# Globalization and Poverty: An Ecological Perspective

**A policy paper by**

**Roldan Muradian and Joan Martinez-Alier**

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# FOREWORD

*We are determined to make globalization work for all our citizens and especially the world's poor. Drawing the poorest countries into the global economy is the surest way to address their fundamental aspirations.*
G-8 Summit Statement, Genoa 2001

In the run-up to the 2002 World Summit on Sustainable Development in Johannesburg, the challenges of globalization and the imperative of poverty eradication are key issues.

"Making globalization work for all" seems to be the consensus formula that strives to address the concerns of an increasing number of citizens across the world. To this end, the increased integration of developing countries into the global economy is put forward as the only way forward.

This World Summit Paper challenges this conventional wisdom and develops a different perspective: one that focuses on ecological economics. The authors argue that (1) the way in which a country integrates itself into the global economy represents a crucial decision, and (2) many developing countries are losing out both economically and ecologically by specializing in the export of natural resources. In addition, the authors state that the costs and benefits of the export of natural resources are distributed highly unequally within developing countries. The rural poor are affected most by the destruction of natural resources (including forests, soils, pastures, rivers, etc.) through activities such as mining, logging, etc., and by the appropriation of these resources for export production. Conversely, benefits are concentrated in the hands of a small number of companies, the state, and possibly the middle class.

If analyzed in this way, the apparent contradiction between an ever-growing, ever-expanding global economy and increasing levels of poverty in the South vanishes.

We believe that this paper will contribute to the necessary debate, taking place during the run-up to the Johannesburg Summit, over which strategies (1) can contribute most effectively to the eradication of poverty on our planet and (2) are most conducive to steering globalization in a more sustainable direction.

November 2001

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# ABSTRACT

This paper discusses the possible environmental and developmental effects of globalization in developing countries that specialize in the extraction of natural resources. Since (1) mining is among the most environment-intensive sectors of the economy and (2) the extension of the agricultural frontier usually implies degradation of very valuable habitats, a “peripheralization” of the environmental burdens of material consumption may occur when developing countries integrate themselves into the world economy through primary sector expansion. Moreover, the deterioration of commodity prices due to oversupply may force countries to export ever-increasing quantities of resources in order to maintain revenues; such policies would likely entail increased environmental impacts. Deteriorating prices also increase poverty. Therefore, we argue that primary exports may cause countries to become caught within a trap of poverty and environmental degradation, a situation that may exacerbate the income gap at a global level. The paper concludes with several broad policy alternatives.

# GLOBALIZATION AND POVERTY: AN ECOLOGICAL PERSPECTIVE

## 1. Introduction

Does increasing integration into the world economy represent an engine for development, no matter how countries choose to achieve this integration? How will the economic and environmental costs and benefits of globalization be allocated internationally? Which policies are suitable for correcting global income inequality? This paper examines these questions from a political ecology perspective. Our analysis is very broad in scope, and several matters are covered (not always in complete depth). We revisit the structuralist paradigm of development, taking environmental issues into consideration and providing relevant empirical data. In addition, we introduce a general framework for addressing distributional issues within North-South economic and environmental relations. The paper begins by discussing the vision of Bretton Woods institutions on the subject of international economic integration. Subsequent sections (2-5) argue that the Bretton Woods approach can be contested if one takes into consideration both income inequalities as well as the peripheralization of the environmental burdens of global-level material consumption. Section 6 discusses the environmental and developmental consequences of policies that expand natural resource exports as a means for achieving increased integration into the world economy. The case of Latin America is discussed in some detail in Section 7. Section 8 focuses on the role of transnational corporations and financial flows in the distribution of profits in a context of economic liberalization. The paper concludes with alternative policy suggestions that maintain the goal of preventing increased income inequality and environmental burden displacement as consequences of globalization.

## 2. Bretton Woods Optimism, Southern Pessimism?

At least until September 2001, it appears that the Western world has entered the 21st century with a sense of optimism. Several facts support this optimistic sense of prosperity and are largely related to the economic and technological performance of the industrialized world in recent decades. During this period, affluent countries have witnessed almost relentless economic growth. New inventions and discoveries, such as the Internet and the human genome, have paved the way to a "new economy." Capitalism has consolidated its position as the leading economic system, and gross world product has grown rapidly since 1986, a fact which is explained by increasing global trade liberalization and capital migration. Moreover, since the Second World War, there have been no violent conflicts between former enemies in Europe and Asia, and authoritarian governments seem impossible in the capitalist core of the world. Furthermore, environmental issues, which three decades ago constituted the main point of criticism to the idea of limitless growth, are nowadays viewed as fully compatible with market-based economic expansion. Economic growth is seen as the best cure for the environmental consequences of economic growth. Based on empirical evidence, most economists per-

ceive trade and global economic integration as engines of growth (Edwards, 1993). Therefore, globalization and free trade policies are compatible with sustainable patterns of development (Bommer and Schulze, 1999). Even if export expansion entails the increasing exploitation of natural resources, mainstream thought views export promotion as desirable because it allows both (1) the use of resources that would remain idle in the absence of trade and (2) the establishment and enlargement of backward and forward links between primary and other sectors of the economy. These processes are believed to induce higher rates of aggregate income growth and a progressive shift toward economic activity based on manufacturing and the provision of services (Xu, 2000). Classic examples of this kind of development based on natural resource exports include Australia, Scandinavia, and Canada, as the "staple" theory of growth proclaimed long ago.

The market is generally viewed as the most appropriate arena for resolving environmental externalities that arise precisely due to "market failures." Thus eco-efficiency can be reached through economic growth and market liberalization. Furthermore, material scarcity is no longer perceived as a threat to the global economy. First, the material and energy intensity of economic output has decreased in industrialized nations due to technological innovation. Second, sufficient mineral reserves have been identified, at least for the next century (Hodges, 1995). Third, technological improvements in recent decades, which have enabled the development of substitutes for relatively scarce minerals, warrant the optimistic idea that mineral constraints on production can be overcome for an indefinite period (Mikesell, 1994).

Neoclassical theory predicts that rates of return to capital diminish as it becomes more abundant relative to labor. Since capital in developing countries is in scarce supply, its rates of return should exceed that in industrial countries. Thus, in the absence of barriers, capital will migrate from rich to poor regions in search of higher rates of return, raising growth rates in developing countries and closing the income gap between the developing and industrialized worlds (UNCTAD, 1999a). Therefore most of the benefits of globalization will be located in developing countries because a convergence of income at a global level is expected (Park and Brat, 1995). A reduction of income inequality within poor countries is also expected due to an expanded supply of workers possessing basic skills (Williamson, 1997). This optimistic vision of future global economic and environmental performance, which has been labeled the "Bretton Woods paradigm" (Therien, 1999), is shared by many politicians (in the North and South), mainstream economists, and international institutions such as the World Bank, the WTO, and the IMF. This vision has also determined the tone of globally influential documents on the economy-environment relationship, such as the Brundtland report (Doyle, 1998).

Nonetheless, this optimistic vision is challenged by several remarkable facts. First, the gap in per capita income between the world's poorest and wealthiest populations, and between developed and developing geographic regions, has increased continuously since the 1970s (UNDP, 1997; WRI, 1999). Second, most developing countries are experiencing economic decline, stagnation, or slower growth than industrialized nations (Broad and Melhorn Landi, 1996). Income inequality is increasing not only at the global level; it is also increasing within many developing nations and, surprisingly, even within industrialized countries such as the United Kingdom and the United States (Atkinson, 1999). Third, violent conflicts, famines, and autocratic governments are still common in the Third World. Fourth, while forested areas are generally expanding

within developed countries, the rates of species extinction and deforestation are considerably high in poor regions of the world. Fifth, the AIDS epidemic has assumed dramatic and unpredicted dimensions in Africa, partly as a consequence of property rights on medical products in developed countries. Finally, international aid is decreasing, and recurrent economic crises have occurred in the semi-periphery of the world economy, affecting "emerging" countries such as Mexico, Argentina, Brazil, Turkey, Indonesia, Korea, Malaysia, Philippines, Thailand, and Ecuador.

