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**Trade Liberalization,  
Rural Poverty and the  
Environment:  
A Wide-Ranging  
Review of the Debates**



## Trade Liberalization, Rural Poverty and the Environment: A Wide-Ranging Review of the Debates

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### Abstract

The linkages between international trade, the environment and poverty have come under increased scrutiny in the last decade. This is, at least in part, attributable to the perception that the current process of globalization is occurring at a rate unprecedented in human history, and with a lack of attention to consequences for the rural poor and the environment. The debate on whether the linkages indeed exist, and whether they are positive or negative, is a lively one. The purpose of this literature review is to highlight some of the main strands of thought in this debate, taking special care to admit a diverse range of voices to the conversation. The multiplicity of perspectives comes from academia, civil society, NGOs, research institutions, indigenous peoples, international agencies and the private sector, from the North and from the South.

## INTRODUCTION AND CONTEXT

**In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it.**

– The Rio Declaration: Principle 4

This literature review has been commissioned as a component of the WWF- World Bank joint project on Trade Liberalization, Rural Poverty and the Environment. Over a three year period, the project will study interactions between the three in selected rural areas, with the goal of identifying policy and institutional measures that at the national and international level may increase the positive, avoid the negative or redress the damages that may result from the impact of trade liberalization on the rural poor and the rural environments. In addition to these case studies around the world, the project team will also carry out research and write policy papers on specific topics of interest relevant to the trade, poverty and environment debate. Through this review, we will attempt to review what a diverse group of experts and relevant stakeholders have said on the subject.

While trade policy is usually formulated at the national level, resulting from unilateral decisions of central governments or negotiations between national governments, its impacts can be felt down to the most disaggregated rural level. This disconnect in scale can make it difficult to make direct connections between trade policy and rural environmental and economic conditions. This project (particularly the case studies) will try to tease out these sometimes-opaque connections using standard methodologies from eco-

nomics, ecological sciences and social sciences. Whereas many current trade liberalization studies focus on specific aspects of international trade negotiations, this project will focus on local trade impacts and on national policies and institutions that contribute to those impacts.

Possible lines of inquiry could be: What is the chain of causality between changes in trade agreements or trade liberalization and changes in (1) the state of the environment and/or (2) changes in incomes and well-being in rural areas? What is the role of national and local institutions and governance practices in shaping those changes? If there are gains from trade, what mechanisms can ensure that the gains are equitably distributed? Or is trade-driven economic growth necessarily inequitable? Are there different implications in the short run versus the long run? Are some outcomes irreversible on both the social and environmental side? Are there universal lessons that emerge or is it best to focus on context-specific recommendations? What are the trade-offs that may need to be made between the environment and economic growth and between different ecosystem services, if we want to uphold a sustainable development path? Who are the relevant stakeholders that must participate in these determinations? How can we employ inter-disciplinary methodologies to study this issue so that importance is given to all aspects?

The overarching objective of this project is to identify policy and institutional measures that will ensure that trade liberalization contributes in a positive way to alleviating poverty and promoting environmental sustainability in rural areas.

### THE REST OF THE PAPER IS ORGANIZED AS FOLLOWS:

Section 1: **Overview of the Literature**

Section 2: **Points of View**

Section 3: **Cross-Cutting Themes**

Section 4: **Methodologies**

Section 5: **Examples of Methodologies in Use**

Section 6: **Conclusions and Suggestions for Future Research**

Section 7: **Bibliography**

## I. OVERVIEW OF THE LITERATURE

The literature surveyed for this paper has been chosen to represent as diverse a set of viewpoints as possible. That said, it is not meant to be exhaustive. It is no surprise that much has been written on the subject of trade (and secondarily on trade and the environment and trade and economic development) from the perspective of the economics discipline. Other branches of academia—political science, sociology and ecology—are also well-represented in this debate. There is an increasingly rich body of work emerging from NGOs and civil society groups that have been mobilized in protest against perceived injustices of the current global trade regime. Necessarily, international institutions that have been charged with development goals, such as the World Bank and the United Nations, are also active participants in the debate. The views of governments are important in framing national priorities, and the forms of governance often determine the quality of the outcomes. The interests of the environment are expressed via conservation organizations (such as WWF). Finally, the private sector is a much-vaunted force in the push toward globalization and thus its views are critical, and although private businesses do not publish many position papers, pro-business journals and think-tanks do.

## II. POINTS OF VIEW

### INTRODUCTION

The points of view that emerge from the literature survey are extremely varied and sometimes at odds. Much of the literature falls along the axes of (1) trade impacting economic growth which in turn impacts poverty reduction, (2) trade and the environment, or (3) poverty and the environment, with very few intersections across all three axes. The object here is to characterize various positions in a brief, simplified fashion. This might lead to some degree of generalization and the reader would be well advised to delve into the source material indicated in the bibliography to get a first-hand sense of some of the nuances.

The issue of whether or not trade contributes to growth and poverty reduction has been a fundamental research and policy question for the last fifty years. More recently this has morphed into questions about the value of globalization in general. There are perhaps few subjects that have galvanized as much debate and acrimony as the on-going process of globalization, often equated with trade liberalization. The lightning rod for much of the discussion has been the World Trade Organization (WTO) and its regulation of the international trading regime (for an overview of the architecture of the WTO, see Lloyd, 2001). The World Bank and the IMF have also been the subject of much debate due to their perceived role in accelerating the transition to free markets in the developing world via structural adjustment requirements and aid conditionality. For an overview of the position of these institutions and its critics regarding trade, growth and poverty see World Bank (2002), Winters (2004) and Oxfam (2002).

The linkages between poverty and the environment are also contentious. The rural poor necessarily depend on environmental resources for their livelihood and usually have few alternatives for income-generating activities. They can be both agents of environmental degradation, as well as the most vulnerable to changes in the natural resource base. They are also uniquely qualified to husband resources in a sustainable manner and in many cases have been doing so for millennia. For a brief survey of the linkages between rural

livelihoods and conservation, see Salafsky and Wollenberg, 2000.

The impact of trade liberalization on the environment in developing countries is hotly contested. The economists' perspective on the debate is well summarized in an article by Copeland and Taylor (2004). Some argue that, because developing countries are more dependent on their natural resource base as a source of tradable commodities and due to their lack of stringent environmental regulations and ill-defined property rights, liberalization will inevitably lead to over-exploitation of resources and degradation of the environment (see Chichilnisky, 1994 and McGuire, 1982). Others argue that freer trade will bring growth and income gains that will in turn lead to better environmental stewardship in developing countries. (On the latter point, see the literature on environmental Kuznets curves, e.g. Grossman and Krueger, 1993 and Dean, 2000). The empirical evidence is mixed and points to the importance of location-specific variables.

The rest of this section is devoted to brief sketches of the viewpoints of various commentators and stakeholders.

### ACADEMIC ECONOMICS

Mainstream economics tends to view trade liberalization as welfare enhancing because of its contribution to long run economic growth. The Neoclassical model based on Solow (1956) and the newer endogenous growth models (see Lucas, 1988 and Grossman and Helpman, 1991) emphasize the ways in which openness leads to a more efficient allocation of resources, quicker diffusion of technologies and increased opportunities for learning by doing. However, the effects of growth on poverty reduction and income distribution are less clear-cut. See, for example, Berg and Krueger, 2003, where the authors make the case that trade openness contributes greatly to economic growth but does not have any systematic effects on the poor beyond the effect on overall growth.

A typical economic analysis might be to examine the employment or income changes resulting from an instance of trade liberalization within a General Equilibrium framework

(see the Methodology section for further details). Increases in either or both are considered evidence of improved welfare. Barriers to trade, in the form of tariffs, quotas, subsidies etc., are viewed as inefficient and detrimental to the growth-enhancing potential of trade. The Global Trade Analysis Project (GTAP), started in 1993, has quickly become the source of models and datasets of choice for analyzing trade impacts.

In the real world, market failures are frequent, complicating the theoretical arguments for trade liberalization. Examples of such failures include environmental externalities, weak governance structures, labor market frictions and ill-defined property rights,<sup>1</sup> among others. Also, potentially gains from trade can be unequally distributed which could have important social welfare implications. In response to the above-mentioned drawbacks, several alternative approaches to analyzing the impact of trade liberalization have emerged, approaches that take into account the social and environmental repercussions as well. Environmental impact assessments that attempt to quantify environmental degradation are one such example. CGE models can be constructed in a disaggregated manner that allows one to examine the impact of trade liberalization on various income strata in an economy to get a clearer sense of how benefits and costs are distributed. For example, Cogneau and Robilliard (2000) embed a microsimulation model within a CGE framework, doing away with the representative agent assumption and using data from household surveys in Madagascar.

There is also a rich literature on alternative paradigms of development that do not correspond strictly to the mainstream neo-liberal school of thought. This line of work claims that under certain circumstances trade liberalization could actually adversely impact developing countries and barriers to trade might be beneficial at least in the short run. For an interesting discussion of this topic refer to, for example, Rodrik, 2003. His claim is that Neoclassical economics is more flexible than it is given credit for, and economic principles do not map into unique policy packages such as removal of all trade barriers. Also, igniting growth and sustaining it are somewhat different enterprises, with the latter requiring

deeper institutional reform and commitment.

The importance of good institutions for fostering growth and development is a topic of much interest among economists and policymakers. In fact, this has given rise to a new line of research called New Institutional Economics (NIE). Douglass North, 1990, emphasized the role of property rights, enforceable contracts and the rule of law in promoting growth. Hall and Jones, 1999, attempt to demonstrate this econometrically by focusing on the concept of “social infrastructure.” Rodrik et al, 2002, argue that the quality of institutions trumps geography and trade in determining income levels around the world. For examples of measures of good governance, refer to Kaufmann et al, 2002. The authors construct aggregate indicators of bureaucratic quality, rule of law and graft for 160 countries.

Export-led growth as a model of development and poverty reduction is an important component of the economic policies of most developing countries, and has been practiced most successfully by several Asian countries (China, Thailand, Korea, Vietnam, India, to name a few). By reducing barriers to trade and actively providing incentives for production for export, these countries have been able to gain access to big, wealthy markets in developed countries and exploit their competitive advantage in labor-intensive goods. The classical economic arguments favoring this strategy can be found in Krueger, 1997, and Meier, 1995. They make the case that export growth is correlated more generally with output growth and in this way enhances development. An import substitution strategy (often buoyed by the “infant industry protection” argument), in contrast, results in inefficiencies and a waste of public resources. An up-to-date review of the “mainstream economics,” mostly positive, view of trade liberalization and poverty can be found in Winters et al, 2004.

Critics of this mainstream view argue that an export-led growth strategy often prevents countries from developing production sectors in higher value-added, more technologically sophisticated goods. Hence they remain stuck in the production of primary commodities or low-skill, low-value added goods. Also, export-led strategies may leave countries vulnerable to economic downturns in the developed world

which are often accompanied by demand stagnation. Palley, 2002, describes several drawbacks of the export-led strategy including prevention of the development of domestic market growth, a “race to the bottom” among developing countries, conflict between workers in developed and developing countries, financial instability in developing countries due to over-investment booms, long-run deterioration in terms of trade for developing countries and the reinforcement of the relationship of dependence between developing and developed countries.

More recently, some economists have been emphasizing a domestic-demand led strategy (Palley, 2002). The vast domestic markets and rising middle class in countries like China and India can be a major force in determining which goods are produced and fueling economic growth. Developing countries are also pursuing strong policies for technology transfer so that they do not remain trapped in low value-added sectors. Also some authors have pointed that many successful cases of an export-led growth strategy are not models of the *laissez-faire* free trade policy espoused by mainstream economists. In fact, most East-Asian economies remained highly protected in spite of the export-orientation. These are planned economies, with a great deal of government control over investment and industrial policy and restricted access of foreign firms to their domestic markets (Amsdem, 1989 and Wade, 1988).

An article by Felipe, 2003, provides a good summary of the arguments in favor of and against an export-led growth strategy, as well as a presentation of the argument for domestic demand-led growth. In his view, the main constraint to growth currently is a lack of aggregate demand and the key question is how to stimulate this demand in a way that enhances growth. The choice of exported goods and services is crucial in a world where demand can be very elastic. Export-led and domestic demand-led policies can work in a complementary fashion.

The linkages between trade and the environment have been examined in the context of several topics including: whether environmental regulations comprise trade distortions, the effect of property rights failures, the political econo-

my of formulating environmental regulations, what is the empirical evidence on trade openness and environmental degradation, decomposition of scale, composition and techniques effects, is there a Kuznets curve for the environment, evidence for the validity of the Porter hypothesis regarding a “race-to-the-bottom” in the presence of inter-country differences in the stringency of environmental regulations, what are optimal policies for dealing with transnational pollution, the use of product standards as non-tariff barriers, economic incentives for the trade in hazardous substances, implications of exchange rate policy for environmental degradation, and the consonance or dissonance between optimal trade and environmental policies and whether they can or should be harmonized across countries. These and other issues are the subject of several excellent review articles including Anriquez and Ingco, 2002; Copeland and Taylor, 2003; Dean, 1992; King and Kolstad, 1996; and Copeland and Taylor, 2004.

The Copeland and Taylor (2004) paper uses a general equilibrium framework to evaluate the trade-environment relationship, where the level of pollution in an economy is determined by the joint interaction of government policy and private sector responses. The paper examines various theoretical explanations for the Environmental Kuznets Curve (EKC) and points out several drawbacks to assuming a simple relationship between income levels and environmental quality. These include the fact that the income effect may be offset by capital accumulation or export-led expansion of polluting industries. The *sources* of growth matter greatly for the environmental consequences. In the absence of well-functioning markets for the environment, the authors argue that an optimal second best policy is very sensitive to the market structure, assumptions on technology and empirical magnitudes.

## SOCIOLOGY, POLITICAL SCIENCE AND POLITICAL ECONOMY

The analysis of trade and globalization benefits greatly from an examination through the lens of institutions and governance structures; this is the particular strength of sociology, political science and political economy.

The colonial experience of many developing countries led to the emergence of Dependency Theory, which posited that, even in the absence of direct colonial relationships, growth in LDCs would be stifled by their dependence on developed nations and that developed nations would seek to preserve this subordinate status. Multinational corporations were seen as the new way through which these relationships would continue to exist. The theory has its roots in Marxist ideas about imperialism and was developed in opposition to Modernization theorists who argued that the backward status of developing countries was due to internal factors. It was first articulated by Raul Prebisch, an Argentinean economic advisor in the 1930s.

In the 1970s, sociologist Immanuel Wallerstein took the concept of core and periphery countries and further developed it through World Systems analysis. In his 1974 book, *The Modern World System: Capitalist Agriculture and the Origins of the European World Economy in the Sixteenth Century*, he developed a theoretical framework for understanding the rise of the modern world. In his analysis, the capitalist world system depended on an international division of labor that put regions in different categories: core, semi-periphery, periphery and external. He defined four stages of growth, based on a historical analysis of European development. A reframing of these neo-Marxist arguments in the context of the current era of globalized trade and finance has been put forward by Kenneth Surin (See Surin, 1998).

Dependency theory has received its strongest criticism from Neoclassical economics, which argues against such a deterministic view of development. Please refer to the section on Economics for relevant readings. See also Lubeck, 1992, for an overview of three major strands of thought—

Neoliberalism, Structural-Nationalism and Institutional Analysis—viewed in relation to the African development crisis.

Gereffi, 1992, conducts a comparative analysis of the development paths of four world regions—Latin America, South Asia, East Asia and Africa—to draw insights about the development process. Five theoretical perspectives are examined: Neoclassical economics, world-systems/dependency theories, the developmental state, institutional analysis and Marxism. Statistical comparisons and case studies are used to trace the development trajectories of the regions under study and see which theory best explains the data. Sociologist Gary Gereffi has also been instrumental in developing a new line of work that delves into global commodity chains (GCC), their governance structures and the institutional framework within which they function (see Gereffi, 1994). Please refer to the Methodology section for more details.

There is also considerable sociological and political science research that delves into the concept of globalization and its impacts on society. See, for example, Guillén, 2001, which discusses the various connotations of the word "globalization" and makes the case for a comparative sociology of globalization that is sensitive to local conditions. Riain, 2000, examines how globalization is transforming the relationship between states and markets. Four dominant models are considered: liberal states, e.g. Anglo-America; social rights states, e.g. Western Europe; developmental states, e.g. East Asia; and socialist states, e.g. China. Rather than separate entities, states and markets can best be seen as intertwined.

Szelenyi and Kostello (1996) explore the connection between the growth of markets and economic inequality. They describe three types of market penetration—local markets within redistributively integrated economies, socialist mixed economies and capitalist-oriented economies and three types of markets—commodity markets, labor markets and capital markets. They conclude, based on empirical evidence from China and Eastern Europe, that as markets penetrate more deeply they become a major source of inequality. Also, the economic elite of society are adept at using market

reforms to their advantage and succeed in maintaining their position of privilege even as institutions change.

## ANTHROPOLOGY

In a wide-ranging article, Escobar (1988) examines the concept of "Development" and how it has come to be understood since the post-World War II era, using the example of Colombia. He argues that between 1945 and 1955, under the direction of the International Bank for Reconstruction and Development (IBRD), a discourse was created whereby a large number of countries were deemed "underdeveloped" and detailed strategies and plans were drawn up with the aim of transforming them into a form of life patterned on Western industrialized nations. These plans percolated down to every aspect of life in these countries—trade, agriculture, administration, natural resources, and cultural values. In time, development has become professionalized and institutionalized.

The imposition of Western economic practices and rationality on developing countries has had some peculiar impacts and Escobar cites the following anecdote from sociologist Orlando Fals Borda (which took place in the Tierra de Loba of the Atlantic coast region of Colombia):

*It is known that foreigners were adamantly opposed to the communal use of lands, which was a substantial part of local cultural identity and the local economy... Moreover, they introduced the use of barbwire..., fostering its use as a rational and natural practice for agricultural production. This practice, however, was particularly upsetting to the peasants of Loba, whose rationality and survival logic was quite different; this irritation increased even more when they saw their communal lands and their customary paths crossed by fences, supposedly in defense of the sacrosanct principle of private property.* (Fals Borda, 1984)

In Escobar's view, "the effect of the introduction of development has to be seen not only in terms of its social and economic impact, but also, and perhaps more importantly, in relation to the cultural meanings and practices they upset or modify."

