Poverty, Environment and the Consultations with the Poor

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Abstract

The World Bank has recently published three volumes of a study "Consultations with the Poor." One of the objectives of the study has been to define poverty in the way that poor people themselves perceive it. The consultations, however, make only occasional reference to matters of environment. This is misleading. This paper argues that environmental degradation and poverty are bound tightly together. One reason why the environment was not given prominence in the consultations may lie in the very design of the study: environmental issues were excluded already at the outset. Moreover, many environmental problems can only be "estimated," and not "inferred," and perceptions may easily miss them.

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1. Natural resources, markets and the environment

A simple deduction will confirm that the ultimate source of all production and consumption in human society is natural resources. Raw materials, extracted through the exploitation of land, water and air, are combined to produce the final goods and services that enhance human wellbeing (Dasgupta, 1996, 1998). Technological know-how and skills add to efficiency in production and economise on the resources that are scarce.

Welfare, and the lack of welfare – poverty, is equated in economics with the "utility" (viz. satisfaction) that is derived from the goods and services produced in an economy. The production of more goods will result in greater wellbeing. The economic system, i.e. the context within which the production and exchange of goods take place, provides the relevant signals for the use of a particular resource: be it natural capital, man-made capital or human labour inputs. In a market economy these signals take the form of relative prices.

The functioning of a market may be characterised as an instantaneous auction process involving an infinite number of economic agents. It would be useless to indulge in an auction unless the participants are endowed with resources of one form or the other. A basic prerequisite for a market to function is thus the existence of property rights.

Property rights and markets are difficult or impossible to specify in many cases, particularly those that relate to natural resources. Raising a river-barrage upstream may cause severe water shortage downstream, resulting in hardships for local farmers. An excessive emission of greenhouse gases from the cities in the North may threaten densely populated coastal areas in the South with submersion. Over-fishing in the oceans of the world may leave inadequate fish stocks for future generations. Yet there are no markets for water, greenhouse gases or fishing rights. And where resources such as coral reefs, the atmosphere and biodiversity are concerned, it has simply been impractical to define or protect property rights.

If the property rights of natural resources are ill-defined and markets poorly developed, the use of natural resources will fail to correspond to their social scarcity costs (Pigou, 1920, discussed "externalities" associated with this particular difficulty). Resources will be treated as if they have no cost, or very little cost, and the market values of the goods produced will systematically overstate the extent of wellbeing. The overexploitation of nature will proceed uninterrupted.

The recent concern for the environment has revealed that this has indeed been the case. During the course of economic progress in the last century, the depletion and degradation of natural resources took place at an unprecedented rate. Industrialisation has been achieved at a cost formidable for nature: air, water and land. The soil has been degraded, deforestation and desertification have accelerated, the quality of water has deteriorated, the ozone layer has been depleted and there has been a considerable increase in the cost of pollution in the form of health hazards and deaths (see Human

Development Report 1998; World Development Report 1999/2000; and Global Environment Outlook 2000 for numerical estimates).

Hand in hand with these alarming ecological trends, poverty and inequality have increased considerably. *Billions of men, women and children go hungry each day and* are deprived of elementary amenities for their subsistence, all in a world where capital and technology have attained new heights. More than a third of the population in south Asia and sub-Saharan Africa are poor and live under miserable conditions. The increase in inequality during the last few decades has been appalling. Today the poorest 20 per cent of the world's population receive a meagre one per cent of the global income while the richest 20 per cent have over 86 per cent. Between 1960 and 1995 the ratio of income of the richest 20 per cent in the world to the poorest 20 per cent has increased from 30:1 to 82:1 (Human Development Report, 1998).

The fragility of the current global environment, coupled with the increase in population, inequality and the numbers of the poor, calls for urgent measures for development; development that is sustainable. The issue at hand is not to induce a further acceleration of the rate of production. It is rather to ensure that production and distribution activities occur in patterns that guarantee the wellbeing of the present generation and, at the same time, refrain from depleting the resources that should be reserved for coming generations.

