IJCBM International Journal of Commerce and Business Management
Volume **6** | Issue 1 | April, 2013 | 96-102
RESEARCH PAPER

Environmental poverty and human development : The case of South Asian countries

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Received : *04.02.2013;* **Revised :** *03.03.2013;* **Accepted :** *28.03.2013*

ABSTRACT

The people in the world today are moving towards "economic growth" by engaged in carbon-intensive activities and are becoming the primary source of emitting pollutions into the environment. This fast run towards economic growth is associated with carbon dioxide emissions particularly and deterioration of key environmental indicators such as soil, water and air quality and forest cover. These deteriorations have adverse repercussions for human development especially for the millions of people, who depend directly on natural resources of their livelihoods. Human development represents the process of expanding the freedoms and capabilities to lead a 'good life' and the environmental threats, that result from the economic activities impeding the freedoms and capabilities of the people in general and in developing countries in particular and driving them towards the vicious circle of multidimensional poverty. Land degradation, air and water pollution, deforestation, decreasing land productivity and desertification are all affecting the freedoms and capabilities of the people living in medium and low human development countries. Consequently, the physical and social environments, knowledge, assets, production and consumption patterns are adversely affected leading to low achievements in human development. This paper particularly focuses on this theme and aims at an analysis of symbiosis between environmental degradation and level of human development. Women and children are the worst affected by the environmental threats. At this juncture, the practical ways to redress these environmental imbalances, risks and threats and forming the strategies for tackling environmental problems in such a way that expand people's choices, enrich capabilities, promote human development and protect our environment, are necessary for opening doors to a better future.

KEY WORDS : Human development, Environment, Resources deprivation, Multidimensional, Poverty, Good life

How to cite this paper : Nagaraja, B. (2013). Environmental poverty and human development : The case of South Asian countries. *Internat. J. Com. & Bus. Manage*, **6**(1) : 96-102.

In recent years, economic progress, guided by "capability approach", is defined as the "expansion of people's freedoms to live long, healthy and creative lives to achieve other goals they have reason to value" and to engage actively in shaping development equally and sustainably on our shared planet, earth. As a result, many economists argued that the objectives of development are to sustain freedoms and capabilities that allow people to lead meaningful lives. If we consider economic growth as synonymous with consumption, the experiences of the developed high income countries indicate that the growth in consumption among the best off people in the world is putting unprecedented pressure on the environment, from which the resources for the consumption are drawn. It is today recognized that many problems of resource depletion and environmental stress are arising due to heavy consumption of environmental resources and as a result the climate is changing, stocks of greenhouse gases are trapping the heat in the atmosphere and causing the average global temperatures to increase by more than 5^0 C (Human Development Report, 2011). These environmental threats are hampering the efforts to deliver the millennium development promises. The recent research on environmental resources deprivation tells us that we are overloading our ecological interdependence. In brief, we are moving from a "full world" into an "empty world" and out generation is

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running up an unsustainable ecological debt that our future generations would inherit and are drawing down the stock of environmental capital of our children. If we continue the present pattern of consumption and economic growth, it is sure that the doors to a better future would be closed for most of the world's people.

Of late, it is also recognized that the environmental threats have a direct bearing on the capabilities and freedoms of the people and ultimately impacting the capabilities and freedoms of poorest 40 per cent of the world's population in particular to a future of diminished opportunity. It is in this context, Amartya Sen Commented that " a foul environment in which future generations are denied the presence of fresh air…… will remain foul even if future generations are so very rich"

Keeping all these environmental risks, threats, deprivation and impacts in view, the recent research has been oriented towards a critical examination of correlation between the deprivations of environmental resources and the levels of human development in the world. Particularly, the Human Development Reports 2007/08,2010 and 2011 have laid their focus on this emerging area of research on human development. The three dimensions of human development – a long and healthy life (longevity), Knowledge (education) and a decent standard of living (income) are all affected by the environmental threats and impact is found to be more on developing world.