Global integration is the subject of a paper by June Nash

(Nash, 1994), which explores the impact of this integration on subsistence sectors, both in developed and developing countries. She argues that global integration exacerbates the impact of the cyclical crises of capitalism and this has devastating impacts on subsistence economies which have few coping options. Integration has meant that more and more people are now subject to worldwide economic trends beyond their control and also that subsistence ways of life are under increased threat from the market production system. In particular, Nash disputes evidence from the World Bank that global economic interdependence has been economically beneficial. She cites the divergence of the African and Latin American experiences from the average world economic performance, and also the erosion of welfare measures (as opposed to GNP growth rates). She also criticizes the volatility of world financial markets and the harsh effect this has had on developing nations. Through her anthropological fieldwork in Mexico, Bolivia and the United States, she also shows that collective action in response to these crises is more widespread in developing countries than in the "industrial wastelands of developed countries".

Anthropologists have also studied the impact that trade liberalization can have on traditional societies that may have managed environmental resources in a sustainable manner for generations. Their traditions might include practices such as swidden cultivation, harvesting of non-timber forest products, deep knowledge of natural cycles and a community-based approach to livelihoods. Such practices are extremely vulnerable in the face of the introduction of markets and private property rights, especially accompanied by institutions that are not sensitive to local needs. Agarwal (1995) argues that the distinction between indigenous and scientific knowledge is completely artificial. While recent recognition of the legitimacy of indigenous knowledge has given voice to disadvantaged populations, it has also led to a belief that such forms of knowledge are narrow and location-specific, unable to transcend boundaries the way "western" scientific knowledge can. Integration with the outside world can also provide new sources of income, access to health care and education, political awareness and a recognition of rights. The course of

development thus hinges on both the institutional context and the possibilities for and desires of local populations to adapt.

Political ecology (itself a co-mingling of human ecology and political economy) as a sub-discipline of anthropology is a rapidly growing field. It seeks to understand environmental conflicts in the context of local places, people and institutions, as well as in the wider context of globalization. A broad understanding of these concepts can be gained by referring to Peet and Watts (1996) and Bryant (1992). According to Moore (1998) locality and community cannot be defined as simply the "non-state" and the "non-modern," but are themselves the products of ongoing struggles knitting together diverse histories and geographies.

## ECOLOGY

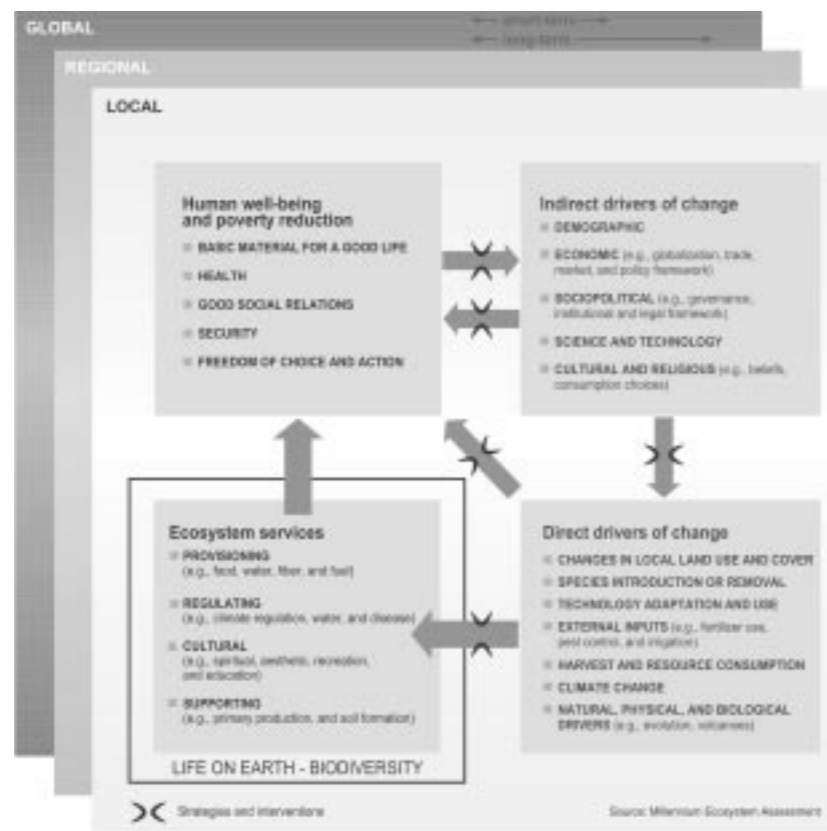
To understand the impacts of trade liberalization on the environment, the ecological perspective is crucial. Ecologists describe the complexity and interdependence of natural systems, showing the danger of reducing the environment to discrete components that can be preserved or used independently. It is also important to take into account the possibility of irreversible loss of a natural resource once it has been degraded to a certain point and that critical threshold values for ecosystems and species exist. There are tradeoffs between human needs and ecosystem preservation, as well as tradeoffs between competing environmental priorities. Policies that promote sustainable development have to take into account these trade-offs and find a way to balance them.

While ecology has seldom tackled up-front the links between trade liberalization, rural poverty and the environment, there are several strands of ecological research and literature that are relevant to the discussion of these links including (1) ecosystem studies that analyze the interactions, dynamics and changes in natural environments; (2) natural resource management studies that look into the ecological impacts of different natural resource use practices; (3) environmental impact studies that focus on the ecological impact of specific human interventions;

(4) studies of the ecosystem-wide impacts of economic growth, for example, parts of the work done by the International Panel on Climate Change (IPCC) or the International Geosphere Biosphere Program, and more recently the Millennium Assessment that is discussed in more detail below.

In 1972, a publication called “The Limits to Growth” presented a computer simulation model of the future of the world, based on trends of increasing industrialization, rapid population growth, widespread malnutrition, depletion of non-renewable resources and a deteriorating environment (Meadows et al, 1972). The authors’ neo-Malthusian conclusion was that the system would collapse within a hundred years under such sustained stresses. The book generated a lot of criticism, including a critique of the systems dynamics framework used for the analysis and the assumptions embodied in the positive and negative feedback loops modeled. An alternative view is espoused by Kahn et al in their book, “The Next 200 Years: A Scenario for America and the World.” A more qualitative analysis, their work emphasizes the importance of continuous technological change in expanding the bounds of growth and keeping the system from collapsing.

Another way in which environmental concerns have been brought into mainstream consciousness is through the development of “green accounting” methods. The idea behind green accounting is to evaluate the environmental impacts of production and consumption and incorporate them into national income accounts. This gives a more realistic picture of the full costs of economic growth and can provide important signals about its sustainability. A seminal case study application of this methodology is “Wasting Assets: Natural Resources in the National Income Accounts” (Repetto et al, 1989). They attempted to construct green accounts for Indonesia, taking into account depletion of forests. A more



**Figure 1:**  
**The Millennium Assessment Framework**

As is clear from the framework, the ecosystem approach takes a holistic view of the environment, moving away from a purely natural resource management-based view.

up-to-date, complete and systematic description of green accounting methodology is available through the United Nations’ Handbook of National Accounting (2003). It brings together economic and environmental information in a common framework to measure the contribution of the environment to the economy and the impact of the economy on the environment.

In 2001, the Millennium Ecosystem Assessment (MA) was launched by the UN, with the purpose of gathering scientific information on the state of ecosystems around the world, examining the consequences of ecosystem change for human well-being and developing effective strategies to respond to these changes. At the heart of this research effort is the development of an inter-disciplinary framework for looking at the interplay between human activities and the ecosystems in which they are conducted. It is being undertaken at multiple

scales (local to global) and is designed to meet the assessment needs of the Convention on Biological Diversity, Convention to Combat Desertification, Ramsar Wetlands Convention and other partners in the private sector and civil society.

## GOVERNMENTS

It would be hard to describe the views of governments on trade liberalization in a concise manner, for there are as many views as there are governments. Further, the rhetoric of governments often differs from real-world policies. It would perhaps be fair to say that it has gone out of fashion for governments to publicly espouse mercantilist views of trade and protection in an international arena. That said, there are domestic political realities that make it unacceptable and/or impossible for countries to adopt completely free trade across the board.

The most important forums where governments have tabled their views on trade liberalization have been regional trade-related forums and the GATT/WTO negotiation rounds. While almost all countries approach these discussions with a free trade discourse, the most contentious interactions between governments in the North and the South have revolved around the role of the WTO in regulating trade. The collapse of the 2003 Cancún talks can be directly attributed to Southern governments’ criticisms of unfair agricultural trade practices of the North (see the Group of 21+ Agriculture-Framework Proposal).<sup>2</sup> While all governments publicly agree that trade must facilitate development (and indeed this is written into the charter of the WTO), the reality is that there is widespread disagreement about what this means in practice (see Rodrik, 2001). Apart from Agriculture, other issues that divide the North and South include intellectual property rights agreements, access to essential pharmaceutical drugs, the multilateral agreement on investment (MAI) and multilateral environmental agreements (MEAs). The dispute resolution process at the WTO is cause for particular concern by developing countries because they often lack the resources to mount an effective defense. In the past,

the political power of developed nations has often prevailed, but it is clear from Cancún that this dynamic is already changing.

A second development has been the growth of regional trade agreements and regional free-trade zones, such as NAFTA, MERCOSUR, CARICOM, the proposed South Asian free trade zone, the Middle East Free Trade Area etc. The rapidly growing Asian economies are increasingly pursuing the goal of expanding trade through regional preferential agreements that circumvent the North-South divide. How successful these regional agreements are depends entirely on the health of the economies involved. Using traditional economic arguments, gains from trade are maximized when economies with very different comparative advantages engage in trade, something that is not always guaranteed within these regional agreements.

From a political and political economy perspective there is also a discussion about whose policies are governments’ policies. For example it has been argued that governments of debt-ridden developing countries, subject to structural adjustment policies, have had little choice but to agree to the trade liberalization policies of the so-called “Washington Consensus” and the World Bank and the IMF (see Cornia et al, 1987 for a critique of structural adjustment policies in Latin America and Sub-Saharan Africa) and it is clear that both institutions have undertaken reforms in response. A fall-out from the Asian crisis of the late-1990s has been that some developing countries are more circumspect about the international free flow of capital (as opposed to goods). Malaysia’s ability to weather the crisis relatively unscathed (by pointedly ignoring the advice of the IMF) meant that many took to heart the lesson that short-term capital controls are not always bad. The intellectual credibility of this view has been enhanced by former World Bank Chief Economist, Joseph Stiglitz (see *Globalization and its Discontents*, 2002). This moves one away from the orthodoxy that liberalization is a goal in itself; rather development (or growth) is the goal and liberalization simply one possible tool of attaining it.

Governments in most developing countries have also placed a strong emphasis on poverty reduction policies, at

least in theory. These policies are often driven by more general policies to promote growth with a lesser emphasis on issues of income inequality. However, rising income inequality can bring with it social unrest and disincentives for productivity. Governments are thus increasingly sensitive to issues of income distribution. Key elements of pro-poor growth strategies include removal of policy and institutional biases against the poor, as well as different forms of financial assistance geared to helping the poor take advantage of economic opportunities. A recent article by Ferro et al outlines a pro-poor growth strategy for India that emphasizes creation of a favorable investment climate and empowerment of the poor through improved access to essential social services (Ferro, Rosenblatt and Stern, 2002). The main constraint of such pro-poor policies is often budgetary resources, especially in the highly-indebted countries of Africa. Similarly, in many developing countries, the environmental consequences of economic growth are often ignored or postponed until a time when sufficient resources are available.

## NGOS AND CIVIL SOCIETY GROUPS

Many NGOs and civil society groups regard trade liberalization skeptically. They view the process of forming trade links and trade agreements as characterized by grossly unequal power positions of national governments, particularly between the developed and developing world. As such, existing trade outcomes are seen as fundamentally unjust and not in the interests of sustainable development. "By promoting the "free trade" agenda of multinational corporations above the interests of local communities, working families, and the environment, the WTO has systematically undermined democracy around the world." (From the fact sheet on the WTO at the Global Exchange website).<sup>3</sup> These arguments are also often subsumed within a general critique of globalization.

Different NGOs critique trade liberalization from different perspectives—economic, environmental, social justice, political or some combination of these. However, especially in the South, many NGOs have realized that they often have shared

goals that can be enhanced by joining cause and applying their combined leverage to international agencies and governments (Nelson and Dorsey, 2003). For example, see Sierra Club, 2000, for a description of a joint campaign with Amnesty International to protect the human rights of environmental advocates.

In recent years, the "anti-globalization" movement has gained significant momentum, with support from civil society in both the North and the South. A term as broad as "anti-globalization" would be easy to dismiss because of its lack of nuance. Indeed, anti-globalization protests like the one in Seattle during the 1999 WTO meetings attract groups with as different a mandate as the AFL-CIO and the Rainforest Action Network. A movement so potent and popular is worth examining more closely. The World Social Forum held in Mumbai in January 2004, for example, was an occasion for a gathering of a very diverse set of NGOs devoted to issues of social justice, including fair trade and sustainable development. Amartya Sen argues that in fact the real target of criticism is inequality, both international and intra-national, and the perceived role that globalization plays in deepening the schism between the haves and have-nots (Sen, 2002). Thus, rather than anti-globalization, some have come to prefer the term "movement for global justice", using slogans such as "Another world is possible."

In the run-up to the World Summit on Sustainable Development (WSSD) meeting in Johannesburg in 2002, several NGOs published position papers on the issues of trade, development and the environment.<sup>4</sup> (See, for example, Borregard et al, 2002; Killeen, 2002; Reitbergen, 2002 and RING Alliance, 2003.) The key theme that emerges from these papers is that there is a need for an international trading system that contributes to sustainable development, rather than the current trade policy that tends to represent only narrow commercial interests. This requires a democratic process of negotiation that safeguards social equity and environmental protection. But rather than simply taking an anti-liberalization stance, developing countries should pursue a more just trade regime that will bring development benefits. Of particular importance are the issues of agricultural

subsidies, safeguarding biodiversity, conducting Sustainability Impact Assessments and implementing a system of payment for environmental goods and services that will create appropriate incentives for their preservation by poor rural communities.

The NGOs' trade agenda has been shaped by criticism of the WTO and international trade rules. The WTO meetings in Cancún in 2003 were an occasion for a sharp exchange of ideas on the subject of unfair trade practices as detailed in the Oxfam, 2003, briefing paper. Oxfam has launched an entire campaign devoted to fair trade issues called Make Trade Fair.<sup>5</sup> In a detailed report published in 2002 (Oxfam, 2002), which launched the campaign, the organization makes its case for promoting a "fuller and fairer sharing of the enormous benefits from trade," without destroying the global market economy. At the heart of their case is a call for broad institutional and organizational reform that would truly take into account the development and poverty reduction needs of developing countries. A statistic often cited from the report is that the cost of tariff barriers faced by developing countries trying to export to developed countries is \$100 billion a year, twice as much as they receive in aid (Oxfam, 2002, p. 5.) The report also criticizes the conditionality requirements of the World Bank and the IMF and the power exercised by transnational corporations.

Friends of the Earth International (FoEI) is another NGO that has critiqued the world trade system and in particular criticized the WTO for its lack of transparency and democracy and its power structure. To explore their perspective further, please refer to their on-line publication, The Citizen's Guide to Trade, Environment and Sustainability.

NGOs have also been involved in initiatives to make private corporations and multinational firms more accountable for their business practices. Corporate Watch<sup>6</sup> is an organization that maintains an on-line database of corporations with information about their business strategies, operations, financial status and environmental and social record. Another such organization is The Multinational Monitor,<sup>7</sup> which maintains information about corporate activity in the Third World, focusing on the export of hazardous substances, worker

health and safety, labor union issues and the environment. The Global Reporting Initiative (GRI)<sup>8</sup> has developed a common framework for business accounting practices that includes environmental and social dimensions. Through a multi-stakeholder process, GRI has developed Sustainability Reporting Guidelines that have already been adopted by 418 organizations in 43 countries.

Criticisms leveled at the current international trade regime from NGOs have also led to much thoughtful discussion and research on the importance of strong institutions and governance structures in formulating and implementing good development policies. Adger, et al, 2002, provide an inter-disciplinary approach to examining issues of environmental governance. They seek to identify legitimate and context-specific institutional solutions capable of producing equitable, efficient, effective and legitimate outcomes. They show the linkages between local and global sustainability, the multi-level nature of environmental governance and collective action and the nature of tradeoffs between the objectives of equity, efficiency, effectiveness and legitimacy.

Developmental NGOs have also become increasingly sophisticated in their use of the language of economics to develop solutions to poverty and challenge the status quo. An example of this is the spurt in growth of micro-credit schemes, which expand the concept of collateral on loans to include social collateral. The Grameen Bank<sup>9</sup> was the original program that started this wave. The idea for Grameen was conceived of by Mohammad Yunus, an economics university professor in Dhaka. In 1974, when Bangladesh was in the grip of a severe famine, he undertook some field surveys in the village of Jobra. He discovered that the poor, especially women, were only able to access credit at usurious rates and often a very small loan was enough to start them on a path to economic freedom. From this seemingly simple insight, the highly successful micro-credit revolution was started (Yunus, 1998).

In the mid-1990s, a group of organizations in the NGO community adopted a new paradigm of development: the "human rights framework" (See the Methodology section for more details). Among these organizations are Oxfam, Care

International, Save the Children, Food First, Amnesty International and others. UNICEF, UNDP and some other international development agencies have also adopted human rights standards as a measure of progress. This is a fundamental challenge to the traditional market-based approach to development (Nelson and Dorsey, 2003).

The role NGOs play in influencing the debate over development has also faced some critique. A fundamental criticism is that NGOs tend to become self-perpetuating, moving from an agenda of eradicating poverty (or environmental degradation or social injustice) to a goal of just continuing to exist (Cameron, 2000). The multiple goals pursued by some NGOs can dilute their purpose and much-vaunted partnerships between NGOs often amount to empty words (Malhotra, 1997). NGOs are not democratically elected bodies and are thus not answerable to the constituents they claim to serve (Van Tuijl, 2000.) They are also vulnerable to being co-opted by the state or commercialized by the private sector, moving away from the civil society vertex (Cameron, 2000).

## INDIGENOUS PEOPLES

In the last two decades there has been a growing opportunity for indigenous communities to have a global platform to state their concerns (Conklin, 1995). At the Cancún meetings in Mexico in 2003, The Declaration of Indigenous Peoples delivered a strong critique of the prevailing economic development trends and their main international leverages such as the WTO agreements and the structural adjustment policies of the World Bank and IMF. The list of complaints included: Loss of livelihoods due to dumping of subsidized agricultural products from the North, contamination from genetically modified varieties of plants, high agricultural subsidies in the North, a drop in commodity terms of trade, environmental degradation caused by extractive industries, militarization of native lands, displacement and degradation caused by large infrastructure development, bio-patenting of native species by large multinationals, high pharmaceutical prices, privatization of basic needs provision such as water and energy and the

undermining of international and national laws that protect the rights of indigenous peoples.