Most of these economic problems are viewed by the optimistic mainstream as the result of misguided economic policies implemented in the past, such as import substitution and inward-oriented development strategies. Hence the "Washington consensus" – adjustment reforms promoting market liberalization and increasing integration into the world economy – is proposed as the best path available to developing countries (Baer and Maloney, 1997). The generalized application of this strategy, it is believed, will generate a new world order of widespread prosperity.

## 3. North-South Relations: An Outdated Subject?

Currently, North-South relations are less a topic of debate than they were 30 years ago, at least within the literature on development economics, political economy, and international relations. However, North-South relations are central to the "alternative globalization" movement – from Seattle 1999 to Genoa 2001 – as well as to certain global concerns such as the greenhouse effect and migration.

Social scientists have lost interest in North-South relations for several reasons. First, the emergence of newly industrialized countries in Southeast Asia blurred the boundary between the developing and industrialized worlds and cast doubt upon theories that posited "underdevelopment" as a consequence of the international order. The success of market- and outward-oriented developing economies challenged the validity of structuralist and neo-Marxist development paradigms as well as dependency analyses of North-South economic relations. Second, direct Western domination of foreign territories is now a less common phenomenon than during the 1960s and 1970s. Consequently, concepts such as "imperialism" or "colonialism" have almost disappeared from scholarly literature. Third, following the demise of communism in Europe, the Third World is no longer an area of contestation between two competing systems. As a result, the group of non-aligned states, one of the few forums representing the interests of the developing world, lost political relevance and power.

Notwithstanding these developments, the evidence of continuous and increasing income inequality between the world's poor and rich regions makes it impossible to cast aside the North-South debate as an outdated issue. Perhaps the North-South division should be reinterpreted so that it no longer signifies a division between countries but rather a division between the poor and rich people of the world, regardless of whether they live in countries classified as "developing" or "industrialized." There is a "South" in affluent countries as well a "North" within poor areas of the world. The division can be also conceived of as a conflict between a limited number of large financial entities on one side (i.e., owners of transnational corporations responsible for the bulk of stock market

transactions) and low-skilled workers and "informal" economic agents, including subsistence economies, on the other.

## 4. North-South Financial Flows, South-North Physical Flows

As stated above, neoclassical theory predicts increasing capital flows from rich to poor regions of the world. However, despite the foreign investment boom witnessed in developing countries in the 1990s, most current capital flows still occur among developed countries. In 1997, approximately 70% of world foreign direct investment was directed toward industrialized countries. Of the 30% that was directed toward the developing world, approximately 45% represented direct investment in the productive sector. The remainder was comprised of portfolio investments and loans (World Bank, 2000). Another important characteristic of investment in poor, developing areas is the fact that it is highly concentrated. For example, in 1997, 73% of total foreign direct investment in developing regions was localized within 10 countries (World Bank, 2000). From 1983-1988, the least developed countries (the 50 poorest countries in the world) received only 1.7% of total foreign direct investment in developing regions. During the period 1992-1994, this share fell to 1.1% (UNCTAD, 1996). Thus capital flow to poor regions is concentrated in small countries with high growth rates or in large, fast-growing low-income or middle-income countries – that is, within the semi-periphery of the world economy. The causes of this concentration appear to be related to the classic centripetal forces that determine the location of production: market size effects and the size of the labor supply (Milberg, 1998; Krugman, 1998). These features leave most developing countries outside the area of interest to international capital flows.

The real periphery of the world economy – the least developed countries – may be attractive to foreign capital not because of high rates of capital return or large potential markets, but because of their richness in natural resources. In fact, in Africa for example, most foreign direct investment is concentrated in a small number of countries endowed with natural resources, particularly oil (Wangabe and Musonda, 1998). Although the primary sector accounts for only 20% of overall flows of foreign direct investment to developing countries, expenditures on exploration for nonferrous minerals doubled in Latin America, nearly tripled in the Pacific region, and more than tripled in Africa from 1994-1997, while leveling off in Australia, Canada, and the United States (French, 1998).

Some recent data suggest that the ratio of pollution-intensive industries (chemicals, pulp and paper, fuels, and metals) in foreign direct investment stock is higher than that in domestic investment (UNCTAD, 1999a). This can be related to increasing foreign dependency on natural resources in the developed world. The U.S. Bureau of Mines (1994) reports that U.S. and Canadian mining interests are shifting significantly toward Latin America. Economic and environmental difficulties experienced by mining and mineral processing industries in industrialized nations are likely to be important factors that encourage the migration of this sector toward the periphery. Indeed, the U.S. Department of Commerce (1999) states in a recent report that the U.S. mining sector has experienced declining earnings since the late 1980s. This report also asserts that the

most significant factors currently affecting the U.S. mining industry are access to public lands for exploring mineral deposits and environmental regulations.

The energy costs of mineral processing also represent an important force driving decisions on the location of new plants. This has been proposed as the main reason that no aluminum smelters have been constructed in the United States since 1980. The increasing demand for this metal has instead been met by import supplies. In the United States, domestic primary ingot production fell from 4.03 million metric tons in 1989 to 3.85 million metric tons in 1998. During the same period, U.S. ingot imports increased from 0.93 to 2.15 million metric tons (U.S. Department of Commerce, 1998). The displacement of the aluminum industry is a typical example of how industrialized host countries respond to the environmental consequences of various industries – smelters are usually associated with hydropower plants that frequently involve the flooding of large areas of valuable habitat. Moreover, aluminum smelting generates air pollution by fluorine. It also produces large amounts of caustic wastes, called "red mud" (containing toxic oxides), which are hard to dispose of or to utilize (Masini and Ayres, 1996). Increasing environmental concerns and stricter environmental legislation in the developed world may create serious problems for mining companies seeking to build new mines or processing plants, unless such mines or plants are built in very isolated locations. This appears to be the case in Canada and Australia, where mines are often located at great distances from populated areas.

There is evidence that the material intensity of GDP decreases over time in industrial economies (Ruth, 1998). Therefore, a relative "dematerialization" of the economy is expected. Nevertheless, developed economies generally consume ever-increasing quantities of materials in absolute terms (Adriaanse et al., 1997). Conversely, most developing countries still specialize in the export of natural resources (Barbier, 1999). Although exports of manufactured goods have increased considerably as a share of developing nations' aggregate exports, the production of these labor- or technology-intensive manufactured goods is confined to a limited number of countries located primarily in Southeast Asia (Lall, 1998). Table 1 shows that the core of the world economy is, in general, a net importer of ores and semi-processed metals. The bulk of these imported materials comes from developing countries; during the late 1980s, developing countries surpassed the industrialized world in the production of ores and semi-processed metals (see Figure 1). Figure 2 shows that while Northern imports of ores from developing countries decreased during the mid-1970s, probably due to the end of the long economic boom in the North, such imports have once again increased. Figure 2 also shows that Northern imports of Southern semi-processed metals have increased continuously during the past decades; the increase has been especially rapid during the 1990s. These figures reveal that developing countries are adding some value (and some local pollution) to their exports of materials.

