POVERTY TRENDS IN THE 1990s & POVERTY REDUCTION STRATEGY FOR PAKISTAN

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This paper tries to draw trends of poverty in the country over the decade of 90s and highlights the salient features of the strategy being followed in the country for the purpose of its reduction. The paper is divided into three sections. Section I gives the theoretical background of poverty, while Section II discusses the same in the context of Pakistan: explaining the methodology being followed for the estimation of official poverty line, along with the calculation of poverty indices and the regional as well as overall poverty trends in the country over the decade of 90s. In this respect, HIES/PIHS 992-93, 93-94, 96-97 and 98-99 data series has been utilized. The reasons for the changing trend of poverty over this period are also highlighted. Section III explains the framework and the strategy being followed by the government for poverty reduction in Pakistan.

Section I

What is Poverty?

One can define poverty in various ways but the core concept remains the same: deprivation and dichotomy. Deprivation implies the lack of well being or welfare, while dichotomy implies the division of the population into two groups, those who 'have' and those who 'have not'. Thus, the lack of basic health services, education facilities, access to safe drinking water and elementary sanitation, along with the women and child specific deprivations constitutes what is called 'poverty'.

Poverty can be absolute or relative in nature. One can be poor due to simply the lack of basic necessities or one can be poor as compared to the other members of the society, even though one is able to meet the basic needs. The absolute poverty line is sketched at a specific point in welfare level distribution. Thus, it allows the comparisons over time. The relative poverty line is determined from a percentage cut-off point in the welfare distribution e.g. income or consumption level below which 'x' percent of the population is located. This approach is simple and transparent, but it is not very useful if one wants to monitor poverty over time since there is always a bottom 'x' percent of the population even if the living standard has risen over time and it is quite arbitrary. This paper is going to concentrate on the absolute measures of poverty.

Whenever poverty is discussed, two of its features are highlighted: the categorization of each household as poor or non-poor at the micro level, and the aggregate characterization of the society at the macro level. The first feature is highlighted through the use of 'poverty line' as a tool, while the second is highlighted through estimation of different poverty measures such as the head-count index, poverty gap, the poverty severity, and the human poverty index. The first three represent the income deprivation of poverty while the last one gives a human face to poverty. Even though poverty should

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be taken as a 'multi-faceted phenomenon', this paper is going to concentrate on the income face of poverty only.

Measuring Poverty

In order to combat poverty, extensive knowledge of the magnitude and direction of its growth along with its nature is a preliminary condition. This can only be done through the identification of the poor i.e. those who are deprived of the welfare. This justifies the measurement of poverty.

Steps for the Measurement of Poverty

Following are the three steps that need to be followed for the measurement of poverty (Ravallion 1998)

1. Defining an indicator for welfare
2. Identification of data set and making it usable
3. Establishing a poverty line by setting up a minimum acceptable standard to separate the poor and the non-poor.
4. Estimation of poverty indices by generating a summary statistic to aggregate the information from the distribution of this welfare indicator and its position relative to minimum acceptable standards.

Defining an Indicator for Welfare

The two monetary measures of poverty are as follows:

1. Per Capita Income level of the household
2. Per Capita Consumption or Expenditure level of the households

In the developing countries, income as a measure of welfare is usually not recommendable because of the problem in defining it, as well as due to it being under reported along with extensive fluctuations over the period of one's lifetime. On the other hand, the consumption remains relatively stable. In case, the 'Per Capita Consumption or Expenditure level of the households' is chosen as a measure of welfare, the construction of an 'Expenditure Function' is required which gives the minimum level of expense or the resources required, to attain the set level of well being or to meet the given level of utility 'u' derived from the consumption of the vector of goods 'x', at prices 'p'. Thus, the construction of an 'Expenditure Function' is the first step in the measurement of poverty.

Identification of Data Set and Making it Usable

The data on poverty comes primarily from two sources at the country level:

- Service or administrative records
- Surveys

The service records are usually kept by different ministries. e.g. Ministry of Health, Ministry of Education, etc. Surveys are conducted by different agencies e.g. World Bank's Living Standard Measurement Survey (LSMS), and Core Welfare Indicator

Questionnaire (CWIQ), or the Household Integrated Economic Survey (HIES), Pakistan and Integrated Household Survey (PIHS).