The International Forum on Globalization (IFG) has a program devoted to highlighting the negative impacts of globalization on indigenous peoples. According to the IFG, "The impact of globalization is strongest on these populations perhaps more than any other because these communities have no voice and are therefore easily swept aside by the invisible hand of the market and its proponents".<sup>10</sup> It has assembled a map of some of the negative impacts on communities throughout the world and across the many sectors including oil, dams, biopiracy, logging, militarization, and industrial agriculture. The map is available at: <http://www.ifg.org/programs/indig/IFGmap.pdf>

The Tebtebba Foundation,<sup>11</sup> established in 1996, has a mission of research and advocacy on behalf of the indigenous peoples of the world. They have published briefing papers on subjects such as TRIPS and Indigenous Peoples (Tauli-Corpuz, 1999), on Indigenous Peoples, Extractive Industries and the World Bank, Sustainable Energy and Indigenous Peoples (Chavez, 2001), as well as a journal (Indigenous Perspectives) and a magazine (Tebtebba).

The Kimberly Declaration of Indigenous Peoples (2002) presented on the occasion of the International Indigenous Peoples Summit on Sustainable Development states that:

*Economic globalization constitutes one of the main obstacles for the recognition of the rights of Indigenous Peoples. Transnational corporations and industrialized countries impose their global agenda on the negotiations and agreements of the United Nations system, the World Bank, the International Monetary Fund, the World Trade Organization and other bodies which reduce the rights enshrined in national constitutions and in international conventions and agreements.*

Some might regard this view of globalization and trade liberalization as an unmitigated evil in the lives of indigenous populations as extreme. The reality can be more complex. Openness can bring with it some undeniable good, such as

access to health care, sanitation, new forms of knowledge and the opportunity for interacting with a wider world.

Globalization of communication has itself allowed indigenous peoples around the world to organize and present their views to a wider audience. The idealized view of the lives of indigenous people as somehow simpler, purer and better might not correspond with realities on the ground. What is certainly true is that globalization is a juggernaut and once a community opens up (or is forced to open up) to the world it is near impossible to turn back the clock.

The most troublesome aspect of this, as perceived by indigenous community advocates, is that poorer communities often do not get to make an active choice about whether or not they want to embrace globalization; it is often forced upon them by policy decisions made at a distance without regard to local impacts. Trade liberalization can destroy their traditional forms of livelihood overnight, leaving them with few options. This has been the case particularly in the agricultural sector and the forestry sector. Large-scale industrial agriculture is increasingly becoming the dominant model, as is industrial logging. This leaves little room for traditional methods or the possibility of multiple uses of resources (for example, extraction of non-timber products from forests). Often, the very poor are a marginalized group in society and their needs are not considered politically important.

The history of peasant and farmers' movements to fight for their rights is a long and feisty one. It includes examples such as Indian farmers of the Karnataka State Farmers Association protesting the bio-patenting of neem by W. R. Grace; the Via Campesina (Peasant Road) network which coordinates Central American, Canadian and European activists; and the International Federation of Agricultural Producers (IFAP) which has a network of affiliates in Africa. For a brief history and overview of peasant movements world-wide, please refer to Kaldor et al (eds.), 2003, chapter 8.

## THE PRIVATE SECTOR

Private entrepreneurship is often described as the engine of growth in an economy. The private sector has largely supported trade liberalization due to the perceived gains from trade including access to global supply chains, access to bigger consumer markets, access to a larger pool of qualified labor, access to financial capital, access to newer technologies and other opportunities for expanding profits. However, sometimes a loss of competitiveness and the elimination of entire sectors of an economy due to cheaper foreign costs of production lead to private sector calls for increased protectionism.

The International Chamber of Commerce makes its case for globalization by stating its many benefits, the first and foremost of which is the benefit to consumers of the free flow of goods, services, capital and knowledge. In its brief on globalization (ICC, 2000), it also highlights the following advantages:

- An upward spiral of world-wide job creation and increased efficiency
- A rules-based system of trade, of which the WTO is an embodiment
- While not a cure for poverty, trade does help raise living standards in developing countries
- A more stable financial market, except in cases where there is a lack of banking supervision or fiscal responsibility of governments
- While not a solution for environmental problems, trade can create growth which can then fund environmental priorities. Also, trade facilitates the transfer of environmentally efficient technologies and best practices.
- Trade agreements can be a vehicle for supporting labor standards and human rights

While emphasizing that developing countries must adopt policies aimed at providing better government, reinforcing macroeconomic stability, liberalizing their economies and



creating fair tax structures, the brief also states that the international community needs to act to reduce the debt burden of the poorest countries and to improve market access for their exports. In principle, the ICC supports the position of developing countries that the impediments to agricultural exports from developing countries to developed countries (such as export subsidies, denial of market access and domestic price supports) must be removed (ICC, 2004). It also emphasizes the importance of upholding the TRIMS and TRIPS agreements.

Many NGOs and civil society groups might take strong issue with the relentlessly positive view of globalization and trade liberalization put forward by the ICC, but there has also been a move toward accepting the main elements of the argument while insisting on a level of corporate responsibility. An example of this is the Global Reporting Initiative (GRI, 2002), which has developed a framework of reporting guidelines on environmental and social concerns related to corporate activities, modeled on existing financial accounting requirements. The idea of “Corporate Citizenship” is strengthened by consumer awareness campaigns such as TransFair’s campaign on fairly traded coffee. Max Havelaar, a Swiss Foundation, also has a program of providing fair market access to producers in the South and certifying products with the “fair trade” label in the North. A similar trend exists in the investment world, where now even large mainstream investment houses provide their clients the possibility for “socially responsible” or “green” investing.

A wave of privatization has accompanied the current trend toward trade liberalization (not entirely a coincidence, since both features are integral to World Bank and IMF structural adjustment and conditionality policies). This has extended to goods that have traditionally been in the state or public domain such as provision of water, energy and rail transport. The TRIPS provisions in the WTO agreements have also been controversial in that they have created opportunities for large multi-nationals to patent genetic resources that have traditionally been in the public domain. A scathing denouncement of such practices is contained in *Biopiracy: The Plunder of Nature and Knowledge* (Shiva, 1997).

## POLICY RESEARCH INSTITUTIONS AND THINK-TANKS

Research institutions and think-tanks express opinions across the spectrum, with their thematic focus and policy agenda varying according to their pool of resources and their constituency. Their focus spans the gamut from economics to the environment and from human rights to neoliberal causes. For example, as a counterpoint to the sustainable development agenda of the NGO community, Jerry Taylor of the Cato Institute makes the argument that the current process of development is quite sustainable and any alternative path would be more expensive and detrimental to the welfare of future generations. In his view, sustainable development as defined at the WSSD is a strong impediment to economic growth. “The current Western system of free markets, property rights and the rule of law is in fact the best hope for environmentally sustainable development.” (Taylor, 2002).

The World Resources Institute (WRI) has developed a strong research agenda devoted to issues of environmental governance. Their latest report “*World Resources 2002-2004: Decisions for the Earth: Balance, Voice and Power*,” highlights the importance of institutional reform in ensuring environmental sustainability and assesses the state of governance structures world-wide. They also lay out the role that civil society can play in improving accountability and access to information, as well as the responsibilities of the private sector.

## THE WORLD BANK <sup>12</sup>

For the World Bank and several associated development institutions, the relationship between trade, poverty reduction and the sustainable use of natural resources is complex. In the long run, there is strong evidence that countries pursue better stewardship of the environment as incomes increase, although production growth places claims on these same resources (Dean, 1999). In turn, trade liberalization can stimulate growth, leading to both short-run claims on the environment and long-run improved stewardship. At the same time, existing agricultural policies that subsidize production or input use can generate adverse environmental consequences which could be reversed with trade liberalization (Humphreys, van Bueren and Stoeckel, 2003.) The failure of governments to provide adequately for environmental assets (or other assets not readily supplied by markets) is largely attributed to missing or poorly functioning institutions.<sup>13</sup> One result is that environmental outcomes associated with growth, whether trade related or not, greatly depend on domestic regulatory policy and related institutions (World Bank, 1999).

The practical consequence has been an approach that promotes trade liberalization and market reliant mechanisms, while at the same time promoting institutions to address market limitations.<sup>14</sup> These themes are apparent in the Bank’s lending for specific development projects, and also in its policy advocacy. The adverse environmental impacts of current agricultural policies in OECD countries, along with the negative impacts on developing countries, are evoked by these organizations in their support of global trade reforms under the auspices of the WTO (Ingco and Nash, 2004)

The Bank’s project lending reflects its underlying pro-growth strategy, but is tempered by a set of ten environmental and social safeguard policies that assess potential risks to the environment and the poor.<sup>15</sup> Moreover, mechanisms to promote social safety nets are advocated in addition to market-based policies.<sup>16</sup> The Bank’s general advocacy for market-based policies is also extended to traditional environmental problems—for example, making use of markets to

reduce pollution,<sup>17</sup> combat global warming,<sup>18</sup> or price (and conserve) scarce water resources.<sup>19</sup>

The Bank views itself as an advocate for the poor and its trade and environmental policies should be seen in that light. This results generally in support for environmental safeguards, since there is a prevalent view that the poor rely disproportionately on a sustainable environment and also suffer most from pollution, climate change and related environmental problems. However, protecting environmental resources in itself is not the overriding strategic goal for the World Bank. Instead the World Bank promotes finding sustainable ways to harness the environment to benefit the poor.<sup>20</sup>

The World Bank is a strong advocate of trade liberalization because of what it views as a strong link between open markets and growth.<sup>21</sup> Generally however, the Bank tends to view the types of problems raised by critics of trade liberalization and globalization as symptomatic of larger problems that should be addressed through institutional development,<sup>22</sup> rather than by fighting economic forces for globalization. The types and scale of institutions advocated by the Bank and supported with World Bank lending depends upon the type of problem addressed. This sometimes takes the form of drafting appropriate domestic laws and regulations, or finding ways to adequately fund and enforce existing regulations.<sup>23</sup> It can also take the form of activities on an international or global level. For example, the Bank co-manages the Global Environmental Facility,<sup>24</sup> a mechanism for providing grants to address global environmental problems. In turn, the GEF finances country-specific projects, sometimes managed by World Bank staff. In some cases, the problems are transnational and Bank support is provided for international efforts and organizations, such as the Convention to Combat Desertification<sup>25</sup> and the International Plant Genetic Resources Institute.<sup>26</sup>

## WWF<sup>27</sup>

There are few WWF documents that explicitly discuss the three-way interactions between trade liberalization, rural poverty and the environment. On the other hand, the WWF has said and/or researched quite a lot regarding (1) trade and the environment, (2) rural poverty and the environment and (3) the impact of economic development (and particularly of structural adjustment) on rural environments and communities. What has been said and researched encompasses different lengths and depths, including

- Short public statements many times developed and released in partnership with other NGOs, e.g. WWF et al, 1998 and the Open Letter by WWF-International et al, demanding reforms to WTO procedures;
- Periodic reporting on permanent or sporadic activities, e.g. CITES-TRAFFIC, Forest Stewardship Council and Gonzalez, 1996-98.
- Short reports produced either by WWF staff or consultants to address in more depth issues of interest to some of the WWF network members, e.g. Hampton, 2001; IISD-WWF, 2001; Iannariello et al, 2000; Insausti, 2001; Juda and Richardson, 2001, McNally, 2001; Nadal, 2000 and Zarsky and Gallagher, 2003.
- Reports, books and documents that are part of major long-term research and/or policy development programs, e.g. Gutman, 2001; Perrin, 1998; Reed, 1996 and 2001; Ward, 1996; Woods, 1998.

The principal lines of WWF thinking in this field can be summarized as follows:

- **On trade, international trade, trade liberalization and its impact on the environment:** The overall WWF position would be “It is O.K., but there should be regulations in place to control the possible “bads” and pro-active measures to

encourage the possible “goods.” An example of WWF stance for regulations is its 30+ years of involvement in the enforcement of the 1973 Convention on International Trade of Endangered Species or CITES (refer to the bibliography for information on WWF work for CITES and the related TRAFFIC program). An example of WWF’s stance is its work to develop markets for environmentally sustainable products (see the bibliography section in the website of the Forest Stewardship Council, one of the most successful schemes of wood certification).

- **On the WTO:** During the last 15 years, WWF-International and other Europe based WWF programs have challenged the WTO, demanding among other issues, (1) that WTO regimes do not overrule international environmental agreements (Ward, 1996); (2) that trade agreements be subject to an assessment of their environmental and social impact or environmental sustainability (see Perrin, 1998); (3) reforms to the governance structure of WTO (see WWF et al, 1998 and WWF et al, Open Letter); (4) that WTO should not include negotiations on international rules for capital and services (McNally, 2001).
- **On regional trade agreements and rules:** WWF-EPO, WWF-International and other WWF country programs in Europe and North America have engaged with the international trade policies of the EU, USA and NAFTA, regarding a variety of issues like (1) supporting international trade in sustainably produced goods (see Insausti, 2001 and Juda, 2001); (2) questioning the undesirable social and environmental impacts of NAFTA (see IISD-WWF, 2001 and Nadal, 2000) or (3) questioning USA and EU agricultural and fishery subsidies (see Schorr, 2000).

- **On rural poverty and the environment:** WWF-MPO has conducted several multi-year, multi-country research and action programs in this field (some of them ongoing), with the goal of improving both the livelihoods of the rural poor and the conservation of the environment. Their policy recommendations focus on (1) increasing the rural poor’s

access and control of their natural resource base, (2) increasing rural communities’ opportunities to use those resource sustainably, including taking advantage of international trade opportunities, (3) acknowledging and rewarding the role of the rural poor as stewards of the world’s rural environment and (4) strengthening the social capital of rural communities (see Gutman, 2001 and Reed, 2001).

- **On economic development (and particularly on structural adjustment) and their impacts on rural environments and communities:** WWF-MPO conducted several multi-year, multi-country research projects focusing on the social and environmental costs of adjustment programs. The studies concluded that those social and environmental costs could be substantial. Social costs escalated when the institutions, governance and policies accompanying the adjustment were biased against the poor. The environment, particularly in natural resource based economies, was prone to suffer when economic incentives and institutional policies accompanying the adjustment favored short-term gains at the cost of long-term sustainability (see Woods, 1998).

## UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)

The mission of the UNEP is to find ways to protect environmental and ecosystem resources while enabling people to harness these resources for development. It is also one of three implementing agencies of the Global Environment Facility (GEF), the other two being the World Bank and the United Nations Development Programme (UNDP).

The Global Environmental Outlook (GEO) is a periodic publication of UNEP that was initiated in response to the environmental reporting requirements of Agenda 21 and seeks to provide a comprehensive picture of the state of the global environment. It includes indicators on the atmosphere, natural disasters, forests, biodiversity, coastal and marine resources, freshwater and global environmental issues assessed at regional, sub-regional and national levels. UNEP

also publishes an annual report which focuses on different themes of importance, for example, sustainable production and consumption, adequate freshwater, clean energy, health and the environment and the value of biodiversity.

Together with IISD, UNEP has published a handbook of environment and trade that is a useful compendium of the linkages between trade and the environment, including information on various trade agreements, environmental accords and relevant institutions (UNEP, 2000). It is also engaged in a capacity building exercise (together with UNCTAD) in helping developing countries better integrate their trade, environment and development policies.

UNEP is also the secretariat for major biodiversity conventions such as the Convention on International Trade of Endangered Species (CITES) and the Convention on Migratory Species. Both conventions have achieved significant successes in implementing protective agreements through international cooperation. Another issue of increasing concern that raises conflicts between trade rules and biodiversity concerns is the subject of genetically modified organisms (GMOs). This issue is covered under the Convention on Biological Diversity’s Cartagena Protocol on Biosafety that came into effect in September 2003. The Protocol will provide a framework for regulating transfer and use of such emerging technologies in a way that is transparent and provides adequate safeguards to countries.

Finally, in the context of the United Nations as a whole, it is worth mentioning the relevance of the Millennium Development Goals (MDGs)<sup>28</sup> for several aspects of the trade, poverty and environment debate. In particular, Goal 7 (Ensuring environmental sustainability) and Goal 8 (Building a global partnership for development) are particularly apt and fit directly with the most important goal, Goal 1, which is aimed at reducing poverty and hunger.

### III. CROSS-CUTTING THEMES

#### LITERARY ACTIVISTS

Literary activists have long played a very important role in giving voice to and shaping popular movements. Due to a lack of space, we mention just two here, who have been particularly influential in bringing attention to the plight of the poor and their intimate connection to the environment: Ken Saro-Wiwa and Arundhati Roy.

Ken Saro-Wiwa, a Nigerian writer, playwright and environmental and human rights activist, was a strong critic of the environmental havoc wrought on the Niger Delta by the Royal Dutch Shell Oil Company, British Petroleum and other oil multi-nationals. He founded the Movement for the Survival of the Ogoni People (MOSOP). His efforts to oppose the corrupt military dictatorship in Nigeria resulted in his execution in 1995. For a sample of his writing, see *A Forest of Flowers: Short Stories* (1986) and his closing statement to the Nigerian military tribunal that condemned him to death.<sup>29</sup>

Arundhati Roy, a writer and a political and environmental activist, has been prominently associated with the Narmada Bachao Andolan, a peaceful movement opposed to the displacement of the poor and the indigenous people by the building of large dams such as the proposed Sardar Sarovar Dam in India. She has written extensively on the issue and has also faced legal battles with politicians who support the project. For a sample of her writing, see Roy, 1999.

While different disciplines bring their own particular viewpoints to the debate on trade, poverty and the environment, there are some broad issues addressed by several stakeholders. Due to their importance, it is worth exploring them in greater detail.

#### THE ROLE OF THE WORLD TRADE ORGANIZATION (WTO)

The WTO is the global body charged with regulating international trade between nations. It is a forum for international trade negotiations, monitoring of trade agreements and handling of trade disputes. The WTO arose in 1995 as a result of the Uruguay Round of negotiations and as a successor to GATT. It is currently comprised of 146 member countries, over 70% of which are developing countries. The mandate of the WTO is to expand trade by lowering trade barriers and making trade's policy frameworks more predictable. But it is important to note that the goal of this free trade is explicitly "to improve the welfare of the peoples of the member countries" (from the WTO Charter). Because of its key role in fostering the world's globalization trend, the WTO has become the lightning rod for controversies regarding trade. Every time member countries assemble for a round of talks, one can be sure that a very diverse group of people and organizations will make their voices heard either formally at the talks or in the streets outside in protest (Sen, 2002).

