, schistosomiasis and onchocerciasis.

Various studies on the socio-economic environment of ill-health have shown clearly that discernible variations in ill-health are related to seasonal climatic changes. The rural poor are exposed to various health risks which are intensified during the rainy season. In the dry zone in particular, it is between harvests when stocks of food and income are low. Several elements combine to aggravate the

negative effects of the link between ill-health and poverty. There is a demand for harder physical labour as preparation for cultivation commences. The nutritional intake should be greater than at other times. These needs arise, however, at a time when income from the last harvest is dwindling and standards of household consumption are declining. The poor quality of the available shelter intensifies the health risks in the rainy season. Sources of drinking water which are often not protected are exposed to a high degree of contamination; faecal pollution from unsatisfactory toilet facilities is worst during the rainy season. Higher incidence of ill-health as a result of all these factors leads to a loss of working days and greater demand for health services which are not easily available and involves costs even in the case of free services provided by the State. In poor households the capacity to cope with recurring seasonal stresses of this nature is critical to the condition of well-being. These episodic crises can create the vicious circle of ill-health and poverty in which health intervention plays a strategic role. Health strategies integrated with poverty alleviation should, therefore, pay special attention to the seasonal aspect of health and its multi-sectoral character.

The targeted poverty alleviation programmes lead to two important conclusions. First, the most revealing indicators of poverty are those which are related to health status; they are indicators of the capacity for survival and the maintenance of a minimum quality of life that is essential. Second, strategies of poverty alleviation, to be effective, must give a central place to the protection and improvement of health.

HEALTH AS A CATALYST IN PARTICIPATORY DEVELOPMENT

Successful poverty alleviation programmes show that poverty is most successfully alleviated only when the poor acquire the capacity to participate in their own development. Here again there is a wide variety of experiences relating to participatory development and poverty alleviation. In most of these the initiatives that can be taken by communities and households in dealing with their health problems can act as catalysts for mobilizing the community. For a variety of reasons such as parental involvement in child care and readily perceived benefits to the community, these initiatives play a critical role in stimulating a process of participation by communities and households. They lead to the empowerment of women through all the elements of primary health care and become a major factor for social and economic transformation. Setting community health goals can transcend the parochial divisions and work as a unifying factor for mobilizing the community to collective action which can then encompass other sectors.

This was demonstrated by the way the health component of the Janasaviya programme in Sri lanka was conceived and implemented. The Janasaviya Trust Fund (JTF), which is the main financing institution linked to the Janasaviya Programme, integrates five components in its poverty alleviation programme - the social mobilization of communities which encourages them to develop and move out of poverty, the development of the economic infrastructure of poor communities, a public works programme to absorb unemployed youth, a nutrition and human resource development programme to improve the health and physical well-being of vulnerable groups and a micro-enterprise development programme to promote income-generating self-employment. The philosophy of the JTF recognises the

multi-dimensional aspects of poverty and the need to act on them simultaneously. In another initiative, the Ministry of Health collaborated with the Janasaviya programme in an effort to integrate the health component with poverty alleviation.

The programme called the **Suvasaviya** - the health version of the Janasaviya - added several elements to primary health care programmes at the micro-level. These included community-based information systems, local level epidemiological surveillance systems, appropriate packages of health education material and systems for monitoring health care services which were designed and implemented by the community. In concept, Suvasaviya was effective for mobilizing a community around well defined health goals and entering into the larger programme for improving well-being. In implementation Suvasaviya was limited to eight divisions and was therefore limited in its scope. Evaluation of the programme indicates that some of its main objectives were successful. It was able to encourage households to spend more on health improving investments such as housing, water, sanitation and nutrition, thereby strengthening the foundation for both improving and sustaining their well-being. Integrating health with poverty alleviation in this manner sets in motion a process which enhances human capital of households and communities and increases their ability to move out of poverty.

THE ALLOCATION OF HEALTH RESOURCES

In the entire effort of poverty alleviation, the allocation of health resources plays a strategic part. In discussing the inter-country comparison in the first section of this paper, it was argued that for health to improve with increases in income, the increment in the income has to be allocated appropriately. There also has to be a perception that the investment in health sustains the income-earning capacity and helps to improve it. The allocative decisions at all levels - national, community and household - must be such that they promote choices of lifestyle, patterns of consumption and modes of behaviour conducive to healthy living.