A recent initiative undertaken by the World Bank – "Consultations with the Poor" – had the aim of defining wellbeing and poverty in terms of the priorities set forth by the poor themselves. In view of the fact that poverty and environmental degradation are closely linked and, in reality, are two sides of the same coin, this paper aims at examining the results obtained in the study.[1]

An initiative of this kind is unique since poverty is usually defined through academic methods without any particular attention being paid to the opinions of the poor. The World Bank study consists of two parts and has been published in three volumes. The first is a review of the participatory studies, which number more than 75, carried out during the 1990s (published as "Can Anyone Hear Us?"). The second volume "Crying Out for Change" reviews a series of consultations that were all undertaken during a single year, 1999. These consultations engaged 20,000 poor men and women from over 200 communities in 23 countries. (A third volume, "From Many Lands" contains the country case studies and the methodology.) The Poverty Group at the World Bank has prepared a "Global Synthesis" (World Bank, 1999) of the latter consultations. The authors suggest that this is the first ever large-scale participatory study that has had the aim of listening to the poor. It is emphasised time and again that "the poor are the true poverty experts".

This paper proceeds as follows. In section 2, poverty is depicted as both a cause and consequence of natural degradation. The vast majority of the world's poor live in two

[1] Although poverty and environment are linked with each other, other factors also affect them directly, of which production technology, consumption pattern and population growth are a few. These factors furthermore interact in ways that are difficult to apprehend.

distinct geographical regions, south Asia and sub-Saharan Africa. South Asia alone is the home of 40 per cent of the world's poor. There has been little urbanisation in both these regions and the majority of the poor still live in rural areas (the proportion of people living in rural areas in south Asia and sub-Saharan Africa is 72 per cent and 68 per cent, respectively, World Development Indicators, 2000). The focus of this paper is on the relationship between the environment and poverty in a rural context. In section 3 the focus is on institutional failures, both national and global. This is followed by an examination of the results obtained in the consultations study. Concluding remarks are then presented.

2. Poverty and natural capital

Poverty is most frequently defined (both in academic literature and in development communities) as a lack of sufficient income to fulfil basic needs. Measurements of poverty identify a basket of goods that are necessary to meet basic needs, and the cost of purchasing these goods is then estimated. A person whose income falls short of this cost is regarded poor. A threshold of income poverty that has recently become fashionable is the one that of "one dollar a day", adjusted for purchasing power parity (see recent World Bank publications).

This approach has a number of shortcomings. One fundamental shortcoming is that poverty, which is a lack of wellbeing and should consequently be measured on a scale of utility, is identified with income (see van Praag, 1982 and the extensive literature on the Leyden school for this view). A major difficulty from a practical point of view, however, is that it often is impossible to "convert" income into the constituents of wellbeing (i.e. income is not fungible). Lack of security in a community may, for example, be perceived as making people poor. Still, a dollar a day may not always be the right instrument to provide it.

Poverty is about a person's state of being, how a person is doing given the resources that he has at his command: is he well-nourished, does he have shelter, can he read and write and so on. It is thereby a person's "capability" to fulfil his basic needs that may conveniently be defined as poverty (see Sen, 1985, and recent issues of the Human Development Report; also see Hossain, 1998).

This particular point, in a slightly different context, is scored forcefully in the consultations. It is made evident that poverty is much more than income alone, that it is far from a single-headed concept, and that material and subjective perceptions (e.g. sense of belonging to the community) are both equally important. Food, shelter, clothing, health, security, freedom of choice all have important bearings on poverty.

The economy of the poor is often one based on biomass. The poor rely heavily on the local environmental resource-base for their livelihoods. The standard of living of the poor is dependent on the availability and quality of the natural resources: land, water, forest and so on.

Once this fact is recognised it becomes easy to relate the capability of the rural poor to certain environmental assets that exist in rural areas. Reardon and Vosti (1997), for instance, have identified distinct categories of natural resources that have a bearing on rural poverty. These are (i) natural resources such as water and soil, ground cover, biodiversity, (ii) on-farm resources: livestock, farmland, pastures, reservoirs, etc., (iii) off-farm resources: local financial and physical capital, and (iv) community-owned resources: roads, dams and commons, etc.

The loss of any of these assets may render a rural household vulnerable. Take the case of local forest and the supply of energy. A seemingly simple task such as the collection of fuel-wood, for instance, may represent a large share of household activity. A study of a micro-watershed in a Himalayan village in India has revealed that 25 per cent of the villagers' work time is devoted to fuel collection, animal care and grazing (Centre for Science and Environment, 1990). The same study has also estimated that the children in the area spend one-and-a-half times as many hours at work as adult males. Children in rural households routinely carry out such tasks as collecting fuel and fodder, taking care of domestic animals, fetching water, and so on. Male children can become net producers at as early an age as twelve years (Cain, 1977).