METHODOLOGY

This paper particularly examines the impact of environmental resource deprivation on human development with particular reference to South Asian countries (excluding Iran). The analysis was particularly carried out for 8 of the 9 South Asian countries, with a purposive exclusion of Iran, which is categorized as high human development country. Hence, the present analysis is confined only to medium human development countries (Srilanka, Maldives, India and Bhutan) and low human development countries (Pakistan, Bangladesh, Nepal and Afghanistan). Since it was identified that South Asia is the home to the largest number of people living in multidimensional poverty, the South Asian countries were purposively selected for the present analysis. Relying exclusively on the data published by the UNDP on human development, an attempt was made to correlate the quality and deprivation of environmental resources and the levels of human development in the selected South Asian countries. The specific objectives of the present analysis are to present the improvements in the human development in the South Asian countries between 2010 and 2011, to bring out the nature of multi-dimensional poverty in South Asian countries, to analyze the impact of environmental threats on human development in South Asian countries and to focus on the perceptions of South Asian people about the well-being and environment.

ANALYSIS AND DISCUSSION

As said earlier, of the total 9 South Asian countries, 8 were considered for the analysis, which are categorized under medium and low human development countries in the Human Development Reports-2010 and 2011.Since the concept of "Multi-dimensional poverty" was introduced in the Human Development Report -2010, considering the human development index trends for 2010 and 2011, an attempt was made to compare the trends in these countries. In recent years, human development is considered as a "participatory and dynamic process" and brings together the production and distribution of commodities and the expansion and use of human capabilities. The production, distribution and consumption of commodities are dependent on environmental sustainability and the quality and access to the environmental resources. If the deprivation of environmental resources takes place, directly and indirectly affects the level of human development on the one side and the capabilities and freedoms of the people on the other side in general and of the poor dependent on environmental resources in particular. Hence, the details of trends in human development are presented in Table 1.

In Human Development Report – 2010, the human development ranks and values were calculated for 169 countries and in Human Development Report -2011, these were estimated for 187 countries. As more number of countries (18) was added in 2011, the HDI ranks of the countries showed different results. Hence, the HDI values are presented in Table 1. The HDI values estimated in 2010 and 2011 reports revealed that the state of human development has improved in all the South Asian countries. A close perusal of the data indicated that this improvement was only marginal, except in Maldives and Sri Lanka. The details of the values for GDI—HDI ranks are also presented to show the efforts of these countries to translate the improvements in their respective national incomes into the improvement of human development. Viewed from this consideration, Sri Lanka, Bangladesh and Nepal have the best records, compared to India, Maldives, Pakistan, Bhutan and Afghanistan.

Of course, "equity" approach was also adopted by HDR -2010 and 2011 that goes beyond incomes. Estimations were made to assess the inequality-adjusted HDI, which discounts human development achievements by the inequality in each dimension. The results showed that among South Asian countries, the HDI falls further below the HDI as inequality rises. The estimated overall loss accounts highest at 34.3 per cent for Nepal and 31.4 per cent for Pakistan, which is above the average overall loss for all South Asian countries (28.4 %) and for the world (23.0 %). The percentage of overall loss was found high at 28.3 per cent for India, 27.4 per cent for

Table 1 : Trends in human development among South Asian countries: 2010 and 2011

Level of human development	South Asian countries	HDI rank		HDI value		Per capita GDI rank -- HDI rank	
		2010	2011	2010	2011	2010	2011
Medium	Sri Lanka	91	97	0.658	0.691	10	12
	Maldives	107	109	0.602	0.661	-11	-3
	India	119	134	0.519	0.547	-6	-10
	Bhutan	--	141	--	0.522	--	-36
Low	Pakistan	125	145	0.490	0.504	-4	-7
	Bangladesh	129	146	0.469	0.500	12	11
	Nepal	133	157	0.428	0.458	12	8
	Afghanistan	155	172	0.349	0.398	-12	-13
South Asia		--	--	0.516	0.548	--	--
World		--	--	0.624	0.682	--	--

Source: UNDP: Human Development Reports – 2010 and 2011.

Bangladesh and 25.2 per cent for Maldives. This loss was found lowest at 15.2 per cent for Sri Lanka among all the South Asian countries.