The food cost of an individual varies within the same household depending on whether the individual is an infant, adolescent or adult. These factors are commonly taken into account by the use of an 'equivalence scale' which equalizes the income or expenditure for differences in needs and economies of scales in household consumption. For instance, in Pakistan, there are many suggested equivalence scales. One suggested by Jafri, (1995, 1999), and FBS (1984-85) is given as:

$AE = a_1X_1 + a_2X_2+a_3X_3 + a_4X_4$

Where:

AE	=	Adult Equivalent
a_1	=	1.00
a_2	=	0.85
a_3	=	0.75
a_4	=	0.45
X_1	=	Adult in household (Age >16 years)
X_2	=	Children between 10-16 years of age
X_3	=	Children between 6 to 10 years of age
X_4	=	Children below 6 years of age

Poverty Line Estimation

Poverty line is that level of income which is just enough to achieve the so-called minimum level of welfare or utility 'u'. Thus, extending eq (iv), given 'Ū' as the minimum level of welfare, and 'Z' as the minimum expense required to achieve it:

$Z = f^{-1} (\bar{U})$

where 'Z' is the poverty line by definition.

There are two main categories of the methods for the estimation of the poverty lines, namely:

1. Food Energy Intake (FEI) Method
2. Costs of Basic Needs (CBN) Method

No matter what method is used to estimate the poverty line, following four axioms are to be followed by an ideal poverty line:

1. The poverty line should be proportional to individual needs.
2. If two persons 'A' & 'B' have the same needs, facing the same prices, then the person 'A' should not have a higher poverty line than person 'B' because of its expensive tastes.
3. If person 'A' enjoys a higher standard of living than person 'B', then the real poverty line for person 'A' cannot be higher than that of person 'B'.
4. A person on the poverty line in time period 't', denoted by 'Zt' should have exactly the same standard of living as the person on the poverty line in time period 't', denoted by 'Zt'.

Through the 'FEI' method of 'Z' estimation, the level of consumption expenditure is estimated, which is enough to meet the minimum energy requirement through the consumption of food along with the non-food items. The non-food items are taken into consideration as well because the poor also consume some clothing and shelter, implying that at margin, these needs must be as valuable as the additional food.

As mentioned earlier, the principal of the 'Cost of Basic Needs' (CBN) approach of poverty estimation is to come up with different food baskets that yield the same specified caloric minimum and select the one with the minimum cost. The same line is raised by a certain factor to take into consideration the non-food items consumptions as well. The cost of the selected basket becomes the poverty line.

Estimation of Poverty Indices

There are a number of aggregate measures of poverty that can be computed. The most common measures of poverty are as follows:

a Head Count Index
b Poverty Gap Index
c Squared Poverty Gap Index
d FGT Index

These are described in detail as below:

Head Count Index. It measures the proportion of population that is poor. It is denoted by P_0. Formally, it is given by:

$$Po = 1/N * [\Sigma I (yi \leq z)] = Np / N$$

Where:

N = Total Population

Z = Poverty Line

I (…) = Indicator value that takes the value of 1 if the bracketed expression is true i.e. household income is less than the poverty line, otherwise 0

The Head Count Index is very simple to calculate and is easily understood. But, it has two main drawbacks:

1. It does not take the intensity of poverty into account.
2. It does not indicate how poor the poor are and hence does not change if the people below the poverty line become poorer. Hence, it violates the monotonicity axiom.

Poverty Gap Index. It gives the extent to which individuals fall below the poverty line as a percentage of the poverty line. The Poverty Gap Index is denoted by P_1. Formally, it is given by:

$$P_1 = 1/N [\{\Sigma \{(z-y_i)* I (y_i \leq z)\} / z]$$

Where:

N =Total Population

Z=Poverty Line

I (….) =Indicator value that takes the value of 1 if the bracketed expression is true i.e. household income is less than the poverty line, otherwise 0.

This gives a good measure of the depth of poverty. However, poverty gap may not convincingly capture the differences in the severity of poverty. The poverty gap will be unaffected by the transfer of income from a poor person to a poorer person. It gives equal weights to the poverty deficit of the poor and therefore, is insensitive to the distribution of living standards among the poor, thus violating the transfer axiom.