Taken together, the above considerations should imply that, where coping with deteriorating environment in rural areas is concerned, a large household has an advantage over a small household. This conjecture is indeed confirmed in studies on degradation and family size. Filmer and Pritchett (1996), for instance, report a positive correlation between fertility and distance to the local forest (in rural Pakistan), the forest being a source of firewood. Households located in areas with a greater distance to firewood were found to have more children (also see Cleaver and Schreiber, 1994).

In the foregoing the direction of cause and effect has been from environmental depletion (e.g. loss of forests) to poverty. The link may either be direct, affecting income, or indirect, e.g. inducing an increase in family size.

The reverse direction, from poverty to degradation, may also be possible and this has been emphasised in the literature. Referring to a vicious circle of poverty-environmental degradation in the Middle Hills of Nepal, Eckholm (1976) wrote in his pioneering study:

> Population growth in the context of a traditional agrarian technology is forcing farmers onto even steeper slopes, slopes unfit for sustained farming even with the astonishingly elaborate terracing practice there. Meanwhile, villagers must roam further and further from their houses to gather fodder and firewood, thus surrounding villages with a widening circle of denuded hillside.

Since then, this has been endorsed by numerous studies. See Kasperson et al. (1996), Brown et al. (1998) and the World Bank (1998a) for the fuelwood crisis, desertification, and the negative impact of shifting cultivation, respectively. See also Dasgupta (1993),

and Cleaver and Schreiber (1994) for sub-Saharan Africa.[2] The arguments have clustered mainly around two different themes (a) short time-horizons and excessive risk-taking behaviour on the part of the poor and (b) high rates of population growth and the associated stress on a fragile environment.

Yet there is a third strand of literature that completely rejects causality of any sort and emphasises instead the adaptive capacity of the formal and informal local institutions in mitigating shocks and stress. In a seminal piece of research, Boserup (1965) has highlighted (in a somewhat different context) how institutions and technology adapt to meet changes in population and scarcity of resources. Population and scarcity of resources are then seen as agents of change and not as something that causes harm to the environment (also see Boserup, 1981 and Simon, 1981).

The focus of this strand of literature is on the management practices and skills of the local population. Neither poverty nor increase in population is perceived to constitute a threat to the environment, and degradation is seen instead as an outcome of faulty institutions and policy arrangements. Examples are cited, both historical and from case studies, that illustrate the adaptive capacities of the grass root institutions in facing changed realities in environment and population. (See Tiffen et al. 1994, Ives and Messerli, 1989, Sillitoe, 1998, Berry, 1989, Ostrom, 1990, Ahluwalia, 1997, Leach et al. 1997 and Bromley, 1992.)

3. Failure in institutional arrangements

Much resource-base degradation and depletion is related to the (natural) difficulties in defining property rights. The "tragedy of the commons" occurs once the benefits of harnessing a common property are not balanced by the cost of maintaining it. Over-exploitation may follow.[3]

Property rights, however, should not be confused with rights to private property alone. As opposed to private property, the provision of communal and collective ownership has played significant role in the development of human society. On numerous occasions it has been the erosion of common property rights, rather than the failure of

[2] This, however, does not imply that a reduction in poverty will *automatically* improve the environment. There are many reasons for this. (i) The poor communities may already have well devised institutional structures and coping mechanisms in place to manage local commons and to deal with environmental stress and shocks. (ii) A reduction in poverty is not seldom accompanied by rapid shifts in production technology and demography (e.g. urbanisation). While these may mitigate the effects of some of the current aspects of deterioration, they may also introduce new ones. Finally (iii) a reduction in poverty often fails to improve the lot of the poorest people in society. Indeed it is this section of the population that has to rely most heavily on marginal resources.

[3] Hardin (1968) argued that commonly owned environmental resources would be damaged in the face of rapid population growth since everyone would free-ride or seek to maximise their short-term interests. This has been criticised on the ground that "commons" are not the same as "open-access" resources (Harrison, 1992). In fact village commons are often managed in a sophisticated manner with implicit arrangements of benefits and obligations.

bringing properties into private ownership, that has led to environmental degradation. The following examples may provide an illustration.