**Table 1**

## Trade Balance of Metals (1997)

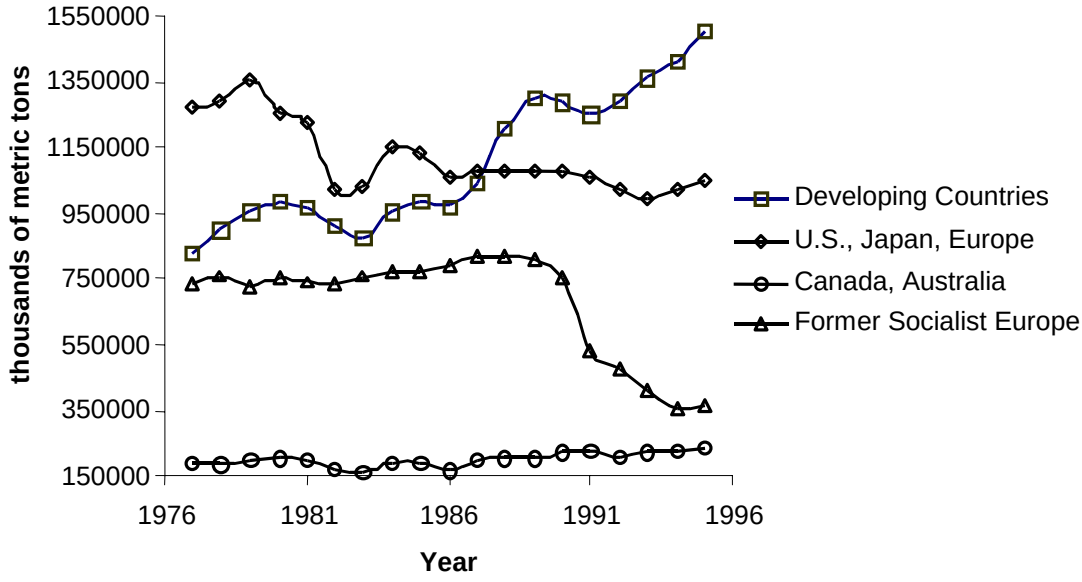
### Imports minus Exports

**Thousands of Metric Tons**

| | U.S. | Western Europe | Japan |
|---|---|---|---|
| **Ores** | | | |
| zinc | -374,1 | 1177,8 | 512 |
| tin | -0,46 | -5,8 | 0 |
| nickel | 41,5 | 32,8 | 77,5 |
| lead | 87,8 | 106,6 | 116 |
| copper | -83,4 | 433,9 | 1159,1 |
| bauxite | 12020 | 10794 | 1995 |
| iron | 12263 | 116709 | 126600 |
| **Semi-Processed** | | | |
| zinc | 860,2 | 104,3 | 159,8 |
| tin | 31,8 | -870,6 | -678,42 |
| nickel | 134,1 | 573,5 | 103 |
| lead | 116,5 | 302,9 | 24,8 |
| copper | 594,5 | 1641,2 | 18,3 |
| aluminum | 3987,2 | 3776,8 | 2816,7 |

*Source: Calculations based on the Handbook of World Mineral Trade Statistics (UNCTAD).*

**Figure 1. World Production of Metals**
**Ores and Semiprocessed**




*Source: Authors' calculations based on the U.N. industrial statistics yearbook, various issues.*

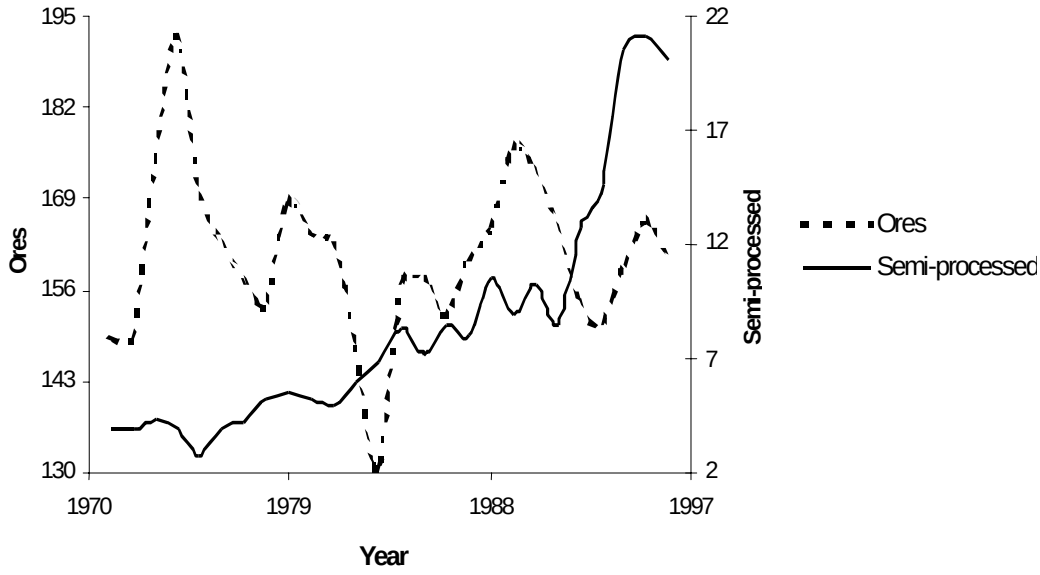
Ores: iron, nickel, copper, bauxite, lead, zinc, tin, manganese, chromium, tungsten, ilmenite, molybdenum, tantalum, niobium, vanadium, zirconium, antimony, cobalt, mercury, silver, uranium, gold.

Semi-processed: iron-steel, copper, nickel, aluminum, lead, zinc.

Developing countries: low- and middle-income countries (World Bank, 1998) excluding former socialist Europe.

**Figure 2. Aggregate Metal Imports from Developing Countries by U.S., Japan and Europe***

**Millions of Metric Tons**




* France, Germany, Italy, Netherlands, U.K., Denmark, Sweden, Ireland, Spain

*Source: Authors' calculations based on the World Trade Annual (U.N.), various issues.*

Ores: iron, copper, nickel, bauxite, lead, zinc, and tin.

Semi-processed: iron-steel, copper, nickel, aluminum, lead, zinc, and tin.

Developing countries: low- and middle-income countries (World Bank, 1998) excluding Russia, Eastern Europe, and central planning economies.

The South-North flow of renewable resources is dominated by products that are too costly to produce in temperate regions of the world, e.g., coffee, soybeans, and shrimp. Thus apart from low-tech and labor-intensive manufactured goods from Southeast Asia, China, Mexico, and Brazil, the greater part of South-North commercial transactions consists of exports of mineral (including oil and gas) and tropical commodities in exchange for services and capital- or technology-intensive products. That is, many developing countries still function within the world economy primarily as suppliers of natural resources. Mining, petroleum extraction, and the processing of materials are among the most environment-intensive sectors of the economy in terms of abatement costs, pollutant emissions, land removal, and habitat degradation (Mani and Wheeler, 1997; Tobey, 1990). Furthermore, the expansion of the frontier of tropical crops and tree plantations is commonly associated with the deforestation of highly biodiverse habitats. Thus the expansion of primary exports as a means for achieving integration within the world economy may have severe environmental consequences for many developing countries.