Squared Poverty Gap Index. It is the weighted sum of the poverty gaps (as a proportion of poverty lines), where the weights are the proportionate poverty gaps themselves. Hence, implicitly, it gives more weight to observations that fall well below the poverty line. The Squared Poverty Gap Index is denoted by P2. Formally, it is given by:

$$P^2 = 1/N \, [\{\Sigma \, \{(z-yi)^* \, I(yi \leq z)\} / z]^2$$

Where:

N =Total Population

Z =Poverty Line

I (…) =Indicator value that takes the value of 1 if the bracketed expression is true i.e. household income is less than the poverty line, otherwise 0.

This measure is not easy to interpret and hence is not used very widely.

FGT Index. Foster, Greer and Thorbecke (1984) introduced the class of poverty measures that not only reflect the severity of poverty but also satisfy the axiom of decomposability additively. The FGT Index is denoted by $P_\propto$. Formally, it is given by:

$$P_\propto = 1/N \, [\, \{\Sigma\{(z-yi)^* \, I(yi \leq z)\} / z]^\propto$$

Where:

N =Total Population

Z =Poverty Line

I (…) =Indicator value that takes the value of 1 if the bracketed expression is true i.e. household income is less than the poverty line, otherwise 0

In case:

$\propto$=0, FGT=P_o

$\propto$=1, FGT=P_1

$\propto$=2, FGT=P_2

Section II

Estimated Poverty Line and Poverty Measures for Pakistan (2000-2001)

Data Source

Household Integrated Economic Survey (HIES) 2000-2001, Round-IV, provincial data.

Poverty Line

The national poverty line on the basis of 2350 calories per adult equivalent per day for the year 2001-2002 is estimated to be Rs. 748.565344/- per capita per month at the prices of 2001-2002.

Poverty Measures

Poverty Indices	National
Head Count	32.13
Poverty Gap	6.84
Severity of Poverty	2.04

** The overall Pakistan poverty indices are based upon the national poverty line of Rs. 748.565344 per capita per month.

Methodology of Poverty Line Estimation

Given an adequate level of energy intake 'K', it can be easily stated that:

$K = f(y)$ (i)

$y = f^{-1}(K)$ (ii)

Since:

$y = p * q$ (iii)

This implies:

$p * q = f^{-1}(K)$ (iv)

Thus, extending eq (iv) further, given 'K min' as the minimum level of adequate energy requirement, and 'Z' as the minimum expense required to achieve it:

$Z = f^{-1}(K \text{ min})$ (v)

where 'Z' is the poverty line by definition.

The functional form used for the estimation of the national poverty line is:

$\ln Z = \propto + \beta * K \text{ min}$ (iv)

Where:

Z = Total per adult equivalent monthly Expenditure

K min = Total per adult equivalent minimum monthly Calorie Requirement

Assumptions

- There exists specifically defined amount of calories that is considered essential. Here, this per adult equivalent minimum calorie requirement (K min) is 70500 calories per month.
- In case the minimum calorie requirement is achieved, then implicitly, the non-food essential items are also achieved.
- Same goods basket is consumed in all the provinces.
- The first three per adult equivalent consumption expenditure quintiles are used so that the consumption pattern of the rich does not affect the determination of the poverty line.

Poverty Trends in the 90s in Pakistan

From the start of the decade, in 1992-93, poverty increased from 24.9 percent to 27.7 percent in 1993-94. It reduced in 1996-97 and was brought down to 24.5 percent. But this decline was not kept for long and in 1998-99, poverty jumped to 30.6 percent. Again, poverty increased to the level of 32.1 percent in 2000-2001. This was a marked increase in poverty but the rate of change declined. This is further explained by the following tables 1 and 2 and figures 1 and 2:

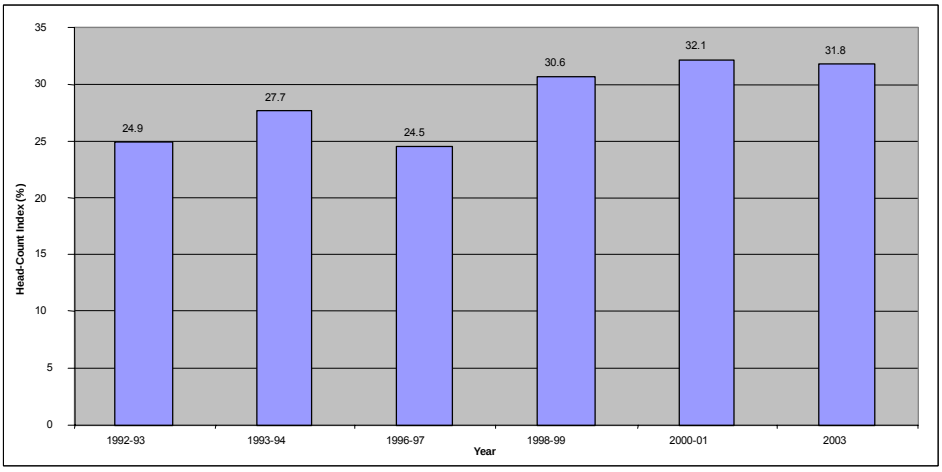
Table 1: Head Count Index in urban and rural areas of Pakistan.

