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People and the environment on the edge

Environmental vulnerability in Latin America and the Caribbean

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Introduction

Picture a rowboat with two passengers in a storm, attempting to reach a distant shore. One passenger holds a broken, short oar, the other a long, gilded one. Wind and waves shake the boat; leaks half-fill the hull even with constant bailing. Jealously guarding what is his with a pistol, the passenger holding the gilded oar will not assist with rowing or bailing. It is dark, so the direction to the shore is uncertain, and the passengers argue bitterly.

With only slight exaggeration, this is the situation in much of Latin America today. Moving their societies to the utopian shores of 'development' and 'democracy' requires cooperation and a functioning social vessel. But savage inequality has created two groups of such unequal means that they move in separate worlds, and rarely in the same direction. Economic globalisation that first brought winds of growth now brings tidal waves which threaten to swamp the boat as prices for key export products often plummet and markets abroad evaporate. The water filling the hull is the accumulated weight of foreign debt, interference from overseas, endemic corruption, entrenched interests and inefficient bureaucracies, which slow the ship and hinder its manoeuvrings.

Then there is the uncertainty about which direction to row. Some claim that the shores of 'development' will be reached by following the route prescribed by Washington-based institutions such as the World Bank and the International Monetary Fund (IMF), which involves cuts in government spending and focuses on increasing exports based on cheap resources and labour. Others, such as community groups and local non-governmental organisations (NGOs), argue that this approach threatens the social and environmental fabric of their countries. Instead they call for policies that provide equal access to resources, restore government services, and so protect the poorest sectors of society from the harsh winds of globalisation.

Meanwhile, even though dictatorships have been replaced by civilian governments, democracy continues to founder in Latin America. The picture is one of nation states attempting to regain or build democracies while battling all the problems of the rowboat: profound economic uncertainty in an often brutal global market, debilitating historical legacies of inequality of land, wealth, and education, and constant interference in domestic issues from

international institutions and the US government.

Common to all these nations are their weak economic foundations. Since colonial times, their 'development' has been based on non-diversified economies – primarily on the export of raw materials, which has led to massive environmental damage and degradation. This is the colonial legacy: Latin America was brought into the world economy by the Spanish, Portuguese and then the English and Americans as a place to provide natural resources. The frantic search for gold led to the rapid exploration of the Americas. Sugar cane plantations and sugar mills were founded almost everywhere the Spanish or Portuguese landed, and sugar produced the first profitable crop to send back to Europe. The English and French followed suit in search of the sweet profits in their colonies around the Caribbean.

The soil of these immense plantations was worn out by intensive production, while huge volumes of firewood were required to boil down the cane. Tobacco, cotton and coffee were likewise pivotal in colonising huge swathes of the best land in the newly opened territories. Meanwhile, African slavery allowed agricultural elites to continue using outdated techniques and defer innovations that would have conserved soil fertility.

This system of oppression based on ethnicity and wealth is a root of many of the region's environmental problems. The unequal distribution of land which began in colonial times continues today, with huge ranches and export fruit plantations owned by transnational corporations or their contractors now dominating the most fertile lowlands. Poor farmers often have little choice but to seek their livelihoods on marginal land from which they are unable to lift themselves out of poverty.

Five hundred years of exploitation have severely damaged Latin American ecosystems. In describing Central America as one of the three most diverse regions on the planet, Conservation International considers the region one of the world's most important 'hotspots' for biodiversity. Yet only 20 per cent of the original habitat remains, and the benefits of this biodiversity – for example, providing materials for medicine and maintaining healthy crop varieties – are under increasing threat.

Central American countries and Caribbean nations such as the Dominican Republic are also prone to extreme climatic events like

hurricanes and to natural disasters like earthquakes, while the Andes region has suffered the consequences of the periodic shifts in rainfall known as El Niño, a phenomenon first noted by Peruvian fishers. However, the extent of the devastation, and the ability of people to prepare for and recover from these disasters, is largely determined not by the winds, rain, or shaking earth, but by the social and economic circumstances of the people who live there. The devastating impact of Hurricane Mitch in Central America, for example, was due largely to deforestation of hillsides, as over the years the poor had been forced to farm on unstable uplands because the best coastal land was in the hands of national elites and multinational corporations growing crops for export.

It is these poor people who suffer most from the consequences of environmental damage and degradation such as deforestation, water contamination, and soil erosion. In other words, poor people are the most vulnerable to the adverse consequences of the stresses that the modern world is placing on the environment.

Deforestation

Deforestation and other habitat loss has wiped out about 70 per cent of Central America's rain forests. Small remnant forests in Trinidad, Jamaica, Haiti, the Dominican Republic and Costa Rica are disappearing rapidly. Between 14 and 25 per cent of the Brazilian Amazon forest (an area the size of France) has been completely cleared, and recent estimates for the Amazon region (in Brazil and in the other eight countries which contain Amazon forests, including Peru and Ecuador) show continuing deforestation. As South and East Asian countries deplete their supplies of lumber they have increased their reliance on Latin American suppliers. Reports are now coming out of the Guyanas (Suriname, French Guiana and Guyana) of huge lumber concessions to Korean, Indonesian and Malaysian companies. Timber deals involving exports have also been reported in Nicaragua, Panama, Honduras, Guatemala and Peru.

War, poverty, and the increasing concentration of landholdings in the hands of elites have also combined to drive people into the region's remaining forested areas. In Haiti, the most deforested country in the region, a mere two per cent of the land remains forested. Much of the damage has been done by commercial logging, but Haiti's high levels of poverty have also had an impact. Trees need

to be cut down to make charcoal, which a majority of Haitians rely on for cooking, and people can make money by selling wood for charcoal. For many Haitians, the need to put food on their family's plates is, inevitably, a stronger immediate motivation