One of the fundamental issues of contention is whether or not the WTO system is fair to developing countries and whether it favors richer, more powerful nations. On one hand, the fact that all agreements are negotiated and the same rules applied to all argues for the democratic nature of the institution. But frequently developing countries have expressed their dissatisfaction with the process of negotiation and dispute resolution and the unequal power balance that exists within the WTO. The Doha Development Round in November 2001 put on the agenda a number of issues of importance to developing countries, including agricultural subsidies in developed countries, lack of market access,

trade-related aspects of intellectual property rights (TRIPS) particularly with respect to access to cheaper generic medicines, trade-related investment measures (TRIMS), technical cooperation and delays in implementing some aspects of the WTO rules. However, subsequent talks in Cancún in September 2003 failed to make any progress on these issues.

- **Agricultural Trade Negotiations:** The key issues for developing countries are (1) Improvements in market access, (2) Asymmetry of current WTO obligations, (3) Concessions on special treatment and (4) Protection against world price volatility (Matthews, 2001). Elimination of agricultural subsidies and tariff protection in developed countries will be a crucial part of expanding market access for the developing countries. In addition, developing countries need to drop protections against exports from other developing countries as well.
- **Dispute Resolution Process:** While the current dispute resolution process at the WTO has allowed developing countries greater access to initiating claims, compliance enforcement is still a matter of power relationships i.e. the ability to retaliate by imposing economically significant penalties (Brown, 2004).
- **Trade-related Investment Measures (TRIMS):** The TRIMS agreement currently in force (since 1995) only applies to trade in goods and prohibits countries from having barriers to foreign investment that are designed to support domestic production. It has not yet been fully phased in for all developing countries. However the European Union and the United States are pushing strongly for a new version that will also encompass services and will place limits on how governments can regulate foreign investors. For example, it will phase out "content requirements," whereby foreign investors are obliged to use a particular proportion of domestically produced goods in their production processes. Developed countries have proposed new rules under a Multi-Lateral Investment Agreement (MIA) that would allow for free entry and exit of foreign firms and require treatment on par with domestic firms on issues

such as taxes, fees etc. Developing countries will be prevented from protecting domestic industries and fostering their growth through any special concessions and could also be forced into a position of having to deregulate state-owned enterprises. These requirements have caused concern among several developing countries due to fears that domestic industries will suffer and this could lead to unemployment, as well as the loss of control over policies previously in the national domain.

- **Trade-related Intellectual Property Rights (TRIPS):** The TRIPS requirements are particularly contentious because of the public health implications and bio-patenting of genetic resources. The Doha Round confirmed that the TRIPS agreement does not and should not interfere with a country's right to take measures to protect public health, e.g. in the face of the enormous AIDS crisis. However, steps need to be taken to allow developing countries to override patent protections of pharmaceutical companies and import (or produce) cheap generic versions of drugs after January 1, 2006 when patent enforcement becomes mandatory in all developing countries. The humanitarian organization Médecins Sans Frontières (MSF) has launched a vocal campaign around these issues called the Campaign for Access to Essential Medicines.<sup>30</sup> Writing in the Journal of the American Medical Association, Bernard Pécoul et al of MSF make a plea for "humanizing the WTO Agreements" so as to allow for realistic pricing of potential drugs and funding for ambitious research in tropical pharmaceuticals (Pécoul et al, 1999).

Bio-patenting of traditional crops and seeds by large multi-nationals is seen as particularly hurtful to local farmers and to the food security of the poor. A large number of NGOs including Oxfam, ICTSD, ActionAid and WWF, have voiced their concerns on this subject. A joint publication by several NGOs (Action Aid, Berne Declaration, IATP and Misereor, 2001) details cases where the rights of poor farmers have come up against bio-patenting regulations enshrined in trade law. These include the infamous case where Rice Tec Inc. tried to patent basmati rice, a type of

rice grown in India and Pakistan for centuries, the case of a Canadian farmer whose rape field was contaminated with Monsanto's bio-patented seeds (without his consent) who was subsequently forced to make payments to Monsanto, and the increasing role of multinational companies in controlling the selling and exchange of seeds around the world. A large group of Indigenous Peoples' organizations have also issued a strong statement of concern regarding the inclusion of TRIPS in the WTO agreements, entitled "No to Patenting of Life!" (Indigenous Peoples' Statement on TRIPS, 1999).

An upcoming occasion for revisiting some of these issues related to trade and development will be the United Nations Commission on Trade and Development (UNCTAD) XI meeting in June in São Paulo, Brazil. In preparation for the meeting, the Civil Society Forum has drafted a lobbying paper which calls for a model of development that delivers justice and equity and that meets the needs of the bulk of the world's population.<sup>31</sup>

## THE ROLE OF INSTITUTIONS

"Institutions are the rules of the game of a society or more formally are the humanly-devised constraints that structure human interaction. They are composed of formal rules (statute law, common law, regulations), informal constraints (conventions, norms of behavior and self-imposed codes of conduct), and the enforcement characteristics of both." (North, 1992)

This broad definition of institutions makes it clear that they encompass more than just organizational entities. Institutions play a crucial role in enabling, or sometimes constraining, development and there can be enormous inertia in bringing about institutional change.

Recent literature on the importance of institutions includes the sub-discipline of New Institutional Economics (NIE). Economic historian Douglas North is best known for his seminal research and insights in this field. In a 1992 essay entitled, "New Institutional Economics and Development" he

states that, "The Neoclassical result of efficient markets only obtains when it is costless to transact. When it is costly to transact, institutions matter." It is in this context that we can understand the role of politics in driving economic outcomes, path dependencies and the context-specific nature of institutional change.

In his paper, "The Role of Institutions in Asian Development," Ha-Joon Chang identifies three types of institutions that are particularly important for economic development—institutions for coordination and administration, institutions for learning and innovation and institutions for economic redistribution and social cohesion. He examines their role in fueling development in Asia and argues that rather than remodeling these institutions along Western lines, any changes should be made carefully and with due regard to local conditions.

## THE POVERTY-ENVIRONMENT NEXUS

The traditional line of reasoning about the connection between poverty and the environment has been that the poor are primarily responsible for degradation of the environment as they are apt to overexploit "free" environmental resources, à la the Tragedy of the Commons (Hardin). As such, poverty alleviation and the establishment of private property rights will ensure better stewardship of resources. This storyline is somewhat simplistic. Given their immediate dependence on natural resources as a source of livelihood, and the existence of well-understood common property traditions in rural societies, it could in fact be argued that the rural poor have a strong conservation instinct. For example, Cavendish (2000) uses rural household survey data collected in Zimbabwe to show that environmental resources make a significant contribution to rural incomes, providing approximately 40% of the income of poorer households (although richer households use a larger quantity of environmental resources overall).

Duraiappah (1998) lays out the "complex web of factors" that describe the poverty-environment nexus. He postulates six possible relationships: (1) Exogenous poverty, i.e. poverty due to non-environmental causes, leads to environmental

degradation, (2) Power, wealth and greed cause environmental degradation, (3) Institutional failure causes environmental degradation, (4) Market failure causes environmental degradation, (5) Environmental degradation causes poverty and (6) Endogenous poverty, i.e. poverty caused by environmental factors, causes environmental degradation. In each case, the policy response would be quite different.

The six relationships were then used to analyze four pressing environmental problems in developing countries—degradation of forests, water, land and air—through a review of the literature. Overall, he finds that a combination of (2) and (5) seems to be at play most prominently and "activities by the rich and powerful were the primary contributing factors forcing groups living at the margins into poverty." Other possible factors are a combination of (3), (4) and (5), and also (6). Equally important, the analysis highlights the importance of feedback loops in the poverty-environment nexus.

Reardon and Vosti (1995) argue that there are several types of links between poverty and the environment, depending on what type of poverty (lack of different types of natural and man-made assets and income flows derived from them) and what component of the environment (soil, water, air, biodiversity, etc.) are under consideration. In addition, they coin the term "conservation-investment poverty" to describe a lack of resources available to devote to conservation and the maintenance of a healthy natural resource base.

The expansion of land under cultivation, due to population pressures or loss of soil productivity, puts pressure on the environment. Boserup (1965) outlines two paths to agricultural intensification—labor-led and capital-led. The former path can lead to unsustainable use of land and over time a reduction in soil productivity. However, while practices like slash-and-burn and shifting agriculture can be harmful to the environment, they do not approach the scale of destruction caused by large capital-intensive industries like industrial logging or mining.

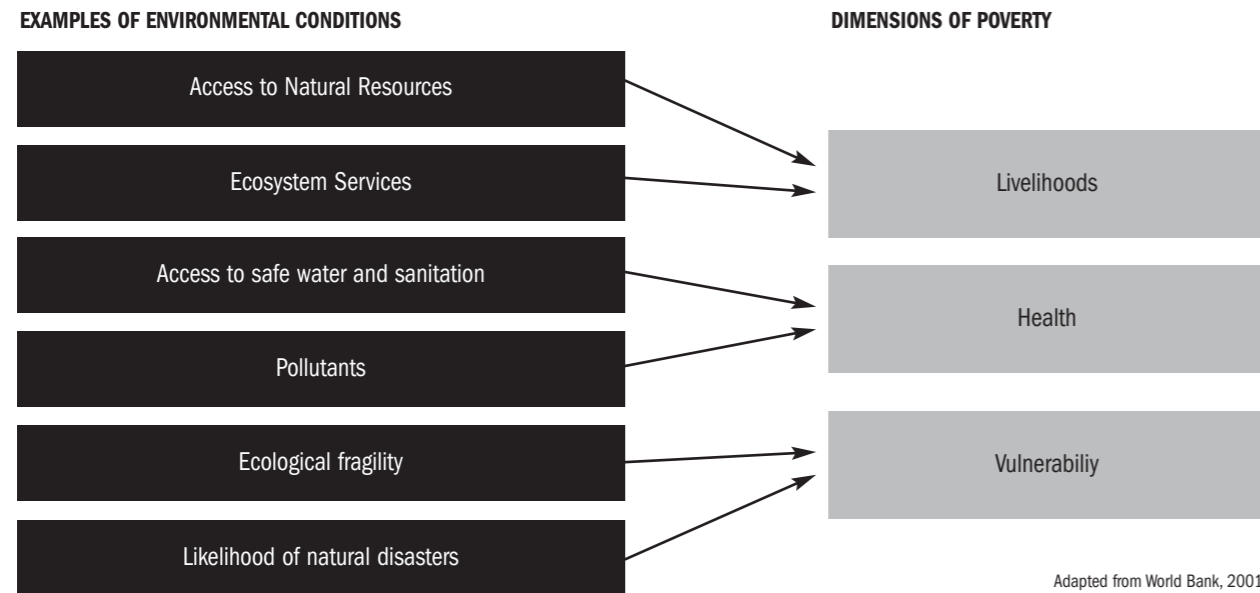
Poorer people are also more vulnerable to environmental degradation because they have fewer options to diversify their livelihoods and a lesser ability to "buy" protection from natural disasters. This issue has come into sharp focus in the

debate about the impact of climate change on developing countries that do not have resources for adaptation and/or mitigation.

Many development agencies are now advocating the view that environmental and poverty issues should be addressed jointly. For example, a discussion paper prepared for the WSSD, co-written by DFID, the EC, UNDP and the World Bank, states that: "Poverty and environmental issues need to be integrated into strategic planning frameworks such as national poverty reduction strategies, which should ideally become national sustainable development strategies." (DFID et al, 2002).

Another paper by the World Bank explores empirical evidence for the poverty-environment nexus in Cambodia, Lao PDR and Vietnam (Dasgupta et al, 2002). The authors analyze data on deforestation, soil degradation, indoor air pollution, contaminated water and sewage and outdoor air pollution and map the severity of these problems against poverty maps for each country at the district level. They find that the spatial associations are strongest for indoor air pollution and water contamination in Cambodia, all five environmental problems in Lao PDR and weak for all five problems in Vietnam. Due to a lack of data, it was not possible to conduct the analysis at a household or community level, which might have been more meaningful. Also, it is not possible to establish causal links between poverty and the environment through this research. Finally, the time dimension of the linkages is not captured by doing these sorts of spatial analyses at one point in time.

**Figure 2:**  
**Environmental Dimensions of Poverty:**  
 A diagrammatic representation of environmental dimensions of poverty, from the World Bank, is shown below:



## EQUITY AND GROWTH

Is equity a necessary component of economic growth and development or is it simply a normative goal (as described in Econ 101 textbooks)? This question has been visited in various forms by academics, NGOs, governments and international donor agencies.

The debate over the links between equity and growth centers around different models of growth and whether equity is a key component of sustained economic growth. In 1955, economist Simon Kuznets hypothesized an inverted U-shaped relationship between income inequality and economic growth. He based this hypothesis on time-series data from England, the United States and Germany. His rationale was that initially countries start out as agrarian economies with a high degree of income inequality and as they grow they move to higher productivity sectors which tend to exhibit lower income inequalities. This stylized fact remained the

dominant view of income distribution until recent empirical studies using data from many more countries showed that the Kuznets hypothesis is violated in 90% of the cases (see, for example, Deininger and Squire, 1998).

Recent studies show that the relationship between growth and income inequality can also work in the other direction, i.e. a high degree of inequality can lead to lower rates of growth. Alesina and Perotti (1996) examine a panel of 71 countries over the period 1960–1985 and find that income inequality can reduce growth because it leads to sociopolitical instability and a negative environment for investment. Roland Bénabou (1996) uses a political economy framework to show that it is not just income inequality but also the relative distribution of power that can impede growth.

The empirical evidence on trends in global equity, and in particular the link between growth and poverty reduction, is controversial. In addition to data from the National Accounts of countries, there are now several household surveys con-

ducted to determine consumption patterns and impute changes in poverty rates over time. For example, the World Bank conducts a series of Living Standards Surveys around the world and is charged with tracking poverty rates for the Millennium Development Goals. Unfortunately, there are large divergences between poverty measures calculated from national income accounts and those calculated from surveys, and there is no *a priori* reason to expect either to be more accurate. The serious concerns with the collection, comparison and interpretation of this data are described in Deaton, 2004 and Wade, 2003.

The “Rights” approach to development, championed by several NGOs, places equity as a core goal of development. In discussing issues such as access to water, nutrition, health care, education and compensation for labor, they argue that equity is not simply a means for advancing human well-being, but a necessary component of it.

## WHAT IS THE “ENVIRONMENT”?

From the several economics studies cited in the Voices section, it is clear that economists tend to regard the “environment” as a discrete good and analyze environmental effects in terms of “pollution” (usually using data on pollutants like SO<sub>2</sub>, CO<sub>2</sub>, NO<sub>x</sub>, TSPs and other commonly tracked pollutants). See, for example, the Copeland and Taylor (2004) paper which reviews the debate on the link between trade liberalization and the environment. This view leads to a framework where an economically optimal level of pollution is arrived at by combining curves for marginal abatement cost and marginal benefits of reduction for a particular pollutant, generated through a particular production process. The curves are usually depicted as continuous and monotonic. Environmental pollution is treated as an externality cost that can be internalized through placing a value on the resource, e.g. clean air or clean water, in question.

This is in contrast to the more holistic view, advanced by ecologists, of the environment as a complex ecosystem with interwoven, dependent components, exhibiting feedback

loops, and threshold and cumulative effects. Rather than seeing simple relationships between human activity and environmental outcomes, it is likely that there are both spatial and temporal gaps in these relationships.

From a policy standpoint, these differences in conceptualization are not merely academic. They have a big impact on how strategies to conserve the environment and its functions are crafted and also who gets to decide the formulation of these policies. Clark (1995) points out that there has been a crucial lack of communication between economists and ecologists in discussing what sustainable development consists of. He argues that this is the reason that the World Commission on Environment and Development in 1987<sup>32</sup> and the UN Conference on Environment and Development in 1992 adopted the notion that economic growth and environmental protection are easily compatible without really testing the intellectual strength of the argument. While the rhetoric of sustainable development has now reached the level of cliché, in the policy arena this still means simply growth in GDP (or some income/consumption measure). In its current form, the term has become so bankrupt that it is easily employed to personal effect by all players, from the most conservative to the most left-leaning. He argues forcefully that, “Biologists, atmospheric specialists and experts in public health should make their knowledge accessible and useful in local and state forums,” to prevent the co-opting of the sustainable development agenda by economists.

To understand how trade, the environment and poverty are linked, various methodologies and frameworks may be employed. A perusal of the literature reveals several that may be relevant for our case studies. In some instances the methodology used depends solely on the perspective and training of the researcher. In other instances, the methodology is chosen so as to shine light on variables of interest using an inter-disciplinary approach. Our goal is not to recommend one approach over the other but to describe several that are legitimate. For the purposes of this project, it would be preferable to employ methodologies that allow for some measure of comparability across all case studies. This will unite them as a body of work instead of having them be individual pieces of unconnected research.

In broad terms, the biggest differences in approaches lie along disciplinary lines, e.g. economics, sociology, anthropology, ecology or biology. Some methodologies place emphasis on measurement and quantification of variables, while others use descriptive, anecdotal or case study approaches. These are not necessarily mutually exclusive. Inter-disciplinary methods are often the most plastic and allow each discipline to contribute the most to the aspect of the project closest to it. For example, one might expect that measures of trade openness would be most directly available from the economics literature and ecological methods might have the most relevance for examining environmental degradation.

Below is a brief description of some common measures and methodologies that could be useful for these studies. This is, of necessity, an incomplete and idiosyncratic list. The list is separated into **Measures** related to trade, poverty and the environment, followed by a list of what may be classified as **Models or Frameworks**. This list is not meant to be exhaustive but should provide a good starting point. To obtain further detail on any methodology, please use the references provided.

## MEASURES OF TRADE LIBERALIZATION PROCESSES, POLICIES AND TRADE OPENNESS

**Trade Share of GDP:** Exports plus Imports as a share of total GDP. Trade volumes can be poor proxies for trade policies since small economies have large trade volume relative to GDP, even if their trade policies are quite restrictive, and conversely for large economies.

**Nominal Rate of Protection (NRP):** A product-specific measure of trade protection that takes into account trade barriers and measures the wedge between domestic and world prices for a specific commodity. It is defined as the percentage difference between domestic and world price, measured in the same currency units.

**Nominal Rate of Assistance (NRA):** This is more comprehensive than the NRP because it takes into account all policies that raise prices received by domestic producers. It is defined as the difference between the unit gross returns to producers (market price plus any subsidies or taxes) and the world price of a commodity, measured in the same currency units.