## 5. The International "Peripheralization" of Environmental Burdens

The North-to-South migration of mining and material processing is facilitated by high unemployment rates, heavy debt obligations, a scarcity of capital, and an abundance of low-cost labor and natural resources in poor areas of the world, which are often interested in attracting foreign capital for the exploitation of resources. In fact, approximately 70 developing countries have modified their mining laws in recent years in order to attract foreign investment (French, 1998). Mines and mineral processing plants are typical instances of "Locally Unwanted Land Uses" (LULUs). According to Blowers and Leroy (1994), a process of "peripheralization" occurs inside a country when LULUs are displaced to remote, powerless, and economically marginal locations. Due to a scarcity of options and asymmetries in power, peripheral communities may be forced to accept enterprises that provide immediate benefits in terms of income or employment regardless of longer-term risks. The consequence is that these marginal areas may bear a disproportionate share of the burden of environmental degradation or risk resulting from industrial processes. The "peripheralization" approach has been used to analyze national-level decisions on the location of mineral industries (Cowell and Owens, 1998). However, this analysis may be extended to the international level. Indeed, Blowers and Leroy (1994) point out that "the process of dominance and dependence or power and powerlessness which characterizes the process of peripheralization at sub-national levels can also be perceived at an international level." As the frontiers of mineral exploration are pushed back, mining companies are moving increasingly to remote areas of the world (Crowson, 1997). This expansion typically occurs through mega-projects that often (1) exclude local populations from the locational decision-making process, (2) generate important land use conflicts, and (3) infringe upon the rights of indigenous people (Ciccantel, 1999; Mittelman, 1998). As a result, the number of local movements to resist environmentally damaging projects has increased.

At a global scale, it is possible to conceptualize core-periphery relations not only in economic and technological terms, but also in "ecological" terms. In this latter sense, the periphery provides natural resources and bears the bulk of the environmental burdens and risks that result from material consumption by the core. This ecological component also includes the disproportionate "environmental space" occupied by developed countries due to greenhouse gas emissions, a topic that is not addressed in this paper. The displacement of the environmental burden to the periphery may jeopardize the periphery's development opportunities due to pollution-induced health problems and the degradation of natural habitats that often provide the means of subsistence for local rural populations. Alteration of these habitats may also imply the loss of useful and unknown genetic resources as well as attractive landscapes, both of which may constitute the basis for alternative paths of development. Since most of the world's remaining biodiversity is located in tropical developing countries, the process of peripheralization may entail significant costs to future generations due to the loss of genetic resources.

Moreover, the displacement of the environmental burden of local consumption – a process enabled by globalization – may prevent lay people in the North from understanding their participation in the process of environmental change. This is significant in determining their patterns of consumption and behavior toward the environment (Norgaard, 1999). In this sense, globalization may promote the political acceptability of very unsustainable ways of production and consumption (Paterson, 1999).

It must be said that not all environmental problems in developing areas are related to trade. There are many internally generated causes of environmental degradation, including population growth, misguided waste disposal policies, uncontrolled urbanization processes, etc. However, since outward-oriented strategies of development are widespread (and, moreover, strongly recommended by international institutions with significant leverage, such as the World Bank and the IMF), we can expect an unequal distribution of the environmental burdens arising from increasing global economic integration.

## 6. Primary Exports, Comparative Advantages, and the Specialization Trap

Singer (1950) and Prebisch (1950) argued that, compared to primary commodities, the manufactured goods market tends to be oligopolistic. Both authors also stated that labor unions tend to have greater power in developed countries, a fact that enables them to appropriate the gains derived from productivity improvements vis-à-vis workers in developing countries. They pointed out that these features induce both a decline in the prices of primary commodities as well as a long-run deterioration in the terms of trade of developing countries. In the 1950s, structuralist economists used empirical evidence on the deteriorating terms of trade of developing countries as an argument to support import substitution industrialization, or ISI (Singer, 1984). Recent studies that test the Singer-Prebisch hypothesis arrive at mixed results, depending on the data and econometric model used (Athukorala, 2000; Bloch and Sapsford, 2000; Lutz, 1999; Muñoz and Sosvilla, 1993). Nonetheless, several authors (Sarkar and Singer, 1991; Maizels; 2000; Kaplinsky, 2001) argue that, during recent decades, an increasing number of producers in developing countries have acquired the capability to produce low-technology manufactures. This has been accompanied by systematic efforts on the part of international financial entities to locate and foster low-cost sources of supply. The result has been a tendency toward systematic overproduction. These processes force down the value of non-scarce factors, especially natural resources and labor, producing deteriorating terms of trade for both primary exports as well as labor-intensive manufactured exports from developing countries.

Prices of most exported primary commodities have not increased in recent decades. Table 2 shows 1977 and 1994 prices for several metals and tropical crops. During this period, all commodities experienced substantial price decreases. The causes of these price decreases are many, but oversupply and low elasticity of demand for these products in the developed world (due to technology improvement in the case of minerals and low population growth in the case of tropical crops) seem to have played an important role. Outward-oriented development strategies and heavy debt burdens may encourage overproduction of natural resources. In fact, Sen (1993) found that debt service obligation is an important determinant of the export supply of metals and minerals in some highly indebted Latin American countries.

**Table 2**

## Free Market Prices of Commodities

**U.S. 1987 $ per Metric Ton**

| | 1977 | 1994 |
|---|---|---|
| **Sugar** | 326,5 | 208,5 |
| **Bananas** | 496,7 | 346,3 |
| **Coffee** | 12402,1 | 2735,2 |
| **Cocoa** | 6919,2 | 1101,4 |
| **Tea** | 4913,1 | 1437,1 |
| **Coconut oil** | 1056,1 | 479,2 |
| **Palm oil** | 968,1 | 416,8 |
| **Phosphate rock** | 69,4 | 30,0 |
| **Manganese ore** | 269,4 | 167,2 |
| **Iron ore** | 34,5 | 20,7 |
| **Aluminum** | 2089,2 | 1165,0 |
| **Copper** | 2649,5 | 1858,2 |
| **Lead** | 1236,0 | 639,6 |
| **Zinc** | 1385,0 | 844,0 |
| **Nickel** | 8394,4 | 4908,7 |
| **Tin** | 19708,5 | 4307,8 |
| **Tungsten** | 311,7 | 33,4 |

*Source: UNCTAD commodity yearbook.*

Price deterioration is probably one of the main reasons for the slower economic growth rates that developing countries specializing in natural resource exports experience relative to developing countries specializing in manufactures (i.e., Africa and Latin America vis-à-vis parts of Southeast Asia and China). Furthermore, the primary sector has intrinsic characteristics that may produce low economic dynamism in the long term. First, especially in the case of mining, the primary sector is not labor-intensive. Therefore, lower unemployment levels do not always accompany the expansion of primary production. In addition, the primary sector is not technology-intensive. Thus specialization in the exploitation of natural resources does not promote investment in research and development, thereby preventing innovation (a significant factor in promoting economic growth) and delaying the emergence of manufacturing. Furthermore, since primary production is not human capital intensive, it does not promote the acquisition of educa-

tional skills among the population. Analysts have proposed that this is a cause of both economic stagnation as well as high levels of income inequality at the national level (Leamer et al., 1999). Additionally, there is empirical evidence showing that the growth of primary exports has little or no external impact on the non-export sector that constitutes the bulk of the economy in most developing countries (Fosu, 1996).