At the household level, a poor household which has learnt to use its scarce resources wisely on the main elements of preventive health - better food and nutrition, a clean home, safe water, improved sanitation - will be healthier than a household with a higher level of income, which neglects preventive health and spends more heavily on curative care. The former has the resource base in health to move out of poverty, the latter lacks that resource base and for this reason can lapse into poverty. The health knowledge and behaviour which enable households to manage scarce health-related resources might, therefore, be decisive in the alleviation of poverty. The inter-country comparisons showed that this capacity, at the household level, is created only through combining many processes where female education plays a key role.

A major problem of poverty, insofar as it relates to health, is that most households might not possess the capacity to provide themselves with the resource base in primary household health. This lack inevitably moves them into sickness and curative care which is costly in every way - loss of work, expenditure on medical treatment - and consequently further aggravates their poverty. In these conditions providing a basic infrastructure which improves access to health care becomes an essential condition for breaking the vicious circle of poverty and ill-health. The

primary responsibility for health care of the poor lies with the State. In its effort at poverty alleviation one of the first priorities of a poor country is to find ways and means to finance an efficient public health care system which can be accessed by the poor.

The criteria for resource allocation at the national level must take account of the overriding importance of protecting health as the foundation for survival and productive work in poor countries. The allocation for health must be in the nature of a "preferential share" of the available public resources. The core resources for health, and within this the minimum resources needed to sustain an effective system of health care, should be clearly identified. There should be a firm national commitment that this core will have the prior claim on available resources. The inter-country comparisons show poor countries which have achieved a relatively high level of access to health care, water and sanitation. Their experience in developing a low-cost social infrastructure accessible to the poor will be of value to other countries not yet able to do so. The Social Investment Funds of the Latin American countries and programmes in the African countries such as Ghana, which were mentioned earlier, have also been useful as instruments that "guarantee" a reasonable level of resources to social sectors, especially during periods of structural adjustment and consequent cuts on public expenditure.

But the perennial problem of poor countries is one of limited revenues which impose severe constraints on public expenditures. Within this context two approaches are possible - one is the reallocation of available resources to strengthen the primary health care system and those components which reach the largest segment of the population. Such an equity-oriented allocation of resources will inevitably benefit the poor. The other is supplementing State resources to the greatest extent possible through mobilization of resources at the community level.

Health care systems would need to identify vulnerable groups and their health needs, and realign both resource allocation and delivery to serve their needs. It is important to identify countries which have attempted such exercises with some success and make these experiences more widely available.

In mobilizing resources for health poor countries have been able to develop many innovative programmes at the community level and savings at the household level which can complement and strengthen resources made available by the State. Cost recovery schemes which mobilize resources at the community level such as the initiative taken by several countries, and now widely known as the Bamako Initiative, is one such innovation. In different parts of the world there are several similar schemes with elements of cost recovery providing an opportunity for pooling knowledge on financing health care for the poor. The efforts to link credit to the poor with programmes for health in Nigeria, the voluntary thrift and credit societies in Sri Lanka and the experience of the Grameen Bank are a few examples among the numerous initiatives taken to mobilize savings and promote investment in health. They all offer lessons which can be shared.

PART 4. TCDC IN POVERTY ALLEVIATION AND HEALTH - THE SCOPE AND ACTION NEEDED

The discussion in the foregoing section has shown that poor countries have accumulated a considerable fund of experience and knowledge on poverty alleviation which is available for systematic exchange among themselves in a programme of TCDC.