**Effective Rate of Protection (ERP):** The ERP also takes into account any favorable trade treatment of inputs to a commodity. It is the percentage difference between the value added per unit of output at domestic prices and the value added at world prices, measured in a common currency.

**Effective Rate of Assistance (ERA):** A more comprehensive measure than the ERP, the ERA also takes into account non-trade distortions such as domestic subsidies and taxes on inputs and outputs. It is the percentage difference between the value added per unit of output at domestic prices, measured by including assistance on all outputs and inputs, and the value added at world prices, measured in a common currency.

**Trade Barriers:** Average tariff rates, export taxes, total taxes on trade, indices of non-tariff barriers.

**Black Market Premium:** The difference between official and black market exchange rates for a currency. Should be negligible if the official rate is the free market rate.

**Trade Orientation:** Leamer's Openness index, Dollar's price distortion and variability Index (see below), Sachs and Warner's Openness index.

**Index of Real Exchange Rate Distortion:** Measures the level of protection by examining the ratio of a country's real price level of tradable goods relative to U.S. (or world) price levels. See Dollar, 1992.

**Index of Real Exchange Rate Variability:** Variation in real exchange rate over time. See Dollar, 1992.

**Measure of Outward Orientation:** A weighted average of the above two measures, constructed by David Dollar. See Dollar, 1992.

**Sachs-Warner Openness Index:** This is a zero-one dummy that takes a value of zero if an economy is closed by any one of 5 criteria. See Sachs and Warner, 1995.

**Heritage Foundation Index of Distortions in International Trade:** This is part of the Heritage Foundation/*Wall Street Journal* annual publication entitled "Index of Economic Freedom." Details for this index by country are available in an on-line searchable database (see bibliography for details).

**Aggregate Measurement of Support (AMS):** An index that measures the monetary value of total government support to a sector including all forms of subsidies.

**Collected Tariffs Ratio:** Trade tax revenues as a proportion of total trade.

**Technique, Scale and Composition Effects:** Separating the changes in pollution levels that can result from changes in trade patterns.

For discussions about measures of trade openness, please refer to Dollar, 1992, Sachs and Warner, 1995, Edwards, 1998 and Rodriguez and Rodrik, 2000.

## MEASURES OF POVERTY

Measures of poverty can be broadly classified under four approaches: the monetary, capability, social exclusion and participatory approaches (Laderchi et al, 2003). These approaches can give very different results and thus the choice of approach has implications for determining who the poor are and for poverty alleviation policies. The several different poverty measures in use can be categorized under an approach, as below:

### MONETARY APPROACHES

**Incidence of Poverty:** Establish a Poverty line and compare with household expenditures, e.g. using data from the World Bank's Living Standard Measurement Survey, to get a measure of incidence.

**Absolute Poverty:** Measured by headcounts of those living below a certain poverty line.

**Poverty Gap:** A measure of the "depth" of poverty i.e. the aggregate deficit below the poverty line of all households added together.

**Relative Poverty:** Measures of the distribution of income in an economy e.g. Gini coefficient, per household income deciles or quintiles, Theil index.

**Absolute Inequality:** The absolute difference in incomes between income groups at each end of a spectrum.

**Relative Inequality:** Ratios of individual incomes to overall mean, could also include giving different weights to income disparities at different levels.

**Rural-Urban Poverty Gap:** Measures the difference between mean incomes of urban v. rural populations. Can be used to better target rural anti-poverty programs.

### CAPABILITY APPROACHES

**Capabilities Approach to Human Development:** See Sen, 1983, 1989 and 1999 and Fukuda-Parr, 2002.

**Basic Needs Approach:** Takes into account all basic necessities including food, shelter, clothing, health, education etc. to establish a poverty baseline.

**Basic Capabilities:** This builds on the seminal work done

by Sen (see above). As defined by Nussbaum (2000) the following is a list of features essential to full human life:

**Food Poverty Line:** Based on minimum caloric intake

**Human Development Index (HDI):** See UNDP 2000.

**Human Poverty Index (HPI):** See UNDP 2000.

#### PARTICIPATORY APPROACHES

These are methods that use the input of the local community in evaluating rural poverty, rather than external evaluators.

The approach was first developed by Chambers (1994) in the form of Participatory Rural Appraisals (PRAs).

**Participatory Rural Appraisals (PRAs):** Local participants provide information on their perceptions of wealth, well-being and poverty, assets (including natural and man-made assets), coping strategies, community-based support mechanisms and long-term environmental trends (de Graft Agyarko, 1998).

**Participatory Poverty Assessments (PPAs):** These are now used widely by the World Bank as an integral part of their poverty assessments and strategies, contained within country Poverty Reduction Strategy Papers (PRSPs). The 2000–2001 World Development Report entitled *Voices of the Poor*<sup>23</sup> contained a diverse array of viewpoints of the rural poor from all over the world. It consists of three books: *Can Anyone Hear Us?*, is a collection of the views of over 40,000 poor women and men in 50 countries from the World Bank's participatory poverty assessments; *Crying Out for Change*, consists of a comparative study of 23 countries; and *From Many Lands*, looks at regional patterns and country case studies. However, some have argued that this is more an attempt to get buy-in for World Bank IMF policies, rather than to provide genuine empowerment to the poor (Laderchi, 2003, Wade, 2003).

#### SOCIAL EXCLUSION APPROACH

This approach is meant to capture the fact that some elements of the population can remain marginalized and in poverty, even under circumstances where the rest of society is thriving and a good social safety net may exist. The reasons for this are myriad and include systematic discrimina-

tion along racial, gender, age, caste or class lines, vulnerability to health problems and lack of access to educational resources or job opportunities. Also, poverty tends to be self-reinforcing among this population so that it can persist over generations. Special efforts must be made to alleviate poverty among these groups since traditional strategies might continue to leave them excluded.

#### HUMAN RIGHTS APPROACH

The Human Rights approach to poverty looks at poverty as the absence of certain basic human rights, and also that the provision of these rights is essential to empowering the poor and giving them the tools to extract themselves from poverty. Thus poverty alleviation should not be looked at as merely establishing a system of hand-outs for the poor, but guaranteeing them the rights that put their future in their own hands. A conceptual framework for integrating human rights into poverty alleviation strategies is described in a 2004 United Nations publication (UN OHCHR, 2004).

For a broad discussion on measuring poverty see Ravallion, 2003 and Deaton, 2004.

TABLE 1: FEATURES ESSENTIAL TO FULL HUMAN LIFE

1. **Life:** Normal length of life
2. **Health:** Good health, adequate nutrition and shelter
3. **Bodily integrity:** Movement; Choice in reproduction
4. **Senses:** Imagination and thought, informed by education
5. **Emotions:** Attachments
6. **Practical reason:** Critical reflection and planning life
7. **Affiliation:** Social Interaction; Protection against discrimination
8. **Other species:** Respect for and living with other species
9. **Play**
10. **Control over one's environment,** politically (choice) and materially (property)

Source: Nussbaum, 2000

## IV. METHODOLOGIES

### MEASURES OF THE STATE OF THE ENVIRONMENT AND ENVIRONMENTAL CHANGES

Environmental changes can be measured at the level of an entire ecosystem or for discrete components of it (air, water, land) and at various levels of aggregation (global, regional, national, local). They can also be measured in terms of resource extraction/use or disposal of pollutants. The status of national biological diversity can be categorized into stock variables (such as endemism, species richness), pressure variables (such as deforestation rates, annual fish catch) and response variables (such as area under conservation, investment in conservation) (Reyers et al, 1998). Finally, there are measures that refer to environmental scarcity from a human perspective or environmental management.

#### STOCK VARIABLES

**Biodiversity Index:** Measure of species richness in a discrete geographical area. For more information on biodiversity data, refer to the Global Biodiversity Information Facility (GBIF) which maintains a website at <http://www.gbif.org> and serves as a source of primary scientific biodiversity information available on the internet. The Government of Mexico's Comisión Nacional para el Conocimiento y uso de la Biodiversidad (Conabio) maintains an impressive website on biodiversity and the environment at <http://www.conabio.gob.mx>.

**National Biodiversity Risk Assessment Index (NBRAI):** An index constructed to measure national conservation performances and identify countries of critical conservation concern. For an example of a calculation of a national biodiversity risk assessment index, see Reyers et al, 1998.

**Species Endemism:** Endemism is the condition of being restricted to a particular, unique habitat. Thus species may have a high local abundance but may be restricted to a small geographical area and thus be vulnerable.

**Species Density:** The ratio of species number to size of area.

**Biological Indicator Species:** Certain species are known to be indicators of ecosystem stress (or health) due to the fact

that they are highly responsive to these stresses. For example, fish populations can be used as an indicator of stress/health of a watershed; an overabundance of macrophytes can indicate high nutrient levels in a lake while an absence could indicate excessive turbidity, salinization or herbicides. See the U.S. EPA website on biological indicators of watershed health to get a deeper understanding of this concept: <http://www.epa.gov/bioindicators/>.

For more details on biodiversity and conservation priorities, refer to the U.K. Natural History Museum website at <http://www.nhm.ac.uk/science/projects/worldmap/>

#### PRESSURE VARIABLES

Measures of water pollution (BOD, salinity, pathogen levels, PCBs, Nitrates, Phosphates)  
Deforestation rate

Annual roundwood production  
Rates of chemical input (fertilizers and pesticides) usage in agriculture

Annual withdrawals of surface and ground water  
Fish stocks and annual catch rates  
Rate of conversion of natural habitats for human use

Soil quality indices  
Rates of soil erosion  
Rates of desertification

Incidence of degradation-related calamities such as floods and droughts

Population density: The density of human populations can be assessed against the carrying capacity of the environment within which they live.

#### COMBINED STOCK AND PRESSURE VARIABLES

##### Rapid Ecosystems Assessment

**Conservation Hotspots:** Hotspots can be considered in terms of species rarity as well as species richness, and take into account both stock and pressure variables. The term is associated with the pioneering work of Norman Myers (Myers, 1988 and 1990) who identified 18 hotspots in tropical and temperate forests that are characterized by high

levels of endemic plant species and “exceptional threats of destruction.”

#### RESPONSE VARIABLES

Area of land devoted to national parks or conservation zones  
Investment in conservation  
Ratification of conservation-related treaties  
Pollution abatement expenditures  
Expenditures on environmental monitoring and enforcement

#### ENVIRONMENTAL SCARCITY AND

#### ENVIRONMENTAL MANAGEMENT MEASURES

**Public Environmental Expenditure Reviews (PEERs):** A tool developed by the World Bank to assist in environmental management. The conclusion that sustainable development and the provision of environmental assets requires appropriate institutions leads to the question of how regulatory settings should be evaluated. One side of the problem has to do with public expenditures on providing for such assets. The evolving strategy is discussed in Swanson and Lunde (2003.)

**Water Poverty Index:** Integrated assessment of water stress and scarcity, linking physical estimates of water availability with socioeconomic variables reflecting poverty. See Sullivan, 2002.

**Ecological Poverty:** defined as the lack of natural resources (quality and quantity) that are needed to sustain a productive and sustainable biomass-based economy (such as exists in most rural areas). See Agarwal and Narain, 1999.

#### Percentage of rural populations living on marginal lands

#### Time spent or distance traveled for gathering water and fuel wood

See Shyamsundar, 2002, for a description of several poverty-environment indicators.

#### DATA SOURCES

For resources on environmental indicators, please refer to: UNEP Earthscan Global Environment Outlook. Recurring publication. The latest edition is GEO 3: Past, Present and Future Perspectives. Apart from an analysis and presentation of environmental data from the past 30 years, the current edition of the publication also has a special focus on human vulnerability to environmental change and prospects for the next 30 years.

WRI's recurring publication, *World Resources*. The latest edition is World Resources 2002-2004: Decisions for the Earth: Balance, voice, and power. Previous publications are available on-line. Also, data from the latest publication can be accessed at: <http://earthtrends.wri.org/>

The World Bank Environmental Economics and Indicators Unit at:

<http://lnweb18.worldbank.org/ESSD/envext.nsf/44ByDocName/EnvironmentalIndicators>

Also, refer to the joint initiative between the International Center for Tropical Agriculture (CIAT), the United Nations Environment Programme (UNEP) and the World Bank in developing indicators for monitoring development and the environment in Latin America and the Caribbean (<http://www.ciat.cgiar.org/indicators/>).

The Trade and Environment Database (TED) contains an extensive collection of case studies (over 700 currently) on trade and the environment. It is maintained by American University. New case studies are constantly being added. See: <http://www.american.edu/TED/ted.htm>

#### MODELS OR FRAMEWORKS TO ASSESS THE ECONOMIC IMPACT OF TRADE LIBERALIZATION

**Heckscher-Ohlin-Samuelson Model:** The classic textbook exposition of a model of international trade where countries that are open to trade derive comparative advantage in commodities based on relative factor endowments and export goods that use relatively intensively their relatively abundant factors. For a description of the model, see Krugman and Obstfeld, 2002.

#### Computerized General Equilibrium (CGE) models or Applied

**General Equilibrium Models (AGE):** The modeling technique of choice for trade economists analyzing the impacts of multilateral trade under different policy assumptions. The models are able to handle very complex trading regimes and can be disaggregated to a fine level of detail. Criticisms of these models: Model results are very sensitive to underlying assumptions and closure rules so that alternative assumptions can lead to significantly differing outcomes, CGE models are not well-suited to handling real-world market frictions e.g. persistent unemployment resulting from displacement of productive sectors due to trade liberalization. Please refer to the Global Trade Analysis Project website<sup>31</sup> for information on models and datasets.

**Global Commodity Chain (GCC) analysis:** This methodology has been developed within a sociology and political economy framework of analyzing development, building on the traditions of World Systems analysis and Dependency Theory. It seeks to identify and explain how industrial commodity chains have become globalized, so that processes from mining of raw materials to various stages of production to distribution and marketing occur across national boundaries within multi-national organizations. Four dimensions of GCCs are identified: the input-output structure of the chain, the territory it covers, its governance structures and the institutional framework (local, national and international) that shape the globalization process at each stage. See Gereffi and Korzeniewicz, 1994.

#### MODELS OR FRAMEWORKS TO ASSESS THE STATE OF THE ENVIRONMENT AND ENVIRONMENTAL IMPACTS

**Integrated water resource planning:** Framework to match water demand and supply, using information about demand drivers, e.g. growth in population, economic activities requiring water etc, and hydrologic knowledge about a water system. It can be integrated with GIS mappings. It can also include information about both quantity and quality stresses on water resources.

**Environmental Impact Assessment (EIA):** In its broadest sense, an environmental impact assessment is simply an elucidation of all the possible environmental consequences of a particular policy change or project. The idea behind this is to ensure that projects are implemented in a way that either eliminates the possibility of environmental harm or mitigates such harm to the extent possible. If the negative consequences to the environment are deemed to be excessive and unavoidable, the project itself should be abandoned. Conducting EIAs prior to implementing projects is now the norm for all development agencies, e.g. the World Bank, and many national environmental agencies. For source material on EIAs refer to the World Bank's EIA Source book and its updates on-line. See also the Stedman-Edwards and Reed article in WWF, 2000, for a framework for using EIAs to examine the impact of trade on the environment.

**Ecosystem approach:** This approach looks at policy and management interventions that can enhance the contributions of ecosystems to human well-being. Environmental resources are analyzed through the lens of an “ecosystem” rather than as discrete components because ecological studies have shown that the health of individual resources depends on the health of the entire interdependent natural system, e.g. flooding is often caused by degradation of land resources and loss of forest cover. This is the framework that is being used by the Millennium Ecosystem Assessment (MA), sponsored by



UNEP. Further details can be found in WRI, 2003 and UNEP, 2003.

**Pressure-State-Response (PSR) Model:** The PSR model has been used by the OECD to provide a framework for monitoring the impact of resource degradation and identifying appropriate policy responses. It analyzes the driving forces leading to pressure on an environmental resource, assesses the state of the resources and finally looks to an appropriate response to the problems. With modification, the model can also be used as a Pressure-State-Poverty-Response (PSPR) framework, where the impacts on poverty are also accounted for. Other adjusted versions of this framework are the Driving force-State-Response (DSR) model and the Driving force-Pressure-State-Impact-Response (DPSIR) model. For further details, see OECD, 2003.

**Analysis of land-cover/land use changes using GIS data and mapping:** Geographical Information System (GIS) has the capability to integrate and analyze spatial and temporal data so as to get detailed information on land use/land cover changes. This can easily be overlaid with data on population density or other demographic data to provide a richer analysis. For an example of an application of this tool to watershed management, see Awasthi et al, 2002.

**Root cause analysis of biodiversity losses:** Developed by WWF-MPO this is a multidisciplinary approach that uses short term assessments of existing information to draft causality charts, and convene stakeholders discussions to identify critical links and elicit priority points of intervention. This approach has been applied to some 20 countries and regions (see Woods et al, 1998).

## MODELS OR FRAMEWORKS FOR ASSESSING RURAL POVERTY AND LIVELIHOODS

**Household income and expenditure surveys:** A good description of this methodology and its application to the assessment of food insecurity can be found in Smith, 2001.

*The main purpose of national household expenditure surveys is to evaluate the consumption and welfare of a country's population. Most surveys are specifically designed to capture the full distribution across a population (rather than simple averages) of various measures of welfare, including total income, often proxied by total expenditures, and the consumption of food and non-food items... Household expenditure surveys are very often part of wider multipurpose surveys in which data are collected on health, education and demographic characteristics of households as well as community infrastructure. Data collection and analysis methods were first documented in a publication by the United Nations (UN, 1984) as part of the UN National Household Survey Capability Program. They are further elaborated in Grosh and Glewwe (2000), drawing on the experience of the World Bank's Living Standards Measurement Survey programme."*

**Poverty Mapping:** This is a spatial representation of poverty and human well-being. It is predicated on the notion that there are often geographical linkages to poverty (such as lack of infrastructure, the state of the natural resource base, and the presence of disadvantaged ethnic groups) and finding these pockets of poverty can help policymakers target development aid more usefully. See Henninger and Snel, 2002, for a description of how poverty maps can be used. A series of country case studies for Ecuador, Brazil, Vietnam, Guatemala, South Africa and Cambodia are presented.

**Rapid Rural Appraisal (RRA):** RRA methods are used to gain a quick estimate of the wealth rankings of a local population, taking into account land holdings, livestock, equipment and other assets rather than simply income or expenditure. This is also combined with participatory rural appraisals (PRA)

methods. Respondents are surveyed to develop an ordinal ranking of household wealth and these results are then validated against other forms of survey data. For a description of these methods, see Chambers, 1994 and Takasaki et al, 2000.