Since many developing countries have comparative advantages in the production of natural resources, the implementation of neoclassical policies in general entails an increasing specialization in the primary sector (Redclift and Sage, 1999). Benavente et al. (1997) conclude that, in Latin America, liberalization and integration into the world economy have been accompanied by (1) an expansion of natural resource use and raw materials processing industries and (2) the decay of manufacturing industries. Likewise, Noorbakhsh and Paloni (1999) show that declining or negligible rates of growth in manufacturing have followed structural adjustment programs in most African countries. Moreover, export concentration (the share of the leading export item) has increased in the least developed countries after the introduction of liberalization measures in the 1990s (UNCTAD, 1999b). Most of these export items belong to the primary sector. According to neoclassical trade theory, the removal of trade barriers is expected to result in increased specialization in the production of goods in which countries have comparative advantages. However, when specialization means "primarization," the blind exploitation of comparative advantages may lead in the long term to an exacerbation of the already large gap between rich and poor regions of the world (Simon and Dodds, 1998).

Several authors argue that, apart from its long-term economic consequences, the specialization in natural resources affects both quality of governance and type of political regime by promoting the emergence of large, corrupt, and inefficient bureaucracies that do not encourage economic growth or respond adequately to economic crises (Woolcock et al., 1999; Auty, 2000). Additionally, the international market is already flooded with labor-intensive manufactures such as clothing, shoes, and toys from Southeast Asia and China, a situation that results in price decreases among low-tech and labor-intensive manufactured products. All of these factors may constrain possibilities for economic diversification. As a result, there is a high probability that countries specializing in natural resource exports will become caught in a specialization (and poverty) trap.

These "impoverishing" effects of natural resources have been studied in depth by the Economic Commission for Latin America and the Caribbean (ECLAC). However, the trade policy ECLAC proposed in order to overcome the specialization trap failed because the protection of national infant industries through subsidies, tariffs, and quotas promoted inefficient monopolies. These monopolies harmed consumers, did not develop sufficient technological improvements to compete in the international market, and never became totally independent from foreign inputs.

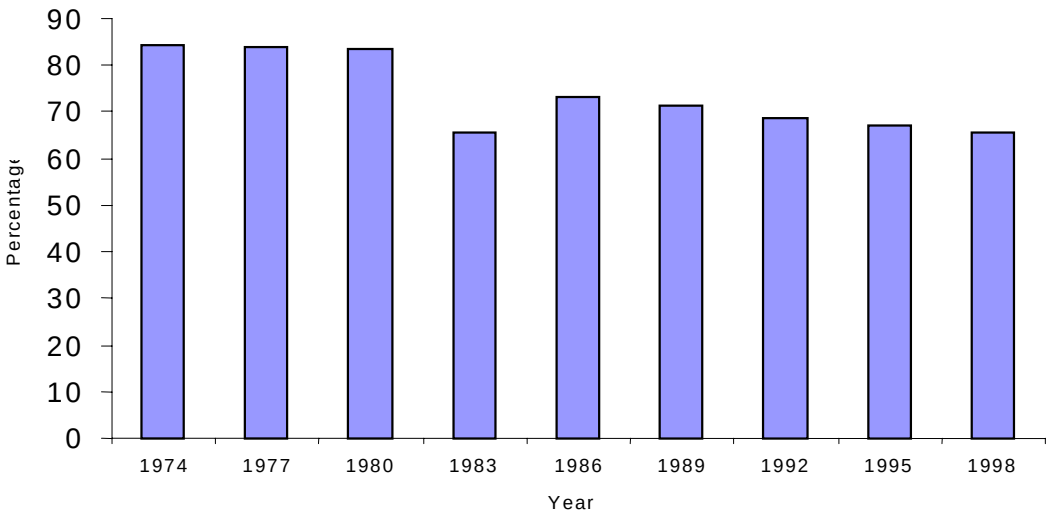
In the case of countries locked into exports of non-renewable resources, where investments are concentrated in the expansion of this sector, even "weak" sustainability[1] is unlikely in the long term because the depletion of natural capital is not compensated by the expansion of more "human-made" revenue sources (Winter-Nelson, 1995).

[1] An economic system is sustainable in a "weak" sense when gross savings compensate manufactured capital depreciation plus natural capital depletion and the costs of pollution.

## 7. The Latin American Case

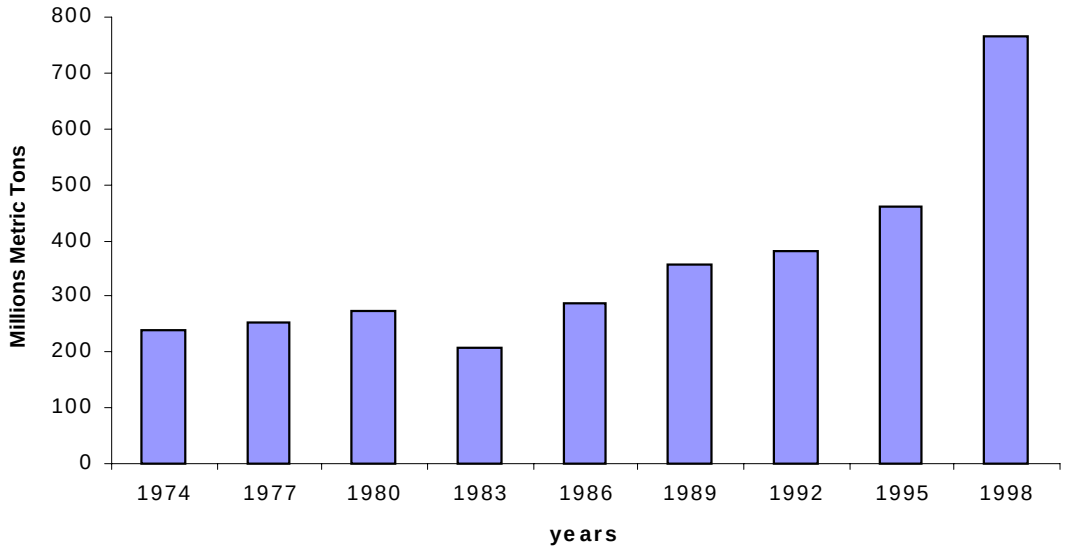
During the past two decades, Latin American economies have been characterized by increasing integration into the world economy, modest economic growth (or at least growth below expected rates), drastic internal structural reforms, enlarged income inequality, and recurrent macroeconomic instability due to financial crises. Although the value of South American primary exports relative to total exports has dropped somewhat in the past three decades, the region still specializes in natural resources (see Figure 3). The weight of primary exports has more than tripled from 1974 to 1998 (see Figure 4). During the same period, the ratio between total export value and weight in the primary sector decreased more than threefold (see Figure 5) as the consequence of falling prices among natural resources. Latin America and the Caribbean have witnessed a boom in the physical output of mining production – activity that is directed primarily toward exports – during the past two decades (see Figure 6). If the environmental "memory" (pollution, deforestation) of these physical flows is considered, the environmental impact by unit of export value has probably increased substantially. In addition, the amount of land used for agricultural purposes in this region increased 14% between 1980 and 1998 (Figure 7). This is likely one of the factors that explains the decrease in forested areas (see Table 3). Although the relationship between agricultural production and exports is less evident than in the case of mining, exports from several countries in this region are strongly dependent on raw or semi-processed agricultural products.