Environmental sustainability in South Asian countries:

One of the focus areas of Human Development Report, 2011 was highlighting the links between human development and environmental sustainability. The report observed that possibilities open to people of tomorrow to achieve a good standard of living should not differ from those open today. Considering the definition of "Human development" it was recognized that many ends are necessary for a good life, which go beyond the satisfaction of essential needs and also very different from living standards and consumption. We have to respect and value all the functions of the environment, to have a "good life". The present generation must pay attention to the functions of the environment and consume the environmental resources in such a way that would not restrict the freedom of future generations. Hence, it can be concluded that sustainability is similar to distributive justice. So, environmental sustainability is highly essential for the sustainable progress of the people and improvements in the development of human beings. Keeping this correlation in view, Table 2 is presented to explain the environmental sustainability in South Asian countries.

As shown in Table 2, five indicators were used to measure the environmental sustainability in South Asian countries. The ecological foot print which measures the amount of biologically productive land and sea area expressed in hectares was found highest in Nepal and Sri Lanka. The environmental performance index, which measures the environmental public health and eco-system vitality, was found highest in Nepal, Bhutan, Maldives and Sri Lanka. In India, the value of EPI (48.3) was less than the average value of EPI for all the countries in the world (54.4). Among the South Asian countries, Bangladesh has the lowest EPI value (44.0). The other indicator, carbon dioxide emissions per capita was found highest in Maldives, India and Bhutan. For the

Table 2 : Environmental sustainability in South Asian countries

South Asian countries	HDI values (2011)	Measures of environmental sustainability		CO_2 emissions per capita (tones) (2008)	Green house gas emissions per capita (tones) (2005)	National resource depletion (% of Total GNI) (2009)
		Ecological foot print (per capita 2007)	Environmental performance index (0-100) (2010)			
Sri Lanka	0.691	1.2	63.7	0.6	0.6	0.5
Maldives	0.661	--	65.9	3.0	NA	NA
India	0.547	0.9	48.3	1.5	0.7	4.2
Bhutan	0.522	--	68.0	1.1	--	5.3
Pakistan	0.504	0.8	48.0	0.9	1.1	3.1
Bangladesh	0.500	0.6	44.0	0.3	0.7	2.6
Nepal	0.458	3.6	68.2	0.1	1.0	4.2
Afghanistan	0.398	0.6	--	0.0	--	--
South Asia	0.548	1.3	45.7	1.5	0.8	6.2
World	0.682	2.4	54.4	4.4	1.7	2.4

Source: UNDP (2011) Human Development Report – 2011, p.149.

countries like Nepal, Bangladesh, Sri Lanka and Pakistan, the carbon dioxide emissions per capita was found lowest among the South Asian countries.

The Human Development Report, 2011 observed that carbon dioxide emission per capita was much greater in very high human development countries because of more energy-intensive activities. The report also estimated that the average person in a very high human development countries accounted for more than four times the carbon dioxide emissions of a person in low and medium countries (Human Development Report, 2011).

Similarly the economic activities, which are more energy-intensive, have environmental impact on climate. Today an average person in a very high human development country accounts for more than twice the emissions of green house gases, as a person in a low and medium country. The three dimensions of human development— heath, knowledge and income – interact very differently with emissions of green house gases per capita. The results is climate change and it is related to the speed of the development process which also represents the environmental costs to the economy and also results in less gains in human development values.

Table 2 also presents the levels of green house gas emissions which lead to global warming and also to the depletion of national resources. The data reveals that in South Asian countries, though the green house gas emissions per capita (0.8) is lowest compared to the average per capita emissions in the world (1.7 tons), it was found highest in Pakistan, Nepal. However, it was lowest in Sri Lanka, India and Bangladesh.

The National Resource Depletion represents energy, mineral and forest depletion in monetary terms which expressed as the percentage of the gross national income and was found high in South Asian countries (6.2 %) and was more than the average percentage of the world (2.4 %). Among the South Asian countries, it was found highest in Bhutan (5.3 %), Nepal (4.2 %) and India (4.2 %) and lowest in Sri Lanka (0.5 %).