**Sustainable Livelihoods Approach (SLA):** Under this approach, the livelihoods of poor people are the focus of analysis and action. This approach was first described by Chambers and Conway (1992) who defined sustainable livelihoods as follows:

*"A livelihood comprises people, their capabilities and their means of living, including food, income and assets. Tangible assets are resources and stores, and intangible assets are claims and access.*

*A livelihood is environmentally sustainable when it maintains or enhances the local and global assets in which livelihoods depend, and has net beneficial effects on other livelihoods. A livelihood is socially sustainable which can cope with and recover from stress and shocks, and provide for future generations."*

The emphasis is on assets (both tangible and intangible), vulnerabilities and appropriate institutions. One of the first organizational proponents of this approach was the UK Department for International Development (DFID). It has also been embraced by CARE, Oxfam, UNDP and several other organizations. A useful analysis of how different agencies have implemented this approach is contained in Hussein, 2002.

See also the discussions under measurement of poverty that deal with Participatory Poverty Assessment (PPA) Approaches.

## MODELS OR FRAMEWORKS FOR APPLICATION TO TRADE, POVERTY AND/OR THE ENVIRONMENT

**Human-rights approach to development:** An approach championed by a diverse group of NGOs, e.g. Oxfam, Care International and Médecins Sans Frontières, as well as international development agencies such as UNICEF and UNDP. This is an attempt to use rights enshrined in various international agreements (such as the Universal Declaration of Human Rights and International Covenants on Civil and Political Rights and on Economic, Social and Cultural Rights) as a basis for setting priorities and allocating resources in development work. This is envisioned as a fundamental challenge to the market based approach to development. See Nelson and Dorsey, 2003, Oxfam, 2002 and UNDP, 2000.

**Panel data analysis:** This method involves a statistical analysis of data from a group of countries (or regions) over time. Thus it captures both the inter-country (region) variability and the variability over time in variables of interest. For an excellent survey of panel data methods, see Hsiao, 1986.

**World systems analysis:** Examines the concept of core-periphery relationships within the current global trading regimes. See Chase-Dunn and Grimes, 1995.

**Analysis of relations between rural poverty and the environment in developing countries:** Also developed by WWF-MPO, its analysis of relations between rural poverty and the environment in developing countries adopts a political economy perspective, considers the interaction between local, meso and macro scales and focuses on issues like property regimes, access to resources, social capital, institutions and governance. This approach has been applied in half a dozen countries (see Gutman 2001 and Reed 2001).

WWF has also proposed different versions of ex-ante environmental and social assessment of macroeconomic reforms (see Iannariello et al, 2000) and of trade agreements (see

Perrin, 1998) Yet, due either to lack of resources, lack of interest among government and agencies, or due to sheer intractability, these assessments have never been tried other than in very simplified ex-post versions (see for example Juda and Richardson, 2001).

**Payment for Environmental Services (PES):** This is an innovative market-based mechanism for funding conservation of natural resources. The basic idea is that, often, environmental resources are used in a non-sustainable way because much of their value is not captured by traditional market prices. In response to this market failure, there has been a movement to try to create markets for environmental services such as carbon sequestration, biodiversity conservation, watershed protection, recreational amenities etc. This can be particularly beneficial to the rural poor who often depend on natural resources for their livelihood. The logic is compelling, and there is considerable momentum behind the approach from several conservation groups. There are some practical hurdles to implementing such markets such as properly defining the environmental commodity, identifying relevant stakeholders, ensuring a sustainable source of funds to pay for the services and developing appropriate institutions suitable to local circumstances. However, there are several successful practical examples of this approach worldwide. Costa Rica established a pioneering PES program as part of its 1996 Forestry Law (Rojas and Aylward, 2003). Participants in the program must have a forest management plan and then receive contracts for services such as carbon sequestration, stream-flow regulation (for hydropower) and erosion control (for agriculture and human settlements). For other examples, see Pagiola et al, 2002, and Dudley and Stolton, 2003.

**Scenario approach:** A scenario approach is one that attempts to sketch out different possible future outcomes based on different bundles of assumptions about drivers of change. It has been used to great effect in developing an understanding and supporting a discussion about where we are going, where do we want to go and how today's actions may steer us towards one or another possible future. For a good example of such

research, please refer to the work of the Global Scenario Group (GSG), which has developed a range of global scenarios intended to inform global, regional and national strategies for sustainable development (SEI and GSG, 2002 and 1998).

**Institutional analysis:** This is an analysis of the strengths and weaknesses of institutions as a way to evaluate their efficacy and their ability to undertake reforms. It takes into account power structures, hierarchies, incentive mechanisms, relationships with relevant stakeholders and other such variables of interest. It can be applied to governments, NGOs and the private sector. Tools for conducting Institutional Analysis include Public Expenditure Tracking Surveys (see World Bank for more information).<sup>35</sup>

**Multi-criteria analysis (MCA):** This is a burgeoning field of research in Operations Management, focusing on how to make optimal choices when decisions are being made across several dimensions. This is the crux of the problem in the trade, poverty and environment debate. MCA provides a framework for taking into account the concerns of different stakeholders, evaluating trade-offs and creating a hierarchy of policy options. Several software tools have also been developed to facilitate MCA, e.g. Analytica, DecisionPro, Crystal Ball, Expert Choice.

**Sustainability Impact Assessment (SIA):** The SIA Programme was launched by the European Commission to examine the impacts of the results of trade negotiations on the environment as a means of integrating sustainability into European trade policy. The methodology employed to do SIAs is to examine the impact of trade on a core set of economic, social and environmental indicators. However, the details of the methodology have generated considerable debate and are under refinement. Several reports have been generated that apply the SIA methodology to the WTO negotiations. These are available on the European Union website.<sup>36</sup>

## V. EXAMPLES OF METHODOLOGIES IN USE

While references have been provided for the methodologies in the previous section, it might be helpful to describe some in greater detail using case study examples from the literature.

### 1. MARKETS, INSTITUTIONS AND FORESTRY: THE CONSEQUENCES OF TIMBER TRADE LIBERALIZATION IN ECUADOR (Southgate et al, 2000)

This study examines the role of strong institutions in creating incentives to preserve natural resources. It makes the case that although the timber trade in Ecuador has been liberalized, timber prices are inefficiently low due to a lack of competition. New investments are discouraged because of weak property rights, corruption and barriers to indigenous peoples' participation in the market. This has led to a situation of over-exploitation of the tropical forests.

Trade liberalization in Ecuador is evaluated in this study by examining the change in tariff rates, quotas, licensing agreements and other trade barriers over time. In general, the authors find that such barriers have decreased and their reduction has led to a decrease in the nominal protection rates (NPRs) for plywood from 70% in 1991 to between -4 to 26% in 1997. The average commercial value of industrial-grade logs increased from \$30 to \$47 per cubic meter.

However, the authors evaluate that based on international timber prices, the prices in Ecuador should be closer to \$136 per cubic meter. Thus there is a negative NPR of -65%, and for sawn-wood the NPR is between -54% and -76%. Tropical hardwoods should be priced at \$366-378 based on international prices, rather than \$80 per cubic meter which is the price in Ecuador.

The authors argue that the low timber prices result in little or no incentive for good forest management practices and lead to over-exploitation of the forests. Their estimates of net return to logging given current (depressed) prices are negative or slightly positive. However, they do note that higher prices may not be enough to guarantee good practices unless there is also significant attention paid to instituting and

enforcing strong environmental standards.

An examination of the timber industry reveals a lack of effective competition, demonstrated by the very small number of buyers (two) in the plywood industry. A survey of forest owners and loggers shows that they attribute the low prices to this. The authors then go on to describe the reasons for this monopsony market:

- (a) Ecuador's weak macroeconomy is a strong disincentive to investments
- (b) Corruption induced by excessive regulation—There is no strong "green certification" system for Ecuador's forest products but instead a patchwork of many regulations and fees which can be avoided by resorting to bribery.
- (c) Lack of well-defined property rights—Many forests in Ecuador are not privately owned but there is also a lack of public protection of these lands.
- (d) Weak institutional support for indigenous peoples—Indigenous peoples who have long made their livelihoods in the forests are not well protected by the institutions in Ecuador. Their communal land rights are often not recognized and they lack access to credit and markets to develop alternative sources of livelihood. Even if some land rights are recognized, the weakened position of these groups means they often have no choice but to sell out the timber rights at low prices.

In summation, this case study seeks to show how a lack of competitive prices for timber in Ecuador amounts to a disincentive for good husbandry of forest resources. But the authors also point out that liberalized trade is not enough. The institutional underpinnings must be robust else there will continue to be mismanagement and overexploitation of forests. They cite the example of Malaysia to show that high timber prices alone may not guarantee long-term conservation of tropical forests (see Boscolo and Vincent, 2000).

## **2. RAPID RURAL APPRAISAL IN HUMID TROPICAL FORESTS: AN ASSET POSSESSION-BASED APPROACH AND VALIDATION METHODS FOR WEALTH ASSESSMENT AMONG FOREST PEASANT HOUSEHOLDS (Takasaki, Barham and Coomes, 2000)**

This article uses an asset-based approach to employing the methodology of Rapid Rural Appraisals (RRAs) in the Peruvian Amazon. RRAs entail field surveys where a small group of respondents provides an ordinal ranking of the wealth of households in a village. The authors point out that national household surveys typically measure income and expenditures and ignore non-land forms of wealth including social, natural and cultural capital. Previous studies have attempted to validate RRA methods by correlating RRA survey data with physical wealth forms such as land and livestock. The fieldwork in this study attempts to conduct a “possession-based” RRA as well as to develop an idea of the composition of wealth (not simply the magnitude) of households.

In the study area, most households were quite poor if conventional measures of wealth were to be applied and survey respondents would find it difficult to rank the relative poverty in wealth terms. But they were easily able to provide information on the assets held by different households and the authors were able to stratify the population into those that held land and those that had other physical capital assets. Their hypothesis was that these assets would determine what kinds of economic activities the households would engage in—agriculture or fishing, hunting and gathering etc.

The authors carefully lay out the framework for their study, with details about the setting and the different types of tangible assets possessed by households, including five types of agricultural land, productive capital (fishing nets, boats etc.), non-productive capital (houses, consumer durables) and livestock. They surveyed 300 households with attention paid to selecting the sample appropriately. They also provide information on the survey questions asked and the format for asking the questions.

Each household was first ranked by a small group of long-time village residents according to total value of capital and an aggregate land index. Using these two measures they were stratified into a top, middle or bottom group. This forms the core of the RRA. A more detailed questionnaire was then administered to the full sample to get a fuller picture of the composition of assets in each household. Then this household survey was compared with the RRA to see what possible sources of error there might be in conducting the RRA. Discrepancies can arise due to attribution errors caused either by variance errors or bias errors. Four validation tests were conducted and they are described in detail.

The authors find that RRA respondents effectively identified the wealth possessions of other households in the village. The accuracy rate was 80% for productive capital assets and 78% for shop assets and other house holdings. The results for land assets are less accurate but still quite good.

## **3. ENVIRONMENT DEVELOPMENT LINKAGES: MODELING A WETLAND SYSTEM FOR ECOLOGICAL AND ECONOMIC VALUE (Kanchan Chopra and Saroj Kumar Adhikari, 2004)**

This study examines the use of both economic and ecological valuation techniques in the Keoladeo National Park (KNP), a wetland area of Northern India that is also designated as a Ramsar<sup>37</sup> site. The authors make the point that economic valuation tends to focus on use value in the short run, whereas ecological value is a more generalized long-term notion of value. A dynamic simulation model is used to understand the links between the two and the authors find that economic value is critically dependent on ecological health indices.

Utility theory is the basis for economic valuation of a resource. In the past, economic valuation has tended to exclude non-use values. But newer methods such as travel cost estimation try to incorporate amenity values of tourism as well. It is, however, possible that tourism itself places pressure on the ecosystem and in the long run may lead to an

erosion of its value. Other economic activities such as intensified agriculture can have a similar effect. KNP is home to several migratory species of birds, including the endangered Siberian crane. It has a very high tourism value for this reason. Local villagers also have use rights for extraction of grass and other wetland resources. The wetlands provide essential ecosystem services such as controlling flooding, maintaining water quality and providing a habitat for many species.

The authors set up a detailed computer simulation model using STELLA to examine alternative scenarios regarding the linkages between ecological functions and incomes derived from KNP. There is a water module, a biomass module, a birds module and a net income module. These modules are linked by control variables which describe physical, ecological and behavioral relationships. Two indices of ecological health are used: the tourists’ perception of ecological health which is the presence of the flagship species, the Siberian crane, in the winter months, and an index of species diversity in the park. Three scenarios are evaluated: a baseline (BAU) scenario, a scenario where surface water is reduced by 5% annually due to pressures from outside the park and a scenario where surface inflow and the ecological health index are reduced by 5% annually. The economic value of tourism is also evaluated using the travel cost method.

The results of the simulations indicate that economic value (direct and indirect income derived from the park) is critically dependent on the ecological health indices. However, there is a non-linearity in this relationship, shown by the degree of impact of an increase in ecological health indices on tourist traffic. Benefits from ecological conservation are more per unit of effort at higher levels of conservation. The travel cost method reveals low elasticities with respect to costs incurred by tourists.

## **VI. CONCLUSIONS AND SUGGESTIONS FOR FUTURE RESEARCH**

This literature review is just one component of the project on Trade Liberalization, Rural Poverty and the Environment. The intention here was to cast a wide net and briefly describe a varied set of voices, as well to fuel further research ideas. An overview of the literature reveals some recurring themes of interest:

- For the most part the existing literature tends to focus on links between trade and the environment, links between trade and growth/poverty/inequality or links between environment and poverty. There is little that cuts across all these subjects. This leaves open an avenue to do some interesting new work.
- The theme of good governance emerges often. The importance of strong and legitimate institutions is highlighted in several articles and by several stakeholders.\
- There is a clear need for and importance of a multi-disciplinary approach that brings to bear the combined expertise of social scientists and natural scientists.

The country case studies will form an interesting and informative basis for exploring many of the issues raised in the literature. It would be extremely useful for the research teams to conduct their own survey of literature in the context of their own countries and languages to expose other aspects that may not have come to light here. The country literature reviews should encompass the views of relevant local stakeholders and should be targeted at reviewing developments in the particular sectors that are being studied. They should refer to any regional or national schools of thought that have gained prominence. They should survey in greater depth the particular trade, environmental or poverty issues that are the subject of the case study. Since institutions form an important component of how linkages between trade, the environment and poverty occur, it will be crucial to lay out the institutional context of the case studies in detail. Using a common framework of analysis will enable comparability between studies. The final contribution of the case studies should be the identification of specific policy interventions and/or institutional

changes that will ensure that trade liberalization will contribute to alleviating poverty and promoting environmental sustainability in rural areas.

There are several fruitful avenues of research that could not be fully explored (or explored at all!) in this literature review. These could, hopefully, form the basis of the policy papers that emerge from this project or be taken up in varying degrees within the context of the country case studies. Some possible themes of interest are:

- The scale at which trade decisions are made (national or international) and where its consequences are felt (regional or local) are usually very different. How should these be reconciled so that a more holistic view of development can emerge?
- What are the set of complementary policies that usually accompany trade liberalization and profoundly affect its impact, e.g. privatization, fiscal and capital market reforms, removal of state subsidies?
- How does trade liberalization change production regimes, which in turn can have consequences for the environment and for the participation of the poor in the economy? (For example, does trade tend to lead to large-scale, intensive, industrial models of agriculture?)
- Should equity be embraced as a necessary component of economic development, especially in the long run?
- What are the enabling conditions that make the poor particularly vulnerable to disruptions/changes brought about by trade liberalization? Can these be anticipated and appropriate policies put in place prior to trade liberalization policies?
- How can developed and developing countries foster strong institutions that support the goals of sustainable development? How can these institutions be made responsive to local concerns of the rural poor?
- How does the advent of sanitary and phyto-sanitary standards and other potential non-tariff barriers to trade affect the ability of developing countries to expand their exports?
- Linkages between local and global environmental issues are frequent. How do these issues of scale influence the choice of methodologies used as well as the ability to generalize results?
- Are developing countries unduly constrained in their ability to implement appropriate policy responses regarding poverty due to obligations under structural adjustment commitments or WTO commitments?
- How can developing countries respond to and change the existing power relationships in the international trade regime?
- How can the outreach and advocacy elements of this project and its case studies be structured so as to bring about real change? What are the best points of intervention?
- Can this project suggest inter-disciplinary methodologies that will allow for the voices of all stakeholders to be heard?

## ENDNOTES

<sup>1</sup> Note that this does not imply that *private* property rights must exist—simply that there must be *well-defined* rights, be they public, commercial etc.

<sup>2</sup> <http://www.ictsd.org/issarea/ag/resourdes/G-20%20offical%20text.pdf>

<sup>3</sup> <http://www.globalexchange.org/campaigns/wto/>

<sup>4</sup> Many of them were circulated under the auspices of the RING Alliance and can be found on their website: <http://www.ring-alliance.org>

<sup>5</sup> [www.markettradefair.com](http://www.markettradefair.com)

<sup>6</sup> <http://www.corpwatch.org>

<sup>7</sup> <http://multinationalmonitor.org/monitor.html>

<sup>8</sup> <http://www.globalreporting.org/>

<sup>9</sup> See <http://www.grameen-info.org/> for more information about Grameen Bank

<sup>10</sup> See <http://ifg.org/programs/indig.htm>

<sup>11</sup> See <http://www.tebtebba.org/> Tebtebba is a word used by the indigenous Kankana-ey Igorots of Northern Philippines and refers to a process of collectively discussing issues and presenting diverse views with the aim of reaching agreements, common positions, and concerted actions.

<sup>12</sup> This section has been written by Don Larson and John Nash of the World Bank.