AN OVERVIEW OF RECENT AND ONGOING INITIATIVES

After the programme of TCDC was formally launched in 1977, there were a large number of initiatives taken by countries in the main regions of the developing world - Asia, Latin America and Africa. TCDC, defined as the exchange of knowledge, technology and expertise should be perceived in the larger context of economic and other forms of cooperation among developing countries. A large part of TCDC among developing countries has accompanied the expansion of trade and investment flows, which have been increasing particularly from Asia and Latin America. Technology transfers and management skills have accompanied these flows. Along with TCDC in the economic sphere, there has been a considerable effort to share experience in health, education and other areas of social development. While the impact of several programmes has been significant, TCDC activities, however, have still to build into a critical mass that could have its own independent momentum for accelerating the development and improvement of well-being in developing countries.

Several regional conferences promoted bilateral and multilateral TCDC activities in the three regions. Some of the major initiatives undertaken through TCDC having relevance for the issues of poverty and health include the following:

Food security schemes have been an important area of multi-country co-operation. These have been aimed at increasing regional food production and availability; reducing post harvest losses; disseminating and improving processing technology; providing early warning systems; reducing risks from natural and other calamities. Initiatives have been taken in many regions including the Association of South-East Asian Nations (ASEAN) and the South Asian Association for Regional Cooperation (SAARC) regions of Asia and Sub-Saharan Africa. An example of such an initiative is the Southern African Development Coordination Conference. Security schemes of this type have been developed in the ASEAN and SAARC schemes.

TCDC has promoted the sharing of technologies on a wide ranging basis covering many sectors. The New Delhi conference in 1991 for example resulted in 400 exchange initiatives covering crop science, animal husbandry, fisheries, horticulture, agricultural machinery, post harvest technology and dairy farming. In all these areas there is scope for technology sharing appropriate to programmes targeted at the poor. Examples are the bio-gas technology from China and India and the exchange of food and agriculture technology including agreements between countries within a region as well as countries from different regions.

The following small sample of activities illustrates the type of activities fostered by TCDC:

- Argentina has cooperated with Nigeria to produce and promote use of natural pesticides, and helped Nigerian producers improve the production and marketing of potatoes and sunflowers.

- Cuba provides expertise on molasses and use of sugar cane residues.

- Peru assists Guatemala, Cuba and Colombia on an ancient Inca technique for preserving potatoes with minimum loss of weight.

- Argentina assists China to introduce cultivation of Yerbo Mate used to make an infusion similar to tea.

- Guatemala provides assistance to Argentina to control and eradicate cattle worm and the African bee.

- The chorker fish smoker which helps to preserve fish and enhance taste, originating in Ghana, has been introduced into a number of other African countries. Similar utensils which are cheap, easily produced and increase the productivity of the poor, have been widely disseminated through TCDC.

- Several institutions of a regional and interregional character as well as national institutions with a regional reach have been established and have strengthened the infrastructure for TCDC. These include the regional centres for integrated rural development - CARDNE (Centre for Agrarian Reform and Rural Development in the Near East), CIRDAP (Centre on Integrated Rural Development for Asia and the Pacific), and CIRDAFRICA (Centre for Integrated Rural Development for Africa). Another regional institution which has relevance for transforming rural economies is the regional Training Centre for Small Hydro-power in China. Mexico's Institute of Electrical Research is an institution at the national level which helps other developing countries introduce highly innovative energy technologies - wind and solar energy and bio-mass micro-turbines. The Wild Life Institute of India attempts to develop methods which reconcile objectives of conservation with the development objectives of local communities and has made its experience available to other countries. There are a few other international institutions such as the International Institute of Rural Reconstruction based in the Philippines and the network of institutions under CGIAR (Consultative Group on International Agricultural Research) which focus on issues of poverty, food and nutrition. These can provide valuable technological support for TCDC initiatives.

- TCDC initiatives which are more directly connected to the areas of poverty alleviation and health include: ABREMEX, a programme of cooperation between Argentina, Brazil, Mexico and Spain for promoting transfer of technology and trade, including barter in the field of pharmaceuticals;

SOLIDARIAD the social programme which was initiated in Mexico and is contributing to the poverty alleviation programmes of other Latin American countries; the concept of the Grameen Bank which has found favour in many other countries; the Social Investment Fund of Honduras, SEDESOL of Nicaragua and similar programmes in El Salvador; the exchange of experience and knowledge in primary health care among countries in the Latin American region including harmonizing medical regulations, training, exchange of products and establishing a technological information network.