Jodha (1986, 1995) has estimated that, in a sample of dry-land villages in India, there has been a 25–60 per cent decline in the areas covered by the commons over a period of 25 years. This has happened as a result of a privatisation drive. The reliance of the poor households on the village commons has been in the range of 15–25 per cent of the total income.

In a different study Jodha (1980) has suggested that the increase in profitability of cropping and grazing, triggered by the governmental land reform programmes, has been the reason for increased desertification in the northern Indian State of Rajasthan. Ensminger (1990) reported an increase in inequality in Kenya due to privatisation of the common grazing fields. Feder (1977) claimed that the degradation of vast forestlands in the Amazon basin occurred as a result of beef cattle expansion, supported by strengthened infrastructure and loan facilities (also see Binswanger, 1999). The local farmers were displaced and their protein intake declined in spite of that the production of beef increased in the area (see Hecht, 1985).

Faulty institutional arrangements and policies imposed upon the local communities by *central authorities may also lie behind degradation. Biased economic policy* (disfavouring agriculture) in most of sub-Saharan Africa has been a major cause of faltering investment in this sector and the resultant degradation of the soil. A recent study of the Structural Adjustment Programme in southern Africa (South Africa, Tanzania, Zambia and Zimbabwe) claims that, by focusing exclusively on macro economic variables, the programme neglected performance at both the sector and institutional levels. The programme has thereby failed to improve the environment in the region (WWF, 2000).

4. Consultations with the poor

The consultations undertaken by the Bank shed new light on the concept of poverty *and may lead to a rethinking of some of the set ideas that are often held. A number of* findings in the consultations are striking. According to the report: "The large majority of poor people included in Consultations across the 23 countries said they are worse off now, have fewer economic opportunities, and live with greater inequality than in the past."

The consultations identified several elements of wellbeing and poverty. They have then been grouped into five different categories: (a) material wellbeing, (b) physical wellbeing, (c) freedom of action and choice, (d) security, and (e) social wellbeing. A poverty trap has then been constructed with the following problems: corruption, violence, powerlessness, incapacity, and bare subsistence level.

The consultations were meant to take place within a framework of a "participatory and open-ended method." But nonetheless it focused on four distinct concepts (i) good and

bad lives, (ii) priorities of the poor, (iii) interactions with the state, market and civil society and (iv) the evolution of gender and social relations. Concerns for the environment and natural resources were thus excluded from the very outset of the consultations.

During the consultations the poor people naturally had to pay heed to the survey design of the researchers and, as a consequence, environmental concerns were not explicitly voiced. It should also be noted that environmental factors are often instrumental to wellbeing and not its constituent-elements. The environment thus is not given priority in the list of elements that focus upon the "meaning" of wellbeing (as the consultations did). Moreover, the impacts of certain types of depletion and degeneration, regardless of their severity, are hard to "infer" and can only be detected through "estimation". Acid rain and global warming (and other changes in the environment that are transboundary in nature) may well belong to this category. Careful thought will nevertheless reveal that the elements of wellbeing and poverty expressed by the poor do in fact have an outright bearing on environmental damage. In the following a link is sought between the five categories of wellbeing that are mentioned in the consultations and the ever-deteriorating natural resources.

(a) **Material wellbeing:** As discussed above, the material wellbeing of the poor is linked directly to the accessibility and quality of the natural resource base (for growing food, grazing land, wild food, fish, fuel, fodder and other resources). Depletion and degradation of the local environment may thus greatly aggravate poverty. A recent study made in West Kalimantan, Indonesia has estimated that 95 per cent of the forest in the region has an agricultural opportunity cost that is less than 2 dollars per hectare per year. On the other hand, the extractive values alone of minor forest products such as fruits, latex medicines, etc. amount to 70 dollars (Chomitz and Kumari, 1998). Accessibility to commons, for instance, may diminish as a result of privatisation, introduction of new technology, population growth, etc. A loss in accessibility, in turn, may have a substantial impact on household income. Similarly faulty public policies both at national (e.g. agricultural policies in sub-Saharan Africa and the consequent decline in per capita food production) and international levels may result in severe degradation.