<sup>13</sup> "Additional institutions are needed to coordinate and ensure an adequate supply of assets that are not spontaneously provided for by markets: environmental assets (clean air, clean water, fisheries and forests) and social assets (mutual trust, ability to network, and security of private property)." (World Bank 2003, p. 1)

<sup>14</sup> <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/TRADE/0,,pagePK:149018~piPK:149093~theSitePK:239071,00.html>

<sup>15</sup> <http://inweb18.worldbank.org/ESSD/sdvext.nsf/52ByDocName/SafeGuardPolicies>

<sup>16</sup> <http://www1.worldbank.org/sp.safetynets/>

<sup>17</sup> <http://www.worldbank.org/nipr/greening>

<sup>18</sup> [http://carbonfinance.org/pcf/Home\\_Main.cfm](http://carbonfinance.org/pcf/Home_Main.cfm)

<sup>19</sup> <http://inweb18.worldbank.org/ESSD/ardext.nsf/18ByDocName/WaterResourcesManagement>

<sup>20</sup> See, for example, the three pillars of engagement in the World Bank's forestry strategy <http://inweb18.worldbank.org/ESSD/ardext.nsf/14ByDocName/KeyIssuesTheThreePillarsOfEngagement>

<sup>21</sup> The World Bank in its publication *Global Economic Prospects and the Developing Countries 2002* (and the *Global Economic Prospects and the Developing Countries 2004*) lays out its rationale for promoting trade liberalization as a source of future economic growth and poverty reduction. The report uses a CGE model, calibrated to the Global Trade Analysis Program (GTAP) database. For a critique of the conclusions of this report refer to Weisbot and Baker, 2002.

<sup>22</sup> World Bank, 2003, *Sustainable Development in a dynamic world: Transforming institutions, growth, and quality of life*. New York, Oxford University Press.

<sup>23</sup> <http://inweb18.worldbank.org/ESSD/envext.nsf/41ByDocName/AnalyticalAndAdvisoryAssistanceCountryEnvironmentalAnalysis>

<sup>24</sup> <http://www.gefweb.org>

<sup>25</sup> <http://www.unccd.int/main.php>

<sup>26</sup> <http://www.ipgri.cgiar.org/index.htm>

<sup>27</sup> This section has been written by Pablo Gutman, WWF-MPO, Washington, DC

<sup>28</sup> <http://www.developmentgoals.org>

<sup>29</sup> <http://archive.greenpeace.org/comms/ken/state.html>

<sup>30</sup> See <http://www.accessmed-msf.org>

<sup>31</sup> Lobbying Paper Written by Civil Society International Council about UNCTAD XI Pre-context: <http://www.forumsocietedecivil.org.br/dspMostraBiblioteca.asp?idBib=27>

<sup>32</sup> WCED, 1987. *Our Common Future*. New York, Oxford University Press.

<sup>33</sup> <http://www1.worldbank.org/prem/poverty/voices/index.htm>

<sup>34</sup> <http://www.accessmed-msf.org>

<sup>35</sup> <http://inweb18.worldbank.org/ESSD/sdvext.nsf/81ByDocName?ToolsandMethodsInstitutionalAnalysis>

<sup>36</sup> <http://europa.eu.int/comm/trade/issues/global/sia/reports.htm>

<sup>37</sup> The Ramsar Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 138 Contracting Parties to the Convention, with 1369 wetland sites, totaling 199.6 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance. See [www Ramsar.org](http://www Ramsar.org)

## BIBLIOGRAPHY

- Action Aid, Berne Declaration, IATP and Misereor. 2001. "TRIPS on Trial: The Impact of WTO's Patent Regime on the World's Farmers, the Poor and Developing Countries." Available at: [http://www.actionaid.org/resources/pdfs/trips\\_trial.pdf](http://www.actionaid.org/resources/pdfs/trips_trial.pdf)
- Adger, Neil W., Katrina Brown, Jenny Fairbrass, Andrew Jordan, Jouni Paavlova, Sergio Rosendo and Gill Seyfang. "Governance for Sustainability: Towards a "Thick" Understanding of Environmental Decision Making." Working Paper EDM 02-04, Centre for Social and Economic Research on the Global Environment, University of East Anglia.
- Agarwal, Anil and Sunita Narain. 1999. "Community and Household Water Management: The Key to Environmental Regeneration and Poverty Alleviation." For the UNDP-EC Poverty and Environment Initiative. The authors are directors of the Centre for Science and the Environment, New Delhi.
- Agrawal, Arun. 1995. "Dismantling the divide between Indigenous and Scientific Knowledge." *Development and Change*, 26 (1995):413-439
- Alesina, A. and R. Perotti. 1996. "Income Distribution, Political Instability and Investment." *European Economic Review*, 40 (6): 1203-1228.
- Amsden, A. 1989. *Asia's Next Giant: South Korea and Late Industrialization*. New York, Oxford University Press.
- Anriquez, Gustavo and Merlinda D. Ingco. 2002. "Trade and the Environment: An Economic Literature Survey." September 2002.
- Awasthi, K.D., B.K. Sitaula, B. R. Singh and R. M. Bajacharaya. "Land Use Change in Two Nepalese Watersheds: GIS and Geomorphometric Analysis." *Land Degradation and Development*, 13: 495-513 (2002).
- Bénabou, Roland. 1996. "Inequality and Growth." In NBER Macro Annual 1996, Ben Bernanke and Julio Rotemberg, eds. MIT Press: Cambridge, MA.
- Berg, Andrew and Anne Krueger. 2003. Trade, Growth and Poverty: A Selective Survey. *IMF Working Paper* WP/03/30. Washington, D.C.
- Borregard, Nicola and Beatriz Bustos. 2003. "Background Paper: Southern Agenda—South America." Prepared for the Stockholm Environment Institute, Boston in the context of the UNEP Rio+10 Project. October 2003.
- Borregard, Nicola and Mark Halle. 2002. "Striking a Balance for Trade and Sustainable Development." Prepared for the WSSD, Johannesburg 2002, by CIPMA (Chile) and IISD (Switzerland), published by IIED in collaboration with RING.
- Boscolo, M. and J. Vincent. 2000. "Promoting Better Logging Practices in Tropical Forests: A Simulation Analysis of Alternative Regulations." *Land Economics*, 76 (1), pp. 1-14.
- Brown, Chad P. 2004. "Developing Countries as Plaintiffs and Defendants in GATT/WTO Trade Disputes." Blackwell Publishing Ltd. 2004.
- Bryant, Richard. 1992. "Political Ecology: An Emerging Agenda in Third World Studies." *Political Geography* 11 (1): 12-36.
- Buys, Piet, S. Dasgupta, C. Meisner, K. Pandey, D. Wheeler, K. Bolt, K. Hamilton and L. 2004. "Measuring Up: New Directions for Environmental Programs at the World Bank" Working Paper 3097. Washington, World Bank.
- Cameron, John. 2000. "Development Economics, the New Institutional Economics and NGOs." *Third World Quarterly*, Vol. 21: No. 4, pp. 627-635.
- Cavendish, William. 2000. "Empirical Regularities in the Poverty-Environment Relationship of Rural Households: Evidence from Zimbabwe." *World Development*, Vol. 28: No. 11, pp. 1979-2003. Elsevier Science Ltd., Great Britain.
- Chambers, R. and Gordon Conway. 1992. "Sustainable Rural Livelihoods: Practical Concepts for the 21st Century." *IDS Discussion Paper 296*. Institute of Development Studies, Brighton.
- Chambers, R. 1994. "The Origin and Practice of Participatory Rural Appraisal." *World Development*, 22(7), 953-969.
- Chase-Dunn, Christopher and Peter Grimes. 1995. "World-Systems Analysis." *Annual Review of Sociology* 1995, 21:387-417.
- Chichilnisky, Graciela. 1994. "North-South Trade and the Global Environment." *American Economic Review*, 84(4):851-974.
- Chopra, Kanchan and Saroj Kumar Adhikari. 2004. "Environment Development Linkages: Modeling a Wetland System for Ecological and Economic Value." *Environment and Development Economics* 9:19-45.
- CITES-TRAFFIC See bulletins, publications and general information at [www.traffic.org](http://www.traffic.org)
- Clark, John G. 1995. "Economic Development vs. Sustainable Societies: Reflections on the Players in a Crucial Contest." *Annual Review of Ecology and Systematics*, Vol. 26 (1995): pp. 225-248.
- Cogneau, Denis and Anne-Sophie Robilliard. 2000. "Growth, Distribution and Poverty in Madagascar: Learning from a Microsimulation Model in a General Equilibrium Framework." *TMD Discussion Paper No. 61*. Trade and Macroeconomics Division, IFPRI, Washington, DC. Available at: <http://www.ifpri.org/divs/tmd/dp/papers/tmdp61.pdf>
- Conklin, Beth A. and Laura R. Graham. 1995. "The Shifting Middle Ground: Amazonian Indians and Eco-Politics." *American Anthropologist, New Series*, Vol. 97: No. 4 (Dec. 1995), pp. 695-710.
- Copeland, Brian R. and M. Scott Taylor. 2003. "Trade, Growth and the Environment." NBER Working Paper 9823, July 2003.
- Cornia, G., R. Jolly and F. Stewart. 1987. "Adjustment with a Human Face." New York: UNICEF.
- Dasgupta, S., U. Deichmann, C. Meisner and D. Wheeler. 2003. 'The Poverty/Environment Nexus in Cambodia and Lao People's Democratic Republic,' Working Paper 2960. Washington, World Bank.
- Dasgupta, Susmita, Ashok Mody, Subhendu Roy and David Wheeler. 2001. "Environmental Regulations and Development: A Cross-country Empirical Analysis." *Oxford Development Studies*, Vol. 29: No. 2, 2001.
- Dean, Judith M. 1992. "Trade and the Environment: A Survey of the Literature." Background paper for the World Development Report 1992. World Bank Policy Research Working Paper. August 1992.
- Dean, Judith M. 2000. "Does Trade Liberalization Harm the Environment? A New Test." CIES Policy Discussion Paper #0015. <http://www.adelaide.edu.au/cies>

- Deaton, Angus. 2004. "Measuring Poverty in a Growing World (or Measuring Growth in a Poor World)." Available at: [http://www.wws.princeton.edu/%7Erpds/downloads/deaton\\_measuringpoverty\\_204.pdf](http://www.wws.princeton.edu/%7Erpds/downloads/deaton_measuringpoverty_204.pdf)
- Deininger, K. and L. Squire. 1998. "New Ways of Looking at Old Issues." *Journal of Development Economics*, 57: 259-87.
- DFID, EC, UNDP and World Bank. January 2002. "Linking Poverty and Environmental Management: Policy Challenges and Opportunities." Discussion document prepared for the World Summit on Sustainable Development.
- Dollar, David. 1992. "Outward-Oriented Developing Economies Really Do Grow More Rapidly: Evidence from 95 LDCs, 1976-85." *Economic Development and Cultural Change*, 1992, 523-544.
- Dudley, N. and S. Stolton. 2003. "Running Pure: The Importance of Forest Protected Areas to Drinking Water." Washington: World Bank/WWF Alliance for Forest Conservation. Available at: [http://lnweb18.worldbank.org/ESSD/envext.nsf/80ByDocName/RunningPureTheimportanceofforestprotectedareastodrinkwater/\\$FILE/RunningPure2003+.pdf](http://lnweb18.worldbank.org/ESSD/envext.nsf/80ByDocName/RunningPureTheimportanceofforestprotectedareastodrinkwater/$FILE/RunningPure2003+.pdf)
- Duraiappah, Anantha K. 1998. "Poverty and Environmental Degradation: A Review and Analysis of the Nexus." *World Development*, Vol. 26: No. 12, pp. 2169-2179. Elsevier Science Ltd., Great Britain.
- Edwards, Michael. 2000. "Civil Society and Global Governance." Presented at the "United Nations and Global Governance in the New Millennium" International conference, sponsored by UN University. January 2000.
- Edwards, Sebastian. 1998. "Openness, Productivity and Growth: What do We Really Know?" *Economic Journal*, 108, March 1998, 383-398.
- Ekins, Paul. 2003. "Trade and Environment." For the Internet Encyclopaedia of Ecological Economics, published by the International Society for Ecological Economics. February 2003.
- Escobar, Arturo. 1988. "Power and Visibility: Development and the Invention and Management of the Third World." *Cultural Anthropology*, Vol. 3: No. 4 (Nov. 1988), 428-443.
- Felipe, Jesus. 2003. "Is Export-led Growth Passé? Implications for Developing Asia." *ERD Working Paper No. 48*. Asian Development Bank, Manila, Philippines.
- Ferro, Manuela, David Rosenblatt and Nicholas Stern. 2002. "Policies for Pro-Poor Growth in India." Draft paper, Cornell University. Available at: <http://www.arts.cornell.edu/econ/indiaconf/Stern%20Paper.pdf>
- Forest Stewardship Council, see publications and general information at [www.fsc.org](http://www.fsc.org)
- Fukuda-Parr. 2002. "Operationalising Amartya Sen's Ideas on Capabilities, Development, Freedom and Human Rights —the Shifting Focus of the Human Development Approach." UNDP Training Documents, Oxford Course.
- Gereffi, Gary and Stephanie Fonda. 1992. "Regional Paths of Development." *Annual Review of Sociology* 1992, 18: 419-48
- Gereffi, Gary and Miguel Korzeniewicz (eds). 1994. "Commodity Chains and Global Capitalism." Westport, CT: Greenwood Press and Praeger.
- Kaldor, Mary, Helmut Anheier and Marlies Glasius (editors). 2003. *Global Civil Society 2003*. Centre for Civil Society and Centre for the Study of Global Governance, London School of Economics and Political Science. Oxford University Press, Oxford and New York. Also available at: <http://www.lse.ac.uk/Depts/global/Yearbook/outline2003.htm>
- Global Reporting Initiative. 2002. *Sustainability Reporting Guidelines 2002*. CERES and UNEP. Available at: <http://www.globalreporting.org/guidelines/2002.asp>
- Gonzalez, A.T. (1996 – 1998). "Several reports of the independent panel of international experts of trade, environment and development." WWF-International, Gland.
- deGarft Agyarko. 1998. *Influencing Policy Through Poverty Assessments: Theoretical and Practical Overview of a Changing Process*. PPA Topic Pack, Institute of Development Studies.
- Grossman, Gene M. and Elhanan Helpman. 1991. *Innovation and Growth in the Global Economy*. Cambridge and London: MIT Press.
- Grossman, Gene M. and Alan B. Krueger. 1993. "Environmental Impacts of a North American Free Trade Agreement," in Peter M. Garber, ed., *The Mexico-U.S. Free Trade Agreement*. Cambridge and London: MIT Press.
- Guillén, Mauro F. 2001. "Is Globalization Civilizing, Destructive or Feeble? A Critique of Five Key Debates in the Social Science Literature." *Annual Review of Sociology* 2001, 27:235-60.
- Gutman, P. 2001. "Forests and the Rural Poor. A Plea to Broaden the Conservation Agenda," WWF-MPO, Washington D.C.
- Hall, Robert and Chad I. Jones. 1999. "Why do Some Countries Produce So Much More Output per Worker than Others?" *Quarterly Journal of Economics*, 114, 1 February 1999, 83-116.
- Hampton, K. 2001. "Credit where it is due. The Role of Export Credit Agencies in Promoting Sustainable Energy" WWF- International and IPS, Gland.
- Henninger, Norbert and Mathilde Snel. 2002. "Where are the Poor? Experiences with the development and Use of Poverty Maps". World Resources Institute, Washington, DC and UNEP/GRID-Arendal, Arendal, Norway. Also available at: <http://pdf.wri.org/wherepoor.pdf>
- Heritage Foundation/Wall Street Journal. Index of Economic Freedom. 2004. <http://www.heritage.org/research/features/index/search.html>
- Hertel, T.W. (ed.) 1997. *Global Trade Analysis: Modeling and Applications*. Cambridge University Press.
- Hobohm, Carsten. 2003. "Characterization and Ranking of Biodiversity Hotspots: Centres of Species Richness and Endemism." *Biodiversity and Conservation*, 12:279-287. Kluwer, Netherlands.
- Hsiao, Cheng. 1986. *Analysis of Panel Data*. *Econometric Society Monographs*. Cambridge University Press.
- Hussein, Karim. 2002. *Livelihoods Approaches Compared: A Multi-Agency Review of Current Practice*. DFID and ODI. Published by the Overseas Development Institute, London.
- Iannariello et al. 2000. *Environmental Impact Assessment of Macroeconomic Reform Programs*. WWF-MPO.