Environmental poverty and effects on human development:

An analysis of environmental trends over the recent decade leads us to conclude that there is deterioration in several fronts. Land is degraded due to soil erosion and reduced fertility. Land productivity has been declining resulting into loss of yields. Green sinks are shrinking. Desertification is threatening the dry lands. The air and water are getting polluted. The world food prices are boosting due to adverse environmental factors and the people involved in agriculture, fishing, forestry, hunting and gathering are facing largest risks. Particularly the women in poor countries dependent on subsistence farming and water collection are facing greater adverse consequences of environmental degradation. To be brief, the net biophysical impacts of climate change on irrigated and rain fed crops by 2050 would likely be negative and worst in low human development countries.

All these adverse effects of environmental degradation results into environmental poverty and impact the level of human development. The Human Development Report, 2010 introduced a new measurement of poverty—Multi-dimensional Poverty Index and head count ratio, which measure serious deficits in health, education and living standards and look at both the number of deprived people and the intensity of their deprivations. The Human Development Report, 2011 observed that these absolute deprivations are the major violations of human rights. If these deprivations are let to increase, certainly decreases the higher order capabilities of the people and arrests the expansion of people's choices and impedes the advancement of human development. The data in Table 3 amply provide information on multi-dimensional poverty and the effects of environmental threats on human development.

The data in Table 3 explain the severity of multi-dimensional poverty in South Asian countries. The movement of MPI values from '0' to '1' denotes the increase in the severity of the deficits in health, education and standard of living. Along with the severity of multi-dimensional poverty, the data also indicate the pervasiveness of environmental deprivation among the multi-dimensionally poor which focuses on the lack of improved cooking fuel, drinking water and sanitation. Access to these environmental services ensures the creation of potential to expand the capabilities and thereby enlarges the people's choices and furthers human development.

In the case of South Asian countries, the population in multi-dimensional poverty (head count ratio) was found highest in Nepal (64.7 %), Bangladesh (57.8 %) and India (53.7 %). Almost 50 per cent of the people in Pakistan are prone to multi-dimensional poverty. It is low in Bhutan (27.2 %) and lowest in Sri Lanka (5.3 %) and Maldives (5.2 %). Accordingly the intensity of deprivation ranged from a highest of 54.0 per cent in the case of Nepal to the lowest of 35.6 per cent in the case of Maldives. The percentage of intensity shows a negative correlation with level of human development as it is found that the intensity is higher in low human development countries like Nepal, Pakistan and Bangladesh and high in medium development countries like Maldives and Sri Lanka

The Human Development Report, 2011 identified that environmental deprivations were most acute in South Asian countries as 97.0 per cent of the poor suffer at least one deficit and 18.0 per cent face all the three. Viewed from individual countries, deprivations are most widespread that 63.4 per cent of the multi-dimensionally poor in Nepal, 56.7 per cent of the poor in Bangladesh and 51.1 per cent in India lack access to modern cooking fuel. Similarly in these countries highest percentage of multi-dimensionally poor lack access to

Table 3: Multi-dimensional poverty in South Asian countries

South Asian countries	Multi-dimensional poverty index values	Population in multi-dimensional poverty (Head count) (%)	Intensity of deprivation (%)	Share of Multi-dimensional poor with deprivations in environmental services			Population below PPP $ 1.25 a day (%)
				Clean water (%)	Improved sanitation (%)	Modern fuels (%)	
Sri Lanka	0.021	5.3	38.7	3.0	2.6	5.3	7.0
Maldives	0.018	5.2	35.6	0.2	0.4	0.9	1.5
India	0.283	53.7	52.7	11.9	48.2	51.1	41.6
Bhutan	0.119	27.2	43.9	2.6	16.9	22.1	26.2
Pakistan	0.264	49.4	53.4	6.9	32.1	40.5	28.6
Bangladesh	0.292	57.8	50.4	2.5	48.2	56.7	49.6
Nepal	0.350	64.7	54.0	14.4	56.3	63.4	55.1
Afghanistan	NA	NA	NA	NA	NA	NA	NA

Source: UNDP (2011) Human Development Report, 2011, pp. 143-145

improved sanitation. However, deprivations in getting clean water are not so acute in South Asian countries, at it ranges from 14.4 per cent in Nepal and 11.9 per cent in India. In other countries, the deprivation in clean water was not found so acute. The data also reveal that income poverty was highest in Nepal followed by Bangladesh and India.