Figure 3. South American Primary Exports to Total Exports



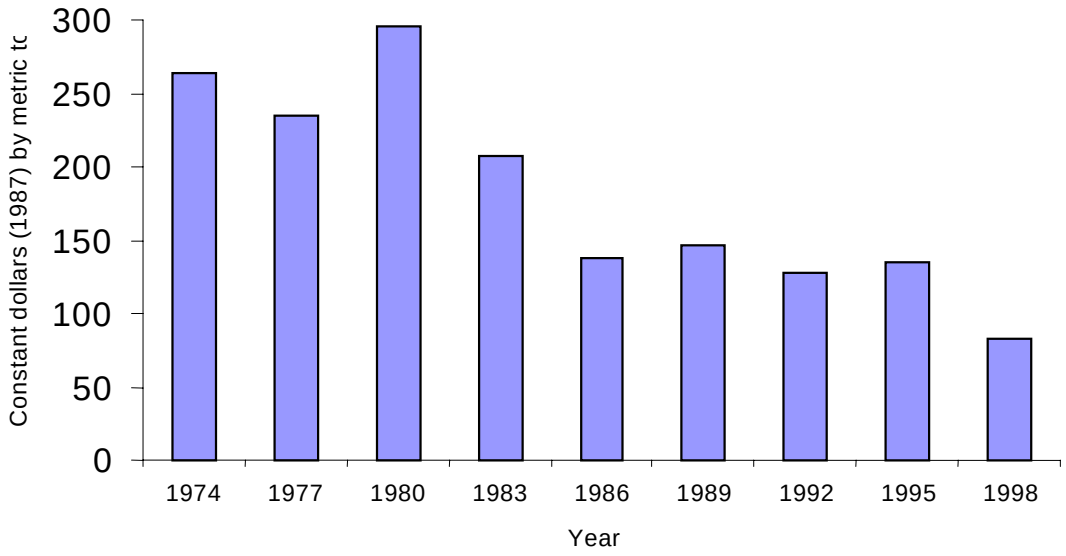

*Source: Authors' calculations based on the International Trade Statistics (U.N.), various issues.*

Figure 4. South American Exports in the Primary Sector



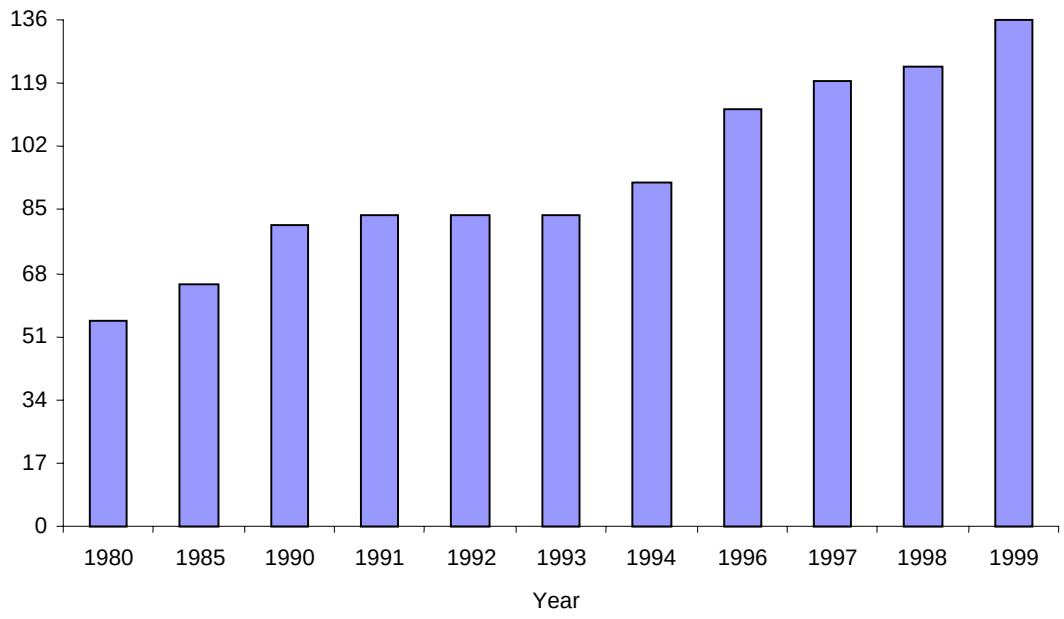

*Source: Authors' calculations based on the International Trade Statistics (U.N.), various issues.*

Figure 5. South America. Total Revenues/Weight
Primary Exports



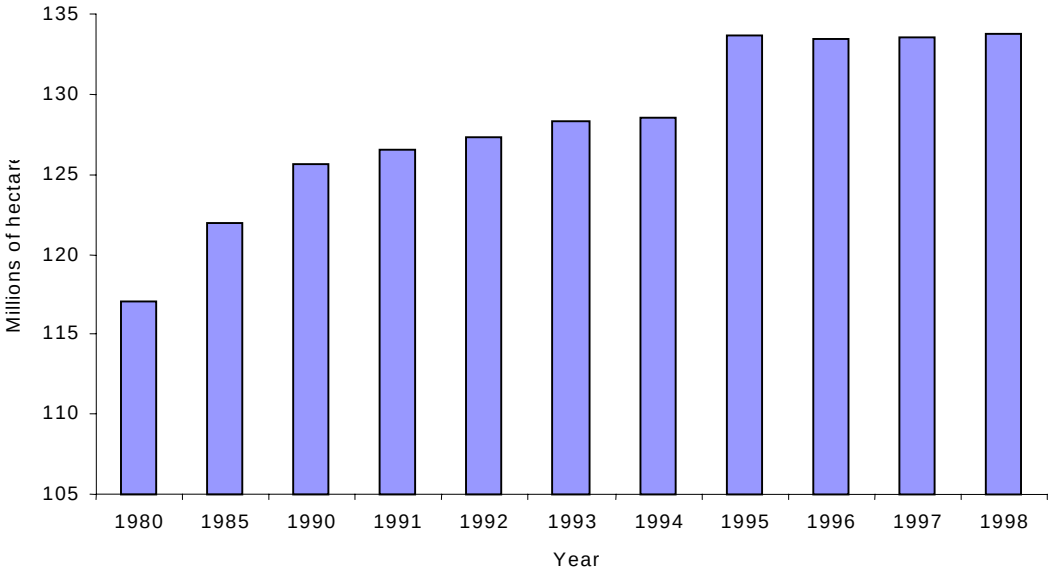

*Source: Authors' calculations based on the International Trade Statistics (U.N.), various issues.*

Figure 6. Quantum Index of Mining Production
Latin America and the Caribbean




*Source: CEPAL Statistical Yearbook 2000.*

Figure 7. Agricultural Area in Latin America and the Caribbean




*Source: CEPAL Statistical Yearbook 2000.*

**Table 3**

Forested Area in Latin America and the Caribbean

**Millions of Hectares**

| Year | Caribbean | Mesoamerica | South America | LA -Caribbean |
|---|---|---|---|---|
| 1980 | 5 | 81 | 955 | 1041 |
| 1990 | 5 | 80 | 894 | 979 |
| 1995 | 4 | 75 | 871 | 950 |

*Source: Global Environment Outlook 2000 (UNEP).*

Latin America can be viewed as an example of a region locked into a specialization in the export of natural resources. Despite falling prices in primary products, the region in general has been unable to diversify its exports in the direction of more profitable sectors. Therefore, for many countries in the region, greater integration within the world economy has meant increases in physical outflows of natural resources, local natural capital depletion, and environmental pressures. Research on Africa would probably reveal similar results.

### 8. Foreign Investments, Transnational Corporations, and the Distribution of Profits

In order to correct economic inefficiencies, the "Washington consensus" proposes, *inter alia*, the implementation of fiscal, trade, and financial reforms for the purpose of attracting investment by transnational corporations (TNCs). According to this approach, TNCs play an important role in the growth of developing economies by enhancing competition, injecting capital, providing technological advances, and promoting modern management practices. TNCs may help developing countries leapfrog stages in development, enabling them to shift from an economy oriented toward primary products to a service economy. This would relieve pressure on natural resources and improve the environmental performance of the economy. Even if foreign investments are directed to the primary sector, the model assumes that environmental performance will improve because TNCs are more efficient and technologically advanced than outdated state enterprises (Zank, 1995). Natural resources in the ground have no value unless they are discovered, extracted, processed, transported, and distributed to customers. The predominant idea is that TNCs may give value to these resources that would otherwise remain unused due to lack of capital, managerial skills, and technology in poor countries (Wilkins, 1998).