- IISD—WWF-US. 2001. "Private Rights, Public Problems. A guide to NAFTA's controversial chapter on investors rights," Canada.
- Indigenous Peoples' Statement on TRIPS. 1999. Available at: <http://www2.cid.harvard.edu/cidtrade/Issues/lifepat.pdf>
- Ingco, M. and J. Nash, eds. *Agriculture and the WTO: Creating a Trading System for Development*, Washington, DC: Oxford University Press and the World Bank
- Insausti, M. 2001. "Sparkling the Debate in Sustainable Trade in the European Union," WWF-EPO Brussels.
- International Chamber of Commerce. 2000. Brief on Globalization. Available at: [http://www.iccwbo.org/home/case\\_for\\_the\\_global\\_economy/globalization%20brief/globalization\\_brief.asp](http://www.iccwbo.org/home/case_for_the_global_economy/globalization%20brief/globalization_brief.asp)
- Juda, N and Richardson S. 2001. "Preliminary Assessment of the Environmental & Social Effects of Liberalization in Tourism Services," WWF-International, Gland.
- Kaufmann, Daniel, Aart Kraay and Pablo Zoido-Lobaton. "Aggregating Governance Indicators." World Bank Working Papers—Governance Corruption and Legal Reform, No. 2195. Washington, D.C.
- Killeen, Damian and Shaheen Rafi Khan. 2002. "Poverty and Environment." Prepared for the WSSD, Johannesburg 2002, by Poverty Alliance (Scotland) and Sustainable Development Policy Institute (Pakistan), published by IIED in collaboration with RING.
- Krueger, A. 1997. "Trade Policy and Economic Development: How We Learn." *American Economic Review* 87 (1): 1-22.
- Krugman, Paul and Maurice Obstfeld. 2002. *International Economics: Theory and Policy, 6th Edition*. Pearson Addison Wesley.
- Laderchi, Caterina R., Ruhi Saith and Frances Stewart. 2003. "Does it Matter that we do not Agree on the Definition of Poverty? A Comparison of Four Approaches." *Oxford Development Studies*, Vol. 31: No. 3, September 2003.
- Liddle, Bradley. 2001. "Free Trade and the Environment-Development System." *Ecological Economics*, 39 (2001) pp. 21-36.
- Lloyd, P.J. 2001. "The Architecture of the WTO." *European Journal of Political Economy*, Vol. 17: (2001) pp.327-353.
- Lopez, Ramon and Siddhartha Mitra. 2000. "Corruption, Pollutions and the Kuznets Environment Curve." *Journal of Environmental Economics and Management*, 40, 137-150.
- Lubeck, Paul M. 1992. "The Crisis of African Development: Conflicting Interpretations and Resolutions." *Annual Review of Sociology*, Vol. 18: pp. 519-40.
- Lucas, Robert E., Jr. 1988. "On the Mechanics of Economic Development," *Journal of Monetary Economics*, Vol. 22 (July): pp. 3-42.
- Malhotra, K. 1997. "Something Nothing Words: Lessons in Partnership from Southern Experience," in L. Hatley and K. Malhotra *Between Rhetoric and Reality: Essays on Partnership in Development*, pp. 37-56. Ottawa: North-South Institute.
- Matthews, Alan. 2001. "Developing Countries' Position in WTO Agricultural Trade Negotiations." *Development Policy Review*, 2001, 20 (1): 75-90.
- McGuire, Martin. 1982. "Regulation, Factor Rewards and International Trade." *Journal of Public Economics*, Vol. 17: pp. 335-54.
- McMillan, Margaret, Dani Rodrik and Karen Horn Welch. 2002. "When Economic Reform Goes Wrong: Cashews in Mozambique."
- McNally, R. 2001. No investment agreement within the WTO. Redirecting investment to promote sustainable development. WWF-International, Gland.
- Meier, G.M. 1995. *Leading Issues in Economic Development*. 6th edition. New York and Oxford: Oxford University Press.
- Moore, Donald. 1998. "Subaltern Struggles and the Politics of Place: Remapping Resistance in Zimbabwe's Eastern Highlands." *Cultural Anthropology*, 13 (3): 344-381.
- Moseley, William G. 2001. "African Evidence on the Relation of Poverty, Time Preference and the Environment." *Ecological Economics* 38 (2001) 317-326.
- Myers, Norman. 1988. "Threatened Biotas: Hotspots in Tropical Forests." *Environmentalist* 8(3), 187-208.
- Myers, Norman. 1990. "The Biodiversity Challenge: Expanded Hotspots Analysis." *Environmentalist* 10(4), 243-256.
- Nadal, A. 2000. The Environmental and Social Impact of Economic Liberalization on Corn Production in Mexico, Oxfam GB and WWF-International, Gland.
- Najam, Adil and N. Robins. "Seizing the Future: the South, Sustainable Development and International Trade." *International Affairs*, 77 (1): 93-111.
- Narayan, Deepa with Raj Patel, Kai Schafft, Anne Rademacher and Sarah Koch-Schulte. 2000. *Voices of the Poor: Can Anyone Hear Us?* New York, N.Y.: Published for the World Bank, Oxford University Press.
- Narayan, Deepa, Robert Chambers, Meera Kaul Shah, and Patti Petesch. 2000. *Voices of the Poor: Crying Out for Change*. New York, N.Y.: Published for the World Bank, Oxford University Press.
- Narayan, Deepa and Patti Petesch. 2002. *Voices of the Poor: From Many Lands*. New York, N.Y.: Published for the World Bank, Oxford University Press.
- Nash, June. 1994. "Global Integration and Subsistence Insecurity." *American Anthropologist, New Series*, Vol. 96: No. 1 (Mar. 1994), 7-30.
- Nelson, Paul and Ellen Dorsey. 2003. "At the Nexus of Human Rights and Development: New Methods and Strategies of Global NGOs." *World Development* Vol. 31: No. 12, pp. 2013-2026.
- North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. New York: Cambridge University Press.
- North, Douglas C. 1992. The New Institutional Economics and Development. John R. Commons lecture, American Economic Society Meetings, January 1992. Available at: <http://www.econ.iastate.edu/tesfatsi/NewInstE.North.pdf>
- Nussbaum, M. 2000. *Women and Human Development: A Study in Human Capabilities*. Cambridge, Cambridge University Press.
- OECD. 2003. "OECD Environmental Indicators: Development, Measurement and Use." Reference Paper. Also available at: <http://www.oecd.org/dataoecd/7/47/24993546.pdf>
- Oxfam. 2002. "5 Aims—A Rights Based Approach." Available at: [http://www.oxfam.org/eng/campaigns\\_aims.htm](http://www.oxfam.org/eng/campaigns_aims.htm)

Oxfam. 2002. Rigged Rules and Double Standards—Trade, Globalization and the Fight Against Poverty. Oxfam International. Available at: [http://www.maketrade-fair.com/assets/english/report\\_english.pdf](http://www.maketrade-fair.com/assets/english/report_english.pdf)

Oxfam. 2003. "Running into the Sand: Why Failure at the Cancún Trade Talks Threatens the World's Poorest People." Oxfam Briefing Paper No. 53, August 2003.

Pagiola, Stefano, Joshua Bishop and Natasha Landell-Mills, eds. 2002. *Selling Forest Environmental Services: Market-based Mechanisms for Conservation and Development*. London: Earthscan.

Palley, T.I. 2002. A New Development Paradigm: Domestic Demand-Led Growth. Why It is Needed and How to Make it Happen. Foreign Policy in Focus Discussion Paper.

Pamlin, Dennis. "The Architects of Globalization: the Multilateral Agreement on Investment and its Consequences." Forest, Trees and People Newsletter No. 36/37. Based on a report for Friends of the Earth, Sweden.

Pécoul, Bernard, P. Chirac, P. Trouiller and J. Pinel. 1999. "Access to Essential Drugs in Poor Countries: A Lost Battle?" *Special Communication, Journal of the American Medical Association (JAMA)*, Vol. 218: No. 4, January 27, 1999.

Peet, R. and M. Watts (Eds.). 1996. *Liberation Ecologies: Environment, Development, Social Movements*. London: Routledge.

Perrin, M. 1998. "Developing a Methodology for the Environmental Assessment of Trade Liberalization Agreements," WWF-International, Gland.

Poirier, Robert A. 2002. "Evicting People from Nature: Indigenous Land Rights and National Parks in Australia, Russia and the United States." *Natural Resources Journal*, Vol. 42: Spring 2002.

Public Citizen. 2001. "Water Privatization Case Study: Cochabamba, Bolivia." Available at: [http://www.citizen.org/documents/Bolivia\\_\(PDF\).PDF](http://www.citizen.org/documents/Bolivia_(PDF).PDF)

Rahman, Atiq. 2002. "Poverty and Environment Linkages: An Emerging Concern Needs Greater Attention and Focused Action." *UPDATE*, a Newsletter of the International Human Dimensions Program on Global Environment Change, Vol. 4: (2002). Bonn.

Ravallion, Martin. 2003. "The Debate on Globalization, Poverty and Inequality: Why Measurement Matters." Development Research Group, World Bank. World Bank Policy Research Working Paper 3038, April 2003.

Reardon, Thomas and Stephen A. Vosti. 1995. "Links Between Rural Poverty and the Environment Links in Developing Countries: Asset Categories and Investment Poverty." *World Development*, Vol. 23: No. 9, pp. 1495-1506. Elsevier Science Ltd., Great Britain.

Reed, D. 2001. Poverty is Not a Number; the Environment is not a Butterfly WWF-MPO.

Reed, D. 1996. *Structural Adjustment, the Environment and Sustainable Development*, Earthscan Publications, London.

Reitbergen, Simon, Joshua Bishop and Sue Mainka. 2002. "Ecosystem Conservation—A Neglected Tool for Poverty Reduction." Prepared for the WSSD, Johannesburg 2002 by IISD in collaboration with RING.

Reyers, Belinda, A. Jaarsveld, M. McGeoch and A. James. 1998. "National Biodiversity Risk Assessment: A Composite Multivariate and Index Approach." *Biodiversity and Conservation*, 7: 945-965. Chapman and Hall.

Riain, Seán Ó. 2000. "States and Markets in an Era of Globalization." *Annual Review of Sociology* 2000, 26:187-213.

Ring Alliance. 2003. "The Development Dimensions of the UN Global Compact." Prepared for the Secretariat of the UN Global Compact. July 2003.

RING Partners. 1999. "Developing Countries and Multilateral Environmental Agreements (MEAs)." Pooled research from RING Partners, report prepared by Adil Najam for the Sustainable Development Policy Institute (SDPI), Islamabad, Pakistan.

Rodriguez, Francisco and Dani Rodrik. 2000. "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence." Working Paper, May 2000.

Rodrik, Dani. 2003. "Growth Strategies." For the *Handbook of Economic Growth*, forthcoming. September 2003.

Rodrik, Dani. 2001. "The Global Governance of Trade as if Development Really Mattered." For UNDP, Trade and Sustainable Human Development Project. October 2001.

Rojas, M. and B. Aylward. 2003. "What are we Learning from Experiences with Markets for Environmental Services in Costa Rica? A Review and Critique of the Literature." International Institute for Environment and Development (IIED), London.

Roy, Arundhati. 1999. "The Greater Common Good." *Outlook*, May 24, 1999. Available at: <http://www.outlookindia.com/>

Salafsky, Nick and Eva Wollenberg. 2000. "Linking Livelihoods and Conservation: A Conceptual Framework and Scale for Assessing the Integration of Human Needs and Biodiversity." *World Development*, Vol. 28: No. 8, pp. 1421-1438.

Schorr, David. 2000. "Evidence of Poor Transparency in Fishing Subsidies." WWF-US.

Sen, Amartya. 1983. "Poor, Relatively Speaking." Oxford Economic Papers, New Series, Vol. 35: No. 2 (July 1983), 153-169.

Sen, Amartya. 1989. "Development as Capabilities Expansion." *Journal of Development Planning*.

Sen, Amartya. 1999. "Development as Freedom." *Oxford University Press*.

Sen, Amartya. 2002. "Globalization, Inequality and Global Protest." *Development*, 45:2, pp. 11-16.

Shiva, Vandana. 1997. *Biopiracy: The Plunder of Nature and Knowledge*. South End Press.

Shiva, Vandana. "Globalization and Growing Food Insecurity: the Case of Agriculture in India." *Forest, Trees and People Newsletter*, No. 36/37.

Shyamsundar, Priya. 2002. "Poverty-Environment Indicators." Environmental Economics Series. Paper No. 84. World Bank, Washington D.C.

Sierra Club. 2000. Defending Environmental Defenders. Available at: <http://www.sierraclub.org/human-rights/amnesty>



- Smith, Lisa. 2001. "The Use of Household Expenditure Surveys for the Assessment of Food Insecurity." International Food Policy Research Institute, Washington, DC.
- Solow, R. M. 1956. "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics*, Vol. 70: (1) pp. 65-94.
- Southgate, Douglas, Pablo Salazar-Canelos, Carlos Camacho-Saa and Rigoberta Stewart. 2000. "Markets, Institutions and Forestry: The Consequences of Timber Trade Liberalization in Ecuador." *World Development*, Vol. 28: No. 11, pp. 2005-2012.
- Stiglitz, Joseph E. 2002. *Globalization and its Discontents*. Penguin and W.W. Norton.
- Stockholm Environment Institute and the Global Scenario Group. 1998. Bending the Curve: Toward Global Sustainability. Available at: [http://www.tellus.org/seib/publications/bendingthe\\_curve.pdf](http://www.tellus.org/seib/publications/bendingthe_curve.pdf)
- Stockholm Environment Institute and the Global Scenario Group. 2002. Great Transition: The Promise and Lure of the Times Ahead. Available at: [http://www.tellus.org/seib/publications/Great\\_Transitions.pdf](http://www.tellus.org/seib/publications/Great_Transitions.pdf)
- Sullivan, Caroline. 2002. "Calculating a Water Poverty Index." *World Development*, Vol. 30: No. 7, pp. 1195-1210.
- Surin, Kenneth. 1998. "Dependency Theory's Reanimation in the Era of Financial Capital." *Cultural Logic*, Vol. 1: No. 2, Spring 1998.
- Swanson, P. and L. Lunde. 2003. "Public environmental expenditure reviews (PEERS): Experience and emerging practice." *Environment Strategy Paper 7*. Washington D.C., World Bank.
- Szelényi, Iván and Eric Kostello. 1996. "The Market Transition Debate: Toward a Synthesis?" *American Journal of Sociology*, Vol. 101: No. 4 (January 1996): pp. 1082-96.
- Takasaki, Yoshito, Bradford Barham and Oliver Coomes. 2000. "Rapid Rural Appraisal in Humid Tropical Forests: An Asset Possession-Based Approach and Validation Methods for Wealth Assessment Among Forest Peasant Households." *World Development*, Vol. 28: No. 11, pp. 1961-1977.
- Taylor, Jerry. 2002. "Sustainable Development: A Dubious Solution in Search of a Problem." *Policy Analysis*, Cato Institute, August 26, 2002.
- The International Cancún Declaration of Indigenous Peoples, 5th WTO Ministerial Conference, Cancún, Quintana Roo, Mexico, 12 September 2003.
- Tisdell, Clem. 2001. "Globalisation and Sustainability: Environmental Kuznets Curve and the WTO." *Ecological Economics* 39 (2001) 185-196.
- Tuijl, Peter van. 2000. "Entering the Global Dealing Room: Reflections on a Rights-based Framework for NGOs in International Development." *Third World Quarterly*, Vol. 21: No. 4, pp. 617-626.
- UNDP. Human Development Report 2000. Available at: <http://www.undp.org/hdr2000/english/HDR2000.html>
- UNEP. 2000. Environment and Trade: A Handbook. Published by IISD, Winnipeg. Available at: [http://www.iisd.org/pdf/envirotrade\\_handbook.pdf](http://www.iisd.org/pdf/envirotrade_handbook.pdf)
- UNEP. 2002. Global Environment Outlook 3: Past, Present and Future Perspectives. Earthscan Publications, U.K. and U.S.A. Available at: <http://www.unep.org/geo/geo3/index.htm>
- UNEP. 2003. "Ecosystem Approach: Further Elaboration, Guidelines for Implementation and Relationship With Sustainable Forest Management." Report of the Expert Meeting on the Ecosystem Approach, presented at Montreal, 29 September 2003.
- United Nations, Office of the High Commissioner for Human Rights. 2004. Human Rights and Poverty Reduction: A Conceptual Framework. United Nations, New York and Geneva. Available at: <http://www.unhchr.ch/html/menu6/2/povertyE.pdf>
- United Nations, Office of the High Commissioner for Human Rights. 2003. "Review of Developments Pertaining to the Promotion and Protection of Human Rights and Fundamental Freedoms of Indigenous People, Principle Theme: Indigenous Peoples and Globalization." Note by the Secretariat, Sub-Commission on the Promotion and Protection of Human Rights, Working Group on Indigenous Populations, Twenty-first session, 21-25 July 2003. *E/CN.4/Sub.2/AC.4/2003/2, 16 June 2003*. Available on-line at: <http://www.unhchr.ch/indigenous/WGdocuments.htm-globalizationwp>
- United Nations. 2003. Handbook of National Accounting: Integrated Environmental and Economic Accounting 2003 (SEEA 2003). Available at: <http://unstats.un.org/unsd/envAccounting/seea2003.pdf>
- Wade, R. 1988. "The Role of Government in Overcoming Market Failure: Taiwan, Republic of Korea and Japan." In H. Hughes, ed., *Achieving Industrialization in East Asia*. Cambridge, UK: Cambridge University Press.
- Wade, R. 2003. "Is Globalization Reducing Poverty and Inequality?" *World Development*, Vol. 32: No. 4, pp. 567-589. Elsevier, Great Britain.
- Wallerstein, Immanuel. 1974. "The Modern World-System: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century". New York: Academic Press.
- Ward H. 1996. Trade Measures and Multilateral Environmental Agreements: Backwards or forwards in WTO? WWF-International, Gland.
- Weisbrot, Mark and Dean Barker. 2002. "The Relative Impact of Trade Liberalization on Developing Countries." Center for Economic and Policy Research. June 12, 2002. Available at: [http://www.cepr.net/relative\\_impact\\_of\\_trade\\_liberal.htm](http://www.cepr.net/relative_impact_of_trade_liberal.htm)
- Wilder, Margaret. 2000. "Border Farmers, Water Contamination and the NAAEC Environmental Side Accord to NAFTA." *Natural Resources Journal*, Vol. 40: Fall 2000.
- Winters, L. Alan, N. McCulloch and A. McKay. "Trade Liberalization and Poverty: the Evidence So Far." *Journal of Economic Literature*, Vol. XLII: (March 2004) pp. 72-115.
- Woods A. et al. 1998. *The Root Causes of Biodiversity Loss* Earthscan Publications, London.
- World Bank. Environmental Assessment Sourcebook 1991 and Updates. 1991. <http://lnweb18.worldbank.org/ESSD/envext.nsf/47ByDocName/ToolsEnvironmentalAssessmentSourcebookandUpdates>

- World Bank. 1999. *Greening Industry: New Roles for Communities, Markets, and Governments*. Washington: World Bank
- World Bank. 2001. *Making Sustainable Commitments: An Environmental Strategy for the World Bank*. Washington, DC.
- World Bank. 2003. *Sustainable development in a dynamic world: Transforming institutions, growth, and quality of life. World Development Report 2003*. Washington: World Bank ; New York: Oxford University Press.
- World Bank. 2002. *Global Economic Prospects and the Developing Countries 2002*.  
<http://www.worldbank.org/prospects/gep2002/>
- World Resources Institute. 2004. "World Resources 2002-2004: Decisions for the Earth: Balance, Voice and Power." Available at: [http://pubs.wri.org/pubs\\_pdf.cfm?PubID=3764](http://pubs.wri.org/pubs_pdf.cfm?PubID=3764) Data available at: <http://earthtrends.wri.org/>
- World Resources Institute. 2003. *Millennium Ecosystem Assessment: Ecosystems and Human Well-Being, A Framework for Assessment*. Island Press.
- WWF MPO. 2000. "A Resource Book: Trade Liberalization, Agriculture and the Environment." Washington DC, June 2000.
- WWF-International; CIEL; IATP; Action Aid—FoE International; Oxfam "Open Letter on Institutional Reforms in the WTO".
- WWF-Oxfam- CIEL- CNI. 1998. "Dispute Settlement in the WTO: A Crisis for Sustainable Development." WWF-International, Gland.
- Xing, Yuqing and Charles D. Kolstad. 1996. "Environment and Trade: A Review of Theory and Issues." University of California, Santa Barbara, Working Papers in Economics, January 1996.
- Yanikkaya, Halit. 2003. "Trade Openness and Economic Growth: A Cross-country Empirical Investigation." *Journal of Development Economics* 72 (2003) 57-89.
- Yunus, Muhammad, with Alan Jolis. 1998. *Banker to the Poor*. The University Press Limited, Dhaka, Bangladesh.
- Zarsky, L. and Gallagher K. 2003. "Searching for the Holy Grail? Making FDI work for Sustainable Development." WWF-International, Gland.



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