THE POTENTIAL ROLE OF TCDC

TCDC initiatives already taken and institutional networks and mechanisms already developed to promote it, provide a useful base on which a special effort of TCDC could be organized and strengthened in poverty alleviation and health. TCDC plays a unique role in social development, particularly in poverty alleviation and improving the well-being of the poor. As discussed earlier, poor and middle-income countries represent a gradation of development with examples of strategies, policies and programmes appropriate to countries at different levels in this gradation. This provides an effective framework for transmitting and exchanging experience vertically, from one level to another, and horizontally, within levels, which can be especially appropriate to the countries.

Table 5 attempts to assemble a sample of relevant initiatives undertaken in poverty alleviation and health related areas by the four groups of poorest countries. The table presents a matrix indicating the mix of countries in each group measured on the index of well-being. It identifies a few selected initiatives and policy approaches taken by countries in specific areas related to health and poverty. These include: (a) macro-economic policies; (b) poverty alleviation measures including income transfers, rural credit and employment generation; (c) the poverty-relevant health strategies and programmes; (d) education in relation to poverty and health; (e) water and sanitation programmes for the poor; (f) resource allocation for the health of the poor. The matrix has been able to include only a small illustrative sample of programmes under each category. It demonstrates, however, the rich potential for an exchange on problems which is critical to countries as they move upwards on the gradation of well-being. It should be noted that the coverage of the matrix as presented is limited to the four income groups of the poorest 40 countries. In any large scale effort at sharing relevant experiences on the poverty-health links, it would be necessary to include those countries that have graduated to higher levels such as Cuba, Costa Rica and others having a successful record in equity-oriented strategies in Latin America, as well as the South-East and East Asian countries indicated earlier in this paper.

THE CONTRIBUTION OF NGOs

One group of principal actors in TCDC are the NGOs in developing countries which have been able to design and implement large-scale programmes in poverty alleviation. Some of the NGOs have been listed in the matrix but these are selective. Much more information is needed to compile a fuller list. These organizations are repositories of a large body of appropriate knowledge and technology, particularly strategies and programmes which have adopted integrated

approaches to poverty alleviation. They are, therefore, well equipped to become effective partners in a wide- ranging programme of TCDC. International NGOs from industrialized countries have worked closely with those of developing countries and through their global operations can facilitate the flows of inter-regional and regional TCDC.

A TCDC PROGRAMME ON ISSUES OF POVERTY AND HEALTH - ACTION NEEDED

The scale and nature of the TCDC programme that is envisaged would require a sequence of actions:

- First, it is essential to assemble all the relevant information of the type included in the matrix and organize it into an information system which is readily available.

- Second, there is need for an in-depth critical evaluation of country experiences, programmes and initiatives in the relevant fields in order to develop the most effective elements of TCDC and guide and facilitate the process.

- Third, there must be a mechanism or mechanisms for the regular and systematic flow of TCDC through exchange of experts for selected projects and programmes, joint study missions between countries, joint training programmes on specific issues and problems, workshops among groups of countries having knowledge and experience for exchange on particular issues, regional and inter-regional workshops and seminars.

- Fourth, at the international level there should be an inter-agency programme whereby participating agencies collaborate with developing countries to design the programme and define each other's roles and participation.

- Fifth, the TCDC programme focused on poverty and health would have to build wherever possible, on existing TCDC activities and make maximum use of institutions and networks which are already actively engaged in TCDC.

- Sixth, the programme must facilitate the sharing of experience, technology and knowledge among NGOs in developing countries on a structured and regular basis. This should form an integral part of the TCDC effort.

- Seventh, inter-agency efforts should be re-oriented. One agency's approach to poverty alleviation may be through employment creation, another through food and nutrition, another through education and adult and functional literacy and another through health care. While each of these make a specific contribution, their full synergistic impact can seldom be realised unless they interact closely within a more integrated approach such as the basic minimum needs programmes of WHO or the more successful integrated rural development programmes.