(b) **Physical wellbeing:** Environmental conditions play an important role in determining the health of the poor. Polluted water and air is the major cause of diarrhoea and respiratory diseases. Standing water and accumulated solid waste transmit diseases such as malaria and dengue fever. Two million people, most in south Asia and sub-Saharan Africa, die each year from indoor pollution alone (burning dung, wood and crop residues; WHO, 1997). There is a significant correlation between water and sanitation on the one hand and child survival and child malnutrition on the other (Hammer, 1997). The relationship between health outcomes and the availability of fresh water is well documented (Klees et al. 1999). The major victims of the HIV-epidemics are once again the poor in sub-Saharan Africa, and particularly adult males in their prime. The impact of this has been to reduce household income and to make rural families even more dependent on the dwindling environmental resources that are available. With rapid urbanisation and industrialisation livelihoods in urban areas are becoming bleak. In urban areas

environmental hazards and environmental degradation exist side by side with other hazards that impose a serious health burden on vulnerable groups. Lack of piped water, sanitation and drainage, high concentrations of biological pathogens, chemical pollutants, etc. cause ill health and premature death among the poor, often among those who are already suffering from immunological deficiency (see Satterthwaite, 1999).

(c) **Security:** The poor have identified security from natural calamities and economic vulnerability as an element of wellbeing. Floods, cyclones, hurricanes, earthquakes, droughts etc. typically hit those living in poverty hardest. Both the immediate and the lasting effects of natural calamities on poor households are devastating. Natural disasters coupled with lack of social safety nets and credit markets may result in a poverty trap that lasts for generations. A rise in sea level by one metre (as a result of global warming) is expected, for instance, to cut rice production in Bangladesh by half (World Development Report, 1999/2000).[4] And it is, once again, the poor who are the prime victims of the arsenic contamination of ground water in Bangladesh.

Peace, security and conflicts have a direct bearing on the environment. Soil degradation, loss of fertility, desertification etc. force people to move to new settlements for a better living. According to UNHCR (1998), more than 27 million people were receiving refugee assistance in 1995. (According to Myers and Kent, 1995, the number of environmental refugees may be as high as 25 million.) Refugees and displaced people are then forced to make assaults on the environment and put pressure on the over-stretched infrastructure for their survival. Similarly, war and armed conflicts cause resource productivity to collapse and the damage is spread widely – far beyond the areas originally affected. People displaced by war bring new fragile areas under pressure. The second Gulf war, for instance, has highlighted these problems.

(d) **Freedom of action and choice:** Freedom of action and choice is related to the livelihoods of the rural poor and is closely intertwined with the management of local environmental resources. The depletion of the village commons, for instance, in favour of privatisation and central control deprives the local community of the management of the resources. The loss of ownership, on its own, may lead to a sense of alienation and thereby aggravate poverty. The erosion of village commons and forestlands make people worse-off if those who have been deprived are not allowed to share the benefits of the new arrangements. Centralised decision-making, at a distance from the site in question, may often fail to take the local resource-base realities into account.

[4] The rise in sea level will claim 17% of the land area in Bangladesh, threatening the Sundarbans which contain the largest mangrove forests in the world along with their uniquely rich flora and fauna.

(e) Social wellbeing: Good relations within the family and community have been defined in the consultations as social wellbeing. Social wellbeing may also be seen as the ability of people to participate in society and not to be excluded.[3] Social inequality, accentuated by the deterioration of the natural resource-base (e.g. due to natural calamities), may be a major cause of social affliction (occasionally forcing people to become refugees). Inequality has long been identified as a potential source of social unrest and conflict, and both poverty and depletion of the local resource-base may cause an increase in inequality. Wellbeing may also be gender specific. Child malnutrition in south Asia, for instance, is almost twice as high as in sub-Saharan Africa, and the difference cannot be explained by disparities in poverty rates or food availability. The root of this so-called Asian enigma is thought to be a result of the (lower) status of the Asian women in society compared to their African counterparts (Ramalingaswami et al. 1996). Parents whose children have high rates of morbidity and mortality tend to prefer large families, thereby putting an extra strain on environment.