Head Count	1992-93	1993-94	1996-97	1998-99	2000-01*	2003**
Pakistan	24.9	27.7	24.5	30.6	32.1	31.8
Urban	19.76	15.15	14.83	20.91	-	-
Rural	27.03	32.99	28.83	34.67	-	-

* Based on official poverty line of Rs. 748.565344/- per capita per month.

** Based on the post enumeration survey of HIES 2000-2001, conducted in 2003. (Only 5% of the original sample.)

Figure 1: Head Count Index.

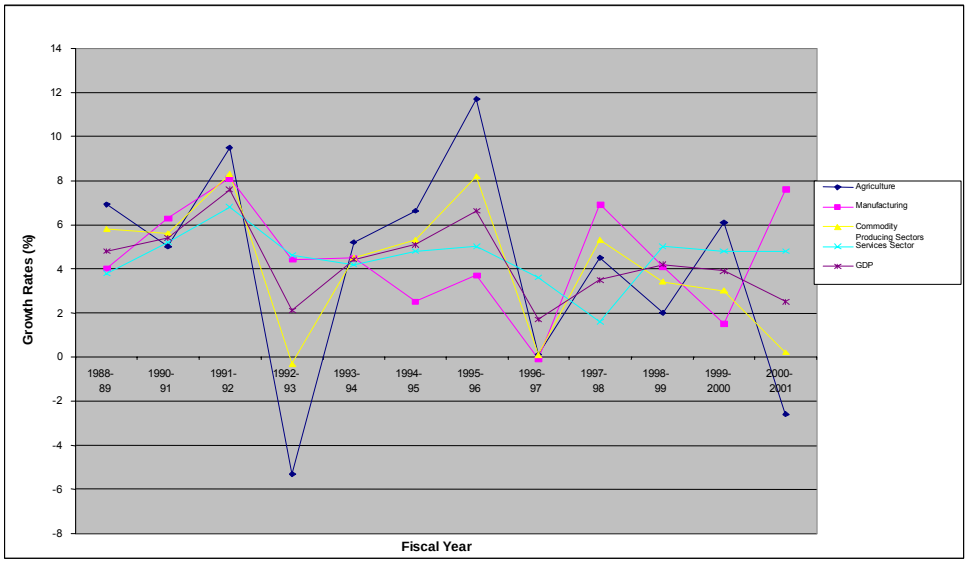


Source: Planning & Development Division, GoP.

Table 2: Economic Growth in the '90s in Pakistan.

Year	1988-89	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-2001
Agriculture	6.9	5	9.5	-5.3	5.2	6.6	11.7	0.1	4.5	2	6.1	-2.6
Manufacturing	4	6.3	8.1	4.4	4.5	2.5	3.7	-0.1	6.9	4.1	1.5	7.6
Commodity Producing Sectors	5.8	5.6	8.3	-0.3	4.5	5.3	8.2	0.1	5.3	3.4	3	0.2
Services Sector	3.8	5.2	6.8	4.6	4.2	4.8	5	3.6	1.6	5	4.8	4.8
GDP	4.8	5.4	7.6	2.1	4.4	5.1	6.6	1.7	3.5	4.2	3.9	2.5

Figure 2: Average annual growth rates (%).



Relationship between Poverty and Growth in Pakistan

The change in poverty over the period of time can be attributed to the change in two factors. One is the economic growth relating to the change in the mean income, and the other is the income inequality relating to the change in the inequality. The economic growth always has a positive impact on the poverty reduction, while on the other hand, inequality growth has a negative impact on poverty reduction. In case poverty is more sensitive to the growth changes, then the maximization of economic growth can become a major tool to reduce poverty. On the other hand, if poverty is more sensitive to the changes in the inequality, then the policies that are pro-poor, and thus reduce inequality, should be adopted for rapid reduction in poverty. Thus, we can safely say that the positive impact of GDP growth on poverty is counterchecked by the negative impact of income inequality. This impact of income inequality may and may not completely wash out the positive impact of economic growth.