Impact of environmental poverty on well-being:

We can easily understand from the foregoing analysis that environmental deprivation impedes and damages capabilities especially those of poor and disadvantaged groups. These deprivations adversely affect health, education, livelihoods and other aspects of well-being. A study of WHO on global burden of disease underlines the importance of environmental factors. Particularly it was observed that 14 per cent of the disease burden has environmental causes in low human development countries. The adverse impact of environmental deprivation costs about, according to Human Development Report, 2011, 4 to 9 per cent of the GDP of the countries in the world, with long-term effects on income and education.

The data presented in Table 4 explain the effects of environmental threats on human development and well-being in South Asian counties

No doubt, the greenhouse gas emissions jeopardize the progress in human development. Besides, climate change affects temperatures, precipitation, sea level and results into natural disorders. It is increasing the likelihood of extreme weather events such as droughts, storms and floods. Though natural disasters affect everyone equally, it is observed that in recent years South Asian countries experienced the largest number of natural disasters, an average of almost six a year per country. The South Asian countries, which have low human development index values have experienced droughts and countries with medium human development were exposed to natural disasters. Particularly the South Asian countries have local immediate and poverty-related environmental problems. These environmental threats, threatens the health of the people in these countries.

The data presented in Table 4 amply indicate the above observations related to South Asian countries. In Afghanistan, Nepal, India, Bangladesh and Pakistan more than

Table 4: Impact of environmental poverty on human development in South Asian countries

South Asian countries	Population under age 5 suffering from		Population affected by natural disasters (Average annual per million people) (2001-10)	Deaths per million people due to			Population living on degraded land (%) (2010)
	Stunting (%) (2000-2009)	Wasting (%) (2000-2009)		Water pollution	Indoor air pollution	Outdoor air pollution	
Sri Lanka	17.3	21.1	22652	41	219	51	7.0
Maldives	31.9	25.7	522	0	0	0	0
India	47.9	43.5	2	405	435	107	9.6
Bhutan	37.5	12.0	0	467	311	--	0.1
Pakistan	41.5	31.3	18218	380	360	192	4.5
Bangladesh	43.2	41.3	47203	469	356	68	11.3
Nepal	49.3	38.8	9738	520	326	30	2.3
Afghanistan	59.3	32.9	9799	2499	2023	15	11.0
South Asia	46.8	29.6	36336	443	424	109	9.9
World	--	--	32575	--	--	145	10.1

Source: UNDP (2011) Human Development Report, 2011, pp.151-153

40 per cent of the children under age 5 are stunted. The population affected by natural disasters is high in Bangladesh, followed by Pakistan, Afghanistan and Nepal. Pollution is found to be a leading environmental threat in South Asian countries as deaths due to water, indoor and outdoor pollution are found high. Particularly, higher number of deaths are recoded in Afghanistan, Nepal, Bangladesh, India and Pakistan. More than 10 per cent of the people in Bangladesh (11.3 %) and Afghanistan (11.0 %) are lived on degraded land. 9.6 per cent of the people in India and 7.0 per cent of people in Sri Lanka are also found to be living on degraded lands.

To sum up, the South Asian countries are experiencing the adverse health impacts of indoor, outdoor and water pollution. The data also show that there exists a positive correlation between deaths due to environmental causes and multi-dimensional poverty among South Asian countries.

Perceptions about well-being:

The Human Development Report, 2011 made an attempt to record the perceptions of the people with regard to well-being and environment. Being influenced by the adverse health, education and living standard impacts of environmental causes, people must know that they are affecting the capabilities and impeding their freedom to lead a meaningful life. The feelings and opinions of the people of South Asian countries on these aspects are presented in Table 5.

The data in Table 5 indicate that less than 58 per cent of the people in South Asian countries are satisfied with their lives and 60 per cent of the people in Sri Lanka, 57 per cent of the people in Nepal, 52 per cent of the people in Afghanistan and 51 per cent of the people in Bangladesh are not satisfied with their lives. Majority of the people in Afghanistan, Pakistan and India did not accept that human cause global warming. On the contrary, majority of the people in Bangladesh, Nepal and Sri Lanka have accepted that it is the humans, who causes global warming. Though the perceptions on global warming vary among the people of South Asian countries, more than 70 per cent of the people have admitted that global warming is a serious environmental threat.