The participatory method that has been employed in the consultations has been criticised on several different grounds. In launching the study James Wolfensohn, president of the World Bank, said: "My colleagues and I decided that in order to map our own course for the future, we need to know about our clients as individuals. We launched a study entitled "Voices of the Poor" … " (quoted in "Can Anyone Hear Us?"). In an interesting survey with the provocative title "How Can *We* Know What *They* Want? Understanding Local Perceptions of Poverty and Ill-being in Asia", Moore, Choudhary and Singh (1999) write:

> They would like more insight into how poor people in poor countries understand the character, causes, correlates and cures of poverty and deprivation. … A review of the literature available on poor people's perceptions of poverty and ill being in Asia suggests that *it is very difficult to obtain this kind of knowledge in a policy-relevant form.* The information is heavily filtered by the context in which it was collected, the values of the researchers, and the expectations of the respondents (emphasis added).

Economists (at the World Bank), specialising in quantitative analysis, have also raised (not surprisingly) similar doubts. In a recent econometric study entitled "Identifying Welfare Effects from Subjective Questions", Ravallion and Lokshin (2000) write in the summary, "We argue that the welfare inferences drawn from answers to subjective-qualitative survey questions are clouded by concerns over the structure of measurement errors and how latent psychological factors influence observed respondent characteristics."

[3] The root of this concern goes back to Adam Smith (1776). Smith, referring to "leather shoes", wrote: "The poorest credible person of either sex would be ashamed to appear in public without them."

5. Concluding remarks

The vast majority of the world's poor live in the rural areas of south Asia and sub-Saharan Africa. The livelihoods of the rural poor are extremely dependent on the fragile environmental resource-base that the poor are often compelled to inhabit. Further degradation and depletion of the nature in their local community will invariably exacerbate the lot of the poor. An aggravation of poverty, in turn, will compel the poor *to make use of the marginal natural resources at their disposal in a way that may not* be sustainable.

The analysis presented by Boserup shows that historically it was the scarcity of resources and population growth that ultimately compelled societies to innovate institutions and technology, thereby opening up new avenues for further achievement. However, what has been true in the past may not hold in the future. Since the publication of Boserup's book (1965) the world population has almost doubled. (In 1960 the world population was three billion and it surpassed six billion in 1999. It is expected that a billion more will be added in a decade.)

The issues are complex and there appears to be no quick solution to the problems that we face today. But it is true that there is an urgent need to view environmental degradation and poverty within an integrated framework. Dire poverty, a dwindling natural resource base, the weakening of the commons and traditional institutions, lack of adequate provision for physical infrastructure — all need to be addressed in a holistic context. What is needed is an approach that views poverty and natural destruction as two sides of the same coin. A loss of a natural resource that is permanent should invariably be regarded at the same time as an exacerbation of human poverty. And time is running out.

A recent study entitled "Consultations with the Poor" attempted to define poverty and wellbeing in terms of the priorities set forth by the poor themselves. The study may well have captured the "subjective" aspect of the notion of poverty and this indeed is important. But poverty as a concept is far from being exclusively subjective. The capability to be well-nourished and free from disease, to be able to read and write, to have shelter etc., are at the core of poverty, regardless of how their merits are perceived. These capabilities are, in turn, contingent on the natural resource-base (e.g. as listed in Reardon and Vosti) *in communities. By failing to take note of this important consideration* the consultations study becomes rather limited in nature and sheds light on only one particular aspect, viz. the subjective aspect of poverty.

The study focused on the elements of poverty and not on its underlying causes. In this setting it is only natural that issues such as material and social wellbeing, health, security and so on were given prominence in the responses. This bias (of neglecting the underlying causes) has resulted in a description of poverty that overlooks its important environmental underpinnings. Poverty, in reality, is intimately linked with the loss of the natural resource-base in the communities.

References

Agarwal, Anil and Sunita Narain, 1999; "Community and Household Water Management: The Key to Environmental Regeneration and Poverty Alleviation," Paper Prepared for the UNDP-EC Poverty and the Environment Initiative, New York and Bruxelles.

Ahluwalia, M, 1997; "Representing Communities: the Case of a Community-Based Watershed Management Project in Rajasthan, India," *IDS Bulletin*, 28:4.

Barbier, E.B., 1999; "Rural Poverty and Natural Resource Degradation," in Lopes and A. Valdes (eds.), *Rural Poverty in Latin America*, John Hopkins University Press, Washington DC.

Barrow, C.J., 1999; *Environmental Management: Principles and Practice*, Routledge, London.

Berry, S.; "Social Institutions and Access to Resources," *Africa*, 59:1.