In case of Pakistan, it seems that poverty is more sensitive to the inequality. This explains why even with the increase in economic growth rate poverty has been on the rise and with the decrease in the economic growth rate poverty has also fallen. Consider the Table 3 and Figure 3. The two figures show that with an increase in the GDP growth

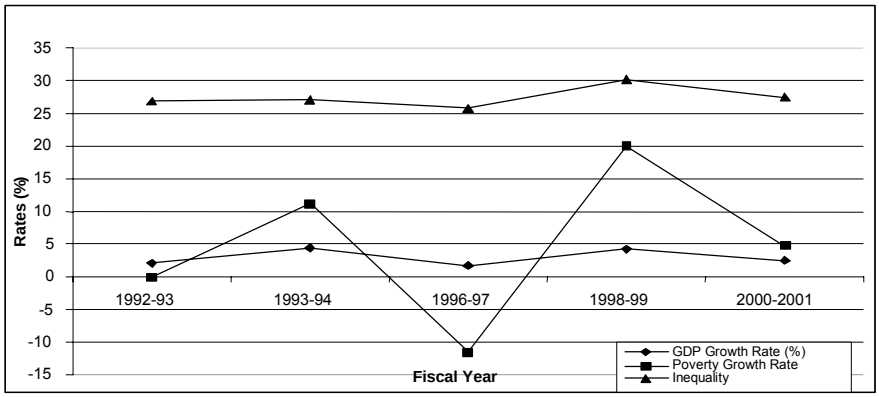
rate, the average nominal income increases in the economy which has appositive impact on poverty reduction but this positive impact is washed out due to the negative impact of worsening income inequality and vice versa.

Table3: Historic changes in growth and poverty in Pakistan.

Year	1992-93	1993-94	1996-97	1998-99	2000-2001
Economic Growth					
Agriculture	-5.3	5.2	0.1	2.0	-2.6
Manufacturing	4.4	4.5	-0.1	4.1	7.6
Commodity					
Producing Sectors	-0.3	4.5	0.1	3.4	0.2
Services Sector	4.6	4.2	3.6	5.0	4.8
GDP	2.1	4.4	1.7	4.2	2.5
Poverty					
Head Count					
Growth Rate	-	11.24	-11.55	19.93	4.90
Inequality	26.85	27.09	25.85	30.19	27.43

Source: Economic Survey 2000-2001, FBS.

Figure 3: Relationship between poverty and growth.



Section III

Poverty is lack of ability to access the essential physical and social assets. The poverty reduction strategy is the creation of conditions in which the poor are either given, or enabled to acquire, the assets and enabling environment to get returns from those assets.

The Poverty Reduction Strategy summarizes country's strategy for reducing poverty. Some of its salient features are:

- It is a country-owned document.
- It is developed through a participatory process.
- It is a process of focusing economic reforms towards poverty reduction and human development through consultative dialogue.
- It is based on comprehensive understanding of poverty and its determinants.
- It identifies public actions that have the greatest impact on reducing poverty.
- It uses indicators that are set and monitored through a participatory process.

Poverty reduction framework provides that poor should be empowered by:

- food security
- access to basic education, primary health, nutrition, water and sanitation services
- right to sustain themselves by their labor and be reasonably rewarded
- equal opportunities for income, employment and wages
- protection from shocks
- freedom of information
- freedom of participation

Pakistan has witnessed a prolonged and sustained period of economic growth with economy growing at an annual average rate of about 6 percent in the past three decades (fastest in South Asia). But this economic growth has failed to show its impact on the poverty levels prevailing in the country substantially. The constant rise in the income inequality accompanied by the ever rising number of the poor as well as some other factors has led to the slowing down of the growth in the '90s.

Several areas for policy reforms emerge from the examination of the causes of current trends of poverty and human deprivation, and suggest that a holistic approach is needed to address the various dimensions of poverty.