- The task of assembling, sytematizing and making available the body of knowledge and expertise on poverty alleviation and improving the health of the poor as an effective programme of TCDC, requires a collaborative effort on a wide scale. This paper has attempted to show that the potential for TCDC is quite large and when properly organized can have a critical impact on enhancing the capacity of poor countries to alleviate poverty and improve the well-being of the poor. The special focus of the paper, however, has been on the rationale and need for integrating health improvements with poverty alleviation. In the area relating to the poverty-health link, WHO, which is experienced in promoting cooperation among developing countries would have to take the initiative and play the lead role in strengthening and facilitating TCDC both at regional as well as inter-regional levels.

Table 5 **PROGRAMMES AND POLICIES RELATING TO POVERTY ALLEVIATION AND HEALTH BY INCOME GROUPS OF POOREST COUNTRIES**

(1) Per Capita Income US $	(2) Scores for Indicators of well-being other than GNP Per Capita - Health, Education, Demography, Food & Nutrition, Social Infrastructure	(3) Macroeconomic Policies for Poverty Alleviation	(4) Poverty Alleviation Income Transfer, Rural Credit, Employment generation	(5) Health/Primary Health Care, Equity Oriented Strategies	(6) Education for Poverty Alleviation	(7) Water/Sanitation for Poor Communities	(8) Revenue Allocation for Poverty Alleviation & Health
Group I 80 - 210	4 countries at or below 35 3 countries above 35 and at or below 40 3 countries above 40 and at or below 45 1 country above 45	Compensatory programmes to protect social sectors. during structural adjustment - Madagascar among others	Integrated rural development programmes Five country programme in sub Saharan Africa for health. female literacy. income generation	Primary health care programmes specially those linked to female education and family planning (PHC/FE/FP) Six S movement PHC Programme - West Africa Programmes for control nature diseases	Strategies for enrolment in countries with higher than averages for group - Madagascar Adult literacy. female programmes Five country programme mention under 3	Rural water supply projects Inter-regional hand pump project - community water supply schemes	Compensatory programmes shown under 3 Community programmes for cost recovery and husbanding of resources for health - African Bamako initiative
Group II 220 - 340	3 countries at or below 35 2 countries above 40 and at or below 45 4 countries above 45 and at or below 50 1 country above 50	Similar programmes as given above	Integrated rural development Rural Credit/ Grameen Bank (Bangladesh) Nigerian peoples Bank Nutrition Programmes (Tamilnadu)	Similar programmes (as above)	Similar programmes (as above) Strategies for female enrolment - Bangladesh	Similar programmes (as above) Orangi pilot project Pakistan	Similar programmes (as above) Funds for poverty alleviation programmes as in 3 Linking credit to health Nigeria
Group III 370 - 460	1 country at or below 35 2 countries above 35 and at or below 40 3 countries above 40 and at or below 45 1 country above 45 and at or below 50 1 country above 50 and at or below 55 1 country above 60	Similar programmes as given above e.g. Nicaragua Ghana Strategies combining equity with growth e.g. China Social securlty systems	Integrated rural development programmes Employment guarantee schemes Micro-Enterprise development Rural-Urban links	PHC/FE/FP programmes Health and population strategies of countries with higher than average life expectancies for the group - China. Nicaragua	Enrolment strategies for secondary education of females e.g. Ghana, Kenya, Nicaragua, China, India	Similar programmes (as above)	Low cost equity-oriented health strategies - China Cost recovery schemes at community level Social investment funds Nicaragua