Binswanger, H.P., 1999; "Brazilian Policy that Encourages Deforestation in the Amazon," World Bank Environment Department Working Paper, 16, Washington DC.

Boserup, Easter, 1965; *The Conditions of Agricultural Growth*, Allen and Unwin, London.

Boserup, Easter, 1981; *Population Growth and Technological Change: A Study of Long-Term Trends*, University of Chicago Press, Chicago.

Bromley, Daniel (ed), 1992; *Making the Commons Work: Theory, Practice and Policy*, Institute of Contemporary Studies Press, San Fransisco.

Brown, L., Flavin, C., and French, H., 1998; "State of the World: 1998," The World Watch Institute, W.W. Norton, New York.

Cain, M., 1977; "The Economic Activities of Children in a Village in Bangladesh," *Population and Development Review*, 3.

Chomitz, K., and K. Kumari, 1998; "The Domestic Benefits of Tropical Forests: A Critical Review," *World Bank Research Observer*, 13(1).

Cleaver, K.M., and G.A. Schreiber, 1994; *Reversing the Spiral: the Population, Agriculture, and the Environment Nexus in Sub-Saharan Africa*, World Bank.

CSE (Centre for Science and Environment), 1990; "Human-Nature Interactions in a Central Himalayan Village: A Case Study of Village Bemru," CSE, New Delhi.

Dasgupta, Partha, 1993; *An Inquiry into Well-Being and Destitution*, Clarendon Press, Oxford.

Dasgupta, Partha, 1996; "The Economics of the Environment, Keynes Lecture in Economics," The British Academy, London.

Dasgupta, Partha, 1998; "Economics of Poverty in Poor Countries," *Scandinavian Journal of Economics*, 100.

Eckholm, E., 1976; *Losing Ground: Environmental Stress and Food Problems*, Norton, New York.

Ekbom, Anders and Jan Bojö, 1999; "Poverty and Environment, Evidence of Links and Integration into the Country Assistance Strategy Process," Discussion Paper, 4, Environment Group, Africa Region, World Bank, Washington DC.

Ensminger, S., 1990; "Co-opting the Elders: The Political Economy of State Incorporation in Africa," *American Anthropologist*, 92.

Feder, E., 1977; "Agrobusiness and the Elimination of Latin America's Rural Proliterate," *World Development*, 5.

Filmer, D., and L. Pritchett, 1996; "Environmental Degradation and the Demand for Children, Research Project on Social and Environmental Consequences of Growth Oriented Policies," Working Paper, 2, World Bank, Washington DC.

Forsyth, Tim, Melissa Leach and Ian Scoones, 1998; "Poverty and Environment: Priorities for Research and Policy, An Overview Study," Paper Prepared for the UNDP-EC Poverty and the Environment Initiative, New York and Bruxelles.

Hardin, Garret, 1968; "The Tragedy of the Commons," *Science*, vol. 162.

Harrisson, P., 1992; *The Third Revolution: Population, Environment and a Sustainable World*, Penguin, Harmondsworth.

Hecht, S., 1985; "Environment, Development, and Politics: Capital Accumulation and the Livestock Sector in Eastern Amazonia," *World Development*, 13(6).

Hossain, Iftekhar, 1998; "Incredible Sen, Poverty as "Lack of Capabilities," *Development Today*, 20.

Ives, J.D., and Messerli, B., 1989; *The Himalayan Dilemma: Reconciling Development and Conservation*, Routledge, London.

Jodha, N.S., 1980; "The Process of Desertification and the Choice of Interventions," *Economic and Political Weekly*, 15.

Jodha, N.S., 1986; "Common Property Resources and Rural Poor in Dry Regions of India," *Economic and Political Weekly*, vol. 21.

Jodha, N.S., 1995; "Common Property Resources and the Environmental Context: Role of Biophysical versus Social Stress," *Economic and Political Weekly*, 30(51).

Kasperson, J., Kasperson, R., and B.L. Turner, 1996; "Regions at Risk: Exploring Environmental Criticality," *Environment*, 38.

Leach M., Mearns, R., and Scoones, I., 1997; "Community-Based Sustainable Development: Consensus or Conflict?" Special edition, *IDS Bulletin* 18 (4).

Moore, Mick, Choudhry, M and Neelam Singh, 1999; "How Can *We* Know What *They* Want? Understanding Local Perceptions of Poverty and Ill-Being in Asia, Working Paper, 80, IDS, Sussex.