Though, the people know that their well-being is adversely impacted by environmental threats and risks, around less than 12 per cent of the people, (except Nepal) are only active in environmental groups and majority of the people (around 55 per cent) are not satisfied with the Government's to reduce emissions. Only less than 47 per cent of the people in these countries are satisfied with actions to preserve the environment. This proportion was found very low in Pakistan, Nepal, India and Afghanistan.

Conclusion:

The foregoing analysis limited to South Asian countries and the impacts of environmental threats suggest that in the coming years, the changing demographics, along with rising income certainly will exert a heavy pressure on natural resources and the environment. It is also sure that climate change would be the single factor that will make the future very different, which automatically impedes the continuing progress in human development and derails it. As a consequence, it was estimated that per capita consumption of cereals by2050, falls by a fifth, leaving 25 million additional children malnourished, with South Asia, the worst affected. All these experiences and estimations make it clear that environment, climate change and human development are the matters of cross country and intergenerational distributive justice, affecting billions of people. Hence, the challenge is to consider the policies and strategies that would be good for human development over time. Necessary policies must be designed to advance income and other objectives together

Table 5 : Perceptions of the people about well-being and environment

South Asian Countries	Well-being			Environment		
	Overall life satisfaction # (2006-10)	Humans cause global warming (% Yes) (2006-10)	Global warming threat is serious (%) (2006-10)	Active in environmental group (% Yes)	Satisfied with the Government to reduce emissions (% satisfied)	Satisfaction with actions to preserve the environment (% Satisfied)
Sri Lanka	4.0	56.5	76.3	10.0	40.1	61.7
Maldives	--	---	---	---	---	---
India	5.0	49.4	83.4	11.6	41.6	45.4
Bhutan	--	---	---	---	--	--
Pakistan	5.8	32.4	71.6	10.1	24.9	21.1
Bangladesh	4.9	66.7	92.1	11.9	45.2	47.3
Nepal	4.3	59.7	88.6	24.9	19.3	42.4
Afghanistan	4.8	31.2	75.6	12.2	14.2	45.5
South Asia	5.0	49.7	82.6	11.6	39.2	43.6
World	5.3	53.5	67.9	--	--	51.6

Note: # 0 = Least satisfied ; 10 = Most satisfied

Source: UNDP (2011) Human Development Report, 2011, pp.155-157.

for achieving improvements in human development that exceed those of the past and ensure that previously disadvantaged groups are included in future expansions of freedoms. Then only we can overcome the limits of carbon-intensive growth and human development becomes truly sustainable. Most importantly, investments that improve equity—in access to renewable energy, water and sanitation and reproductive health care are necessary to advance sustainability and human development simultaneously.

Notes:

Multidimensional poverty index (MPI) indicates multiple deprivations at the individual level in health, education and standard of living. It uses micro-data from household surveys and all the indicators needed to construct this measure come from the same survey. The MPI value is the product of two measures: the multidimensional head count ratio and the intensity of poverty. To identify the multidimensional poor, the deprivation scores for each house are summed to obtain the household deprivation (c). If 'c' is 3 or greater, that household (and everyone in it) is multidimensionally poor.

Ecological foot print (EFP): Amount of biologically productive land sea area (in hectares per person) that a country requires to produce the resources it consumes and to absorb the wastes it generates.

Environment performance index (EPI) comprises 25 performance indicators across 10 policy categories covering both environmental public health and ecosystem vitality

Greenhouse gas emissions (GHGE) : Emissions from methane, nitrous oxide and other greenhouse gases including hydroflorocarbons and sulfurhexaflooride, divided by mid year population(CO2 emissions are not included)

Natural resource depletion: Monetary expression of energy, mineral and forest depletion expressed as percentage of total Gross National Income.

Population living on degraded land: Percentage of population living on severely and very severely degraded land. Land degradation estimates consider biomass, soil health, water quality and biodiversity and range in severity.

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