This has led to the formulation of a poverty reduction strategy by the government of Pakistan. This strategy aims to broaden and deepen the development process in ways that enlarge the basis of achieving high rate of economic growth with a combination of mutually reinforcing factors. These include a high rate of economic growth, which have translated directly or indirectly into enlarging the employment opportunities for the poor and their disposal incomes and strong commitment to investments in physical and social assets creation for the poor, especially health and education, and a system of social protection.

The poverty reduction strategy is 'three pronged' and is based upon the following:

1. Pro poor, sustainable economic growth
2. Fiscal and social assets creation for the poor
3. Safety net mechanism to protect poor from shocks

This strategy revolves around five activities, which are to be implemented in a balanced manner. Fragmented implementations are not allowed. These activities are:

1. Economic reforms
2. Physical asset creation for the poor
3. Social asset creation for the poor
4. Social safety nets
5. Governance

These are the collective goals that PRS seeks i.e. equitable income growth and complementary social development.

Economic reforms as a package are necessary for rapid economic growth. Economic growth is a necessary (but not sufficient) condition for poverty reduction. Expansion of domestic savings (including tax reforms) is needed to improve economic self-reliance. The government is introducing the new economy by expansion of domestic Information Technology and scientific capacity. Private sector development as a package consisting of:

a) Creation of enabling conditions for private investment
b) Privatization
c) Complementary public sector investment in social and physical infrastructure

Public expenditure is to be directed towards production of public goods – education, health, rule of law, and lower transaction cost for dealing with government.

Programs for land allocation, credit, *Zakat* and *Ushr* for capital formulation will be used to create physical assets for the poor. A minimum level of physical capital accumulation is required to enhance the income-earning capacities of the poor. The government is to perform the following steps:

- expand the physical asset base of the poor by distribution of state land (~3.0 m acres)
- creating access to micro-credit to acquire assets like livestock, fishing boat, a shop, and other income producing assets
- complementary human development programs to enable optimum returns from the physical assets
- energy and water management policies to ensure that the environment (land, forests, water, air) is not mined

Creation of social assets by ensuring cost-effective provision (public or private) of basic needs of the poor i.e. access to education, health, nutrition, water supply and sanitation is also the strategy adopted by the government. This is for human and social capital formation for the poor through a participatory process involving the poor and civil society. The government has decided to take the following measures in this regard:

- allocation of additional resources for human capital formation
- devolution/Decentralization to significantly improve delivery efficiency of social services – education, health, population, social protection, and water supply
- adult literacy program with focus on female literacy (up to secondary levels)
- using public information strategically to empower consumers of health care and enable people to be better providers of their own health
- engaging the private sector and civil society to participate in meeting societal health and education goals

For the chronic or transitionally vulnerable groups, the strategy to create social safety nets will provide adequate supplementary transfers to ensure satisfaction of basic needs i.e. food, shelter and social protection.

- significant expansion of public sector transfer programs (from Rs. 13.0 billion to Rs. 23.5 billion by 2004)
- incentives to expand private sector transfers via charity (from Rs. 139 billion to Rs. 175 billion by 2004)
- food Support Programs to compensate the poor for reduction in wheat subsidy
- revamping of *Zakat* and *Ushr* system to create a Social Protection Program

On the governance front, the government is to improve efficiency in the public and corporate sectors to provide rule of law, and improve the efficiency of service delivery. This is to be done through:

- decentralization / Devolution of power and responsibilities
- private sector development (Enabling conditions for private investments)
- civil service reforms to improve public sector efficiency (education; right sizing; merit based induction / promotion)
- expand capacity of judicial system – via IT – to provide speedy justice

It is expected that the government shall be able to reduce poverty substantially by adopting the above strategy and the trickle down effect of the economic growth to the general masses shall become possible.

Poverty Reduction - Goals and Instruments

Sr. No.	Goals	Instruments
1	Significant economic growth	* Open economy * Education
2	Rule of law	* Civil service reform * Devolution * Judicial reform
3	* Food poverty * Basic needs * Opportunity	* Agriculture * rural * Education * Health/Nutrition * SME
4	* Malnourishment of children under 5 * Health	* Community & NGOs participation in targetted food distribution programs * Coverage of pre-natal care, immunization, safe
5	Adult literacy (functional)	* Education via radio/t.v * Community voluntary
6	Scientific capability	* Tertiary education * Curriculum reform * Industry/academic/government
7	Human rights	* Justice * Security * Clean air/Water

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