Due to international pressure and a lack of capital, most mineral extraction and processing companies in the Third World – usually owned by governments – are being sold to TNCs. Hence we have returned to a situation similar to that before the nationalization wave of the 1970s. A handful of TNCs will increase their control over the market for

minerals. Oligopolistic behavior may then increase international commodity prices. Nonetheless, the distribution of profits arising from an increase in prices may be unfavorable to host counties. First, mineral companies can function as enclaves that import the bulk of their inputs and repatriate most of their profits to their headquarters without creating backward or forward links to the local economy. Second, since these companies have vertically integrated networks of production that include extraction, processing, and international distribution, intrafirm trade is very common. This practice allows transfer pricing. That is, by systematically understating commodity prices in intra-enterprise transactions, multinational firms can reduce their taxes in the "exporting country" and thereby increase their global profits at the expense of the host economy. It is argued that regulations on investment and taxes promote transfer pricing. In the absence of restrictions, TNCs do not face the necessity of implementing these types of practices (Plasschaert, 1985). However, current measures being taken by developing countries to attract international investment – including tax reductions, the liberalization of investment regimes, and a lack of restrictions on capital mobility – could ease the way for TNCs to make managerial decisions unfavorable to the host country.

Over 40% of world trade consists of intrafirm trade within a relatively small number of large TNCs (Panic, 1998). Data on this type of trade are collected systematically only by the U.S. government for U.S. enterprises (Gilroy, 1989). In the United States, related-party trade (trade by U.S. companies with their subsidiaries abroad as well as trade by U.S. subsidiaries of foreign companies with their parent companies) accounted for 47% of total import value in 1998. In the same year, related-party trade accounted for 47.6% of the total import value of iron and steel, 31.8% of the total import value of manufactured metals, and 30.4% of the total import value of nonferrous metals (U.S. Bureau of the Census, 1999).

The significant extent of intrafirm trade casts doubt on the validity of assumptions made by neoclassical trade theory. The increasing prominence of TNCs in the world economy turns trade into managerial decisions made within large, vertically structured corporations rather than transactions between different countries, as neoclassical theory assumes. From this perspective, the distribution of profits and costs of trade liberalization among countries would depend on the internal interests of TNCs that determine their own international allocation of capital and labor. In developing countries, economic policies with the goal of enhancing integration within the world economy would be successful only if they coincided with the interests of TNCs. Those countries unable to match their policies with the interests of TNCs would be marginalized. This factor may be one of the main causes for the high geographic concentration of exports in the developing world. Despite their adoption of liberal trade and investment policies, the vast majority of developing countries remain economically marginal to export activity in *monetary* (not physical) terms (Lall, 1998). This has been the case in the least developed countries, whose share in world exports in monetary terms has decreased from 0.7% in 1980 to 0.4% in 1993 (UNCTAD, 1996).

The large number of mergers in recent years reveals the increasing necessity of possessing large-scale managerial structures in order to compete in the current globalized economy. These alliances are likely to reduce the number of enterprises competing in the market and will increase the already considerable political power of TNCs (Sklair, 1998). The mining sector is not excluded from this trend; a significant number of mergers, acquisitions, and strategic alliances have occurred in this sector in recent years

(Warhurst and Bridge, 1997). Analysts generally agree that the more technology-intensive the industry, the more likely it is that foreign direct investors with technological and managerial advantages will be able to outmaneuver domestic firms in other countries. Technology-intensive firms must, above all, protect their knowledge advantage and proprietary expertise. Therefore they prefer to create subsidiary operations abroad rather than sell their technology. According to this perspective, minerals industries should be less dominated by transnational capital than technology-intensive sectors (Leonard, 1988). However, in the case of natural resources, the capacity to allocate production costs (including environmental costs) internationally can be a crucial advantage for transnational production structures. Thus transnational enterprises that distribute the different stages of mineral extraction and processing among different countries can save costs and therefore outcompete smaller national companies.

Because most governments of the world have adopted market-friendly policies, the current relationship between TNCs and governments is more cooperative than during the 1970s when the relationship was more openly confrontational (Dunning, 1998). Nonetheless, the emergence of "mega-capitalism," characterized by a small number of huge companies that control the global market through powerful oligopolies, increases the probability of conflicts between the interests of transnational macro-corporations and those of nation-states, employees, environmentalists, and consumers.

The neoliberal view assumes that TNCs are not an important cause of market imperfections in host countries; on the contrary, TNCs are seen as factors for increasing competition and improving the functioning of markets (Jenkins, 1987). Nevertheless, a potential side effect of foreign investments related to privatization in developing countries, especially in the internal service sector, is the substitution of state-owned monopolies by monopolies owned by foreign capital, a situation that does not necessarily eliminate economic inefficiencies. This has occurred, for instance, in the energy sector in several Latin American countries. Governments in developing countries do not have enough power to implement anti-trust measures against TNCs, like those sought by the U.S. government against Microsoft for example. Oligopolistic behavior by TNCs in the agricultural or mineral sectors negatively affects not only exporting countries but also final consumers in the industrialized world. Morisset (1998) provides evidence indicating that, in the past 25 years, decreases in world commodity prices were not transferred to domestic consumer prices. In contrast, increases in world prices were transferred to domestic prices in developed countries. Morisset points out that the intermediary role of TNCs was an important determinant of this phenomenon.

Another problem posed by foreign investment in developing countries is the macroeconomic instability such investment can induce in cases of massive capital withdrawal. Most capital flows to developing countries occur through portfolio investments. Enormous stock market fluctuations due to investor fears triggered the economic crises in Mexico, Brazil, Argentina, and Southeast Asia in the 1990s and early 2000s. These crises caused by financial speculation may occur even in countries where underlying macroeconomic fundamentals, notably fiscal indicators, appear to be quite sound. In fact, Mexico and Southeast Asia enjoyed fiscal surpluses and low inflation rates just before their respective crises occurred (Onis and Aysan, 2000). Countries that directly suffered the strongest crises are also (apart from China) the main recipients of foreign capital in the developing world. These crises negatively affected the economic performance of other developing countries while the core of the world economy was hardly affected.

For orthodox thinkers, instability associated with globalization is preferable to the alternative (Temin, 1999). However, for some authors, an effective state regulatory framework is needed in order to avoid these sorts of extreme fluctuations (Onis and Aysan, 2000). The various controls maintained by China (as well as India and Chile) over capital inflows and outflows have been proposed as an explanation for the capacity of these countries to avoid recurrent crises (Bagchi, 1999).

## 9. A New Dualism?

In the 1970s, development economists frequently described developing economies as typically having two parallel sectors: a modern sector and a traditional sector. Some analysts argued that the traditional sector would be absorbed by the modern one. Others argued, to the contrary, that the traditional sector was functional to the modern sector (as in the case of unpaid women's work). Later, these macro-categories were substituted by classifications designating an "informal" vs. "formal" economy. However, we believe that the old modern-traditional classification is still useful in the contemporary context. The modern sector has relatively updated methods of production, is often (although not always) located in urban areas, and has important links to the world economy through trade and international financial flows. The subsistence or traditional sector is fundamentally rural, is usually based on ancestral methods of production, and exhibits very local commercialization whose basic aim is to provide subsistence for the producers. Prices are the only bond with the world economy and are affected, for example, by national-level trade policies. Small-scale peasants are typical examples of the economic agents of this sector. In many developing countries, a very important part of the population belongs to this latter sector.