(1) Per Capita Income US $	(2) Scores for Indicators of well-being other than GNP Per Capita - Health, Education, Demography, Food & Nutrition, Social Infrastructure	(3) Macro-Economic Policies for Poverty Alleviation	(4) Poverty Alleviation Income Transfer, Rural Credit, Employment generation	(5) Health/Primary Health Care, Equity Oriented Strategies	(6) Education for Poverty Alleviation	(7) Water/Sanitation for Poor Communities	(8) Revenue Allocation for Poverty Alleviation & Health
Group IV 500 - 650	2 countries above 35 and at or below 40 1 country above 50 and at or below 55 5 countries above 55 and at or below 60	Similar compensatory programmes (as above) e.g. Mauritania Social Investment Funds e.g. Honduras Social Security Systems Policies combining equity with growth e.g. Sri Lanka Social sectors in a market-oriented economics e.g. Indonesia	Poverty alleviation programmes e.g. Food stamps, Janasaviya in Sri Lanka Integrated rural development programmes Micro-enterprise and small enterprise development KIK/KMPK Indonesia Rural-Urban links, rural credit - KUPDES - Indonesia Revolving loan funds, Thrift and Credit Society (Sanasa) Sri Lanka Foster father - Business Partner Linkages - Indonesia	PHC/FE/FP programmes Health Population strategies of countries with higher than average life expectancies for the group - Sri Lanka, Honduras Programmes which specifically link with poverty alleviation - Basic minimum needs programmes, Suvasaviya of Sri Lanka	Enrolment strategies for secondary education of females e.g. Sri Lanka, Egypt, Zimbabwe	Similar programmes (as above)	Low cost, equity-oriented health strategies Sri Lanka Social investment funds as in 2 Savings & thrift linked to health

ANNEX 1 METHODOLOGY FOR COMPUTATION OF TOTAL INDEX

INDICATORS	RANGE OF VALUES (WEIGHTS)
DAILY CALORY SUPPLY	63-90 (2) 91-100 (3) ABOVE 100 (5)
ADULT LITERACY RATE	0-36 (2) 37-52 (3) ABOVE 52 (5)
POPULATION GROWTH	0-2.4 (5) 2.5-2.9 (3) ABOVE 2.9 (2)
TOTAL FERTILITY RATE	0-5.5 (5) 5.6-6.5 (3) ABOVE 6.5 (2)
POPULATION PER PHYSICIAN	1900-5000 (5) 5001-10000 (3) ABOVE 10000 (2)
INFANT MORTALITY RATE	18-70 (5) 70.1-110 (3) ABOVE 110 (2)
POPULATION ACCESS TO HEALTH (%)	0-30 (2) 30.1-60 (3) ABOVE 60 (5)
POPULATION ACCESS TO SAFEWATER (%)	0-30 (2) 30.1-60 (3) ABOVE 60 (5)
POPULATION ACCESS TO SANITATION (%)	0-30 (2) 30.1-60 (3) ABOVE 60 (5)
ONE YEAR OLD IMMUNIZED (%)	0-30 (2) 30.1-60 (3) ABOVE 60 (5)
PREGNANT WOMEN RECEIVING PRENATAL CARE	0-39 (3) 40-72 (3) ABOVE 72 (5)
LOW BIRTH WEIGHT BABIES	0-10 (5) 11-15 (3) ABOVE 15 (2)
FEMALE % OF AGE GROUP ENROLLED IN EDUCATION (PRIMARY)	0-42 (2) 43-68 (3) ABOVE 68 (5)
FEMALE % OF AGE GROUP ENROLLED IN EDUCATION (SECONDARY)	0-5 (2) 6-13 (3) ABOVE 13 (5)

VARIABLES CONSIDERED FOR HEALTH INDEX

POPULATION ACCESS TO HEALTH (%)
POPULATION ACCESS TO SAFEWATER (%)
POPULATION ACCESS TO SANITATION (%)
POPULATION PER PHYSICIAN
PREGNANT WOMEN RECEIVING PRENATAL CARE (%)
ONE YEAR OLD IMMUNIZED (%)
INFANT MORTALITY RATE PER 1000 LIVE BIRTHS

VARIABLES CONSIDERED FOR DEMOGRAPHIC INDEX

POPULATION GROWTH RATE
TOTAL FERTILITY RATE

VARIABLES CONSIDERED FOR EDUCATION INDEX

ADULT LITERACY RATE
FEMALE % OF AGE GROUP ENROLLED IN EDUCATION (PRIMARY)
FEMALE % OF AGE GROUP ENROLLED IN EDUCATION (SECONDARY)

VARIABLES CONSIDERED FOR NUTRITION INDEX

DAILY CALORY SUPPLY
LOW BIRTH WEIGHT BABIES PER 1000 LIVE BIRTHS