Myers, Norman and Jennifer Kent, 1995; *Environmental Exodus- An Emergent Crisis in the Global Arena*, Climate Institute, Washington DC.

Mäler, K-G, 1974; *Environmental Economics: A Theoretical Enquiry*, Johns Hopkins University Press, Baltimore.

Ostrom, Elinor, 1990; *Governing the Commons: The Evolution of Institutions for Collective Actions*, Cambridge University Press, New York.

Parikh, Kirit S., 1998; "Poverty and Environment, Turning the Poor Into Agents of Environmental Regeneration," Working Paper 1, Social Development and Poverty Elimination Division, UNDP.

Pigou, A.C., 1920; *The Economics of Welfare*, Macmillan, London.

Prakash, Sanjeev, 1997; "Poverty and Environment Linkages in ; "Mountains and Uplands: Reflections on the Poverty Trap Thesis," Creed Working Paper, 12, IIED, London.

Ramalingaswami, V., Urban Johnsson and Jon Rohde; 1996; "Asian Enigma," *Progress of Nations 1996*, UNICEF.

Ravallion, Martin and Lokshin, M.; "Identifying Welfare Effects from Subjective Questions," Working Paper, Poverty and Human resources, Development Research Group, World Bank, Washington DC.

Reardon, T., and Vosti, S., ed. 1997; *Sustainability, Growth and Poverty Alleviation: A Policy and Agroecological Perspective*, The Johns Hopkins University Press, Baltimore.

Satterthwaite, David, 1999; "The Links Between Poverty and Environment in Urban Areas of Africa, Asia and Latin America," Paper Prepared for the UNDP-EC Poverty and the Environment Initiative, New York and Bruxelles.

Scherr, Sara J., 1999; "Poverty-Environment Interactions in Agriculture: Key Factors and Policy Interractions," Paper Prepared for the UNDP-EC Poverty and the Environment Initiative, New York and Bruxelles.

Segnestam, Mats and Thomas Sterner, 2000; "Poverty and the Environment" (in Swedish), mimeo, Sida.

Sen, Amartya, 1985; *Commodities and Capabilities*, North-Holland, Amsterdam.

Sillitoe, P., 1998; "It's All in the Mound: Fertility Management under Stationary Shifting Cultivation in the Papua New Guinea Highlands," *Mountain Research and Development*, 18:2.

Simon, J.L., 198; *The Ultimate Resource*, Princeton University Press, Princeton.

Smith, Adam, 1776; *An Inquiry into the Nature and Causes of the Wealth of Nations*, (Republished), Home University Library, London.

Tiffen, M., Mortimore, M., and F. Gichuki, 1994; *More People, Less Erosion? Environmental Recovery in Kenya*, John Wiley, Chichester.

UNDP, 1998; *Human Development Report 1998*, New York, Oxford University Press.

UNEP, 1999; *Global Environmental Outlook 2000*, Earthscan, London.

UNHCR, 1998; *State of the World's Refugees, 1997-1998: A Humanitarian Agenda*, UNHCR, Geneva.

W.H.O., 1997; *Health and Environment in Sustainable Development: Five Years after the Earth Summit*, Geneva.

van Praag, 1982; "Objective and Subjective Dimensions of Poverty," in Serpellon, G. (ed.) *Understanding Poverty*, Angeli, Milano.

World Bank, 1998; *World Development Report 1998*, New York, Oxford University Press.

World Bank, 1998a; "Poverty Reduction and the World Bank: Progress in Fiscal 1996 and 1997," Washington DC.

World Bank, 1999; "Global Synthesis, Consultations with the Poor," World Bank, Washington DC.

World Bank, 1999; *World Development Report 1999/2000*, New York, Oxford University Press.

World Bank, 2000; *Can Anyone Hear Us?* New York, Oxford University Press.

World Bank, 2000; *Crying Out for Change*, New York, Oxford University Press.

World Bank, 2000; *From Many Lands*, New York, Oxford University Press.

World Bank, 2000; *World Development Indicators*, World Bank, Washington DC.

Worl Wildlife Fund, 2000; "Project Overview," (by David Reed and Ola Larsson), mimeo, 3rd International Advisory Committee Meeting, Brussels, March 13, 2000.

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