Structuralist economists were well aware that "the laws of the market, no matter how great their contribution to economic efficiency might be, do not necessarily lead to social efficiency" (Prebisch, 1982). However, the overemphasis of ISI strategies on the modern sector neglected the urgent necessities of most of the population, produced increasing inequality between both sectors, and promoted extensive migration of poor people to urban areas. Rapid rural-urban migration generated slums with terrible living conditions and high levels of violence. Conversely, the basic needs paradigm of development stressed the importance of improving conditions within the traditional sector (Srinivasan, 1977; Streeten and Burki, 1978). This approach failed to consider the resulting lack of capital that might confront the public sector and the concomitant possibility that developing economies would remain locked within low-productivity production technologies (Hunt, 1989). The neoliberal model faces the same problem as the ISI approach, with the aggravating factor that reducing the role of the state impedes the transference of wealth (through education or health assistance) to the traditional sector. We believe that any development strategy that seeks to ensure long-term economic prosperity with equity must take into consideration the existence of these two sectors. Different, yet complementary, policies may be necessary to deal with the development of both sectors.

## 10. Some Policy Alternatives

As we have seen, integration into the world economy through primary-sector specialization may lock developing countries into a trap of poverty and environmental degradation, because low commodity prices may hinder both the shift toward more value-added economic activities as well as the reparation of environmental damages (von Below, 1993). We believe that an increase in commodity prices is a precondition for the success of any outward-oriented development strategy in developing regions that specialize in natural resources. Environmental considerations may be used to increase these prices. One possibility is the expansion of "fair trade" networks or market segmentation through eco-labeling. However, there are still no methods for producing "green" oil or gold. For the energy and mineral sectors, "eco-cartels" could be created. These "eco-cartels" would maintain the goal of reallocating portions of increased revenue arising from oligopolistic practices into alternative economic activities. Another alternative involves environmental taxes that could be imposed upon final consumers in order to compensate for the depletion of natural capital at the place of extraction (Kox, 1991; Costanza et al., 1997). A critical assumption behind the appeal for an increase in commodity prices is that policies would be adopted in order to allocate revenues in more profitable and less environment-intensive sectors.

Governments should promote investment in the manufacturing and service sectors rather than the mining or agro-export sectors. Fiscal incentives could be used to achieve this goal. In any case, development strategies seeking to promote growth in the modern sector should be accompanied by real efforts to fulfill basic necessities in the traditional sector. The traditional sector should also be supported because it is functional in providing subsistence to a large segment of the population that remains without social and unemployment insurance. Some traditional human-environment interactions fulfill a large number of life-supporting environmental functions by maintaining the food supply, genetic diversity, stable biogeochemical cycles, etc. Since traditional agriculture is agro-ecological in many parts of the world, substantial North-to-South compensation should be offered to traditional agriculture within the framework of "farmers' rights," e.g., recognition of and remuneration for traditional farmers' tasks of *in situ* conservation and co-evolution of seeds and species. Other areas that highlight the need for North-to-South compensation involve (1) the environmental liabilities of TNCs in the mining and fossil fuel sectors[2] and (2) the North's "carbon debt" arising from rich countries' disproportionate use of carbon sinks (e.g., oceans, soils, and new vegetation) and the atmosphere as a carbon reservoir.

International institutions and cooperation networks may play a crucial role in helping local governments and NGOs redistribute wealth to poor and rural areas. Public expenditures on health and education should be expanded or at least not reduced, as was the case in most countries after structural adjustments were implemented. These ideas are not new: years ago, the Nobel laureate Gunnar Myrdal (1984) recommended that North-South wealth transference be shifted from the support of large-scale projects to the im-

[2] A number of court cases (involving Texaco, Freeport-McMoRan, the Southern Peru Copper Corporation, etc.) have tried without success in recent years to claim compensation for environmental damages caused by TNCs in developing countries.

plementation of simpler and less costly measures aiming to improve food production, sanitation, health care, and schooling for the poverty-stricken masses. Small and locally managed development banks or NGOs may be the most suitable instruments for carrying out this transference. The Grameen or "village" bank in Bangladesh is cited as a positive example of a small-scale, rural, highly decentralized lending program that is self-sustaining and alleviates poverty. This bank provides loans to cooperative workers (especially women), carefully selects borrowers, and rigorously supervises and monitors the projects; these policies have resulted in a repayment rate of 97% (UNEP, 1995). A good example of an alternative financial project involving North-South cooperation is provided by the TRIODOS bank. This bank finances projects run by small enterprises in Belgium and the Netherlands, particularly those focusing on environmental issues, health care, handicraft, and art. This institution dedicates 4% of its credits to small-scale development and fair trade projects in developing countries.

In addition, the end of the Cold War appeared to offer a significant opportunity for reducing military expenditures throughout the industrialized world (Serfati, 2000). This could have allowed for the reallocation of public resources to developing countries. The redistribution of resources from arms to development was suggested long ago by certain development economists (Prebisch, 1968). However, this shift in expenditures has not taken place at all. For example, the U.S. government is once again planning to build an anti-missile defense shield. Unfortunately, enemies can be always reinvented.

We believe that the establishment of international wealth transference mechanisms, such as those existing within national states to ameliorate the condition of disadvantaged social groups, must accompany the globalization of capital. Moreover, fiscal mechanisms should be implemented in order to prevent the unfair distribution of profits among TNCs and national governments. Controls on capital flows and the privileging of productive over portfolio investments are necessary to prevent macroeconomic instabilities that result from massive withdrawals of capital. In order to avoid free-riding, these measures should be implemented in a coordinated way among countries. These initiatives require the creation of new institutions of governance at an international level (Görg and Hirsch, 1998). The European Union is a good example of how economic integration can occur in tandem with new forms of governance. European integration occurred not only through the mobility of capital and labor, but also through a new legal framework and novel institutions for governance such as the European Parliament. European wealth transference was key for the economic growth of "marginal" countries such as Ireland, Portugal, Spain, and Greece. Moreover, this wealth transference was an indispensable requirement for the fair distribution of profits resulting from the dismantling of economic barriers.

Reasons for the implementation of North-South wealth transference mechanisms are not only humanitarian. Rather, increases in income in these regions would create a large number of potential buyers of "western" products. Such policies would also relieve immigration pressures, perhaps the main problem the North faces as a consequence of rising global income inequality. Poverty reduction in the developing world would also reduce the probability of massive violent confrontations that may affect the performance of leading economies (Sachs, 1999).

In summary, we must shift from a growth-centered paradigm of development to a people-environment-centered paradigm of development (Durosomo, 1997). It follows that

one appropriate strategy for overcoming the current trend toward global income polarization would involve the general application of an export substitution macro-strategy of development in the modern sector of developing countries. This macro-strategy would combine state intervention and the attraction of foreign capital. This approach must be complemented by (1) the adoption of mechanisms to increase commodity prices and (2) national and international wealth transference through institutional cooperation with the rural subsistence sector and the extreme poor in urban areas, particularly by providing educational and health facilities. International and local NGOs may be key in assisting and coordinating this transference. Due to the "impoverishing" effects of the specialization in natural resources, export substitution strategies are essential. Otherwise, the forced integration into the global economy of developing countries specializing in natural resources may imply both long-term, counterproductive environmental effects as well as increased income inequality at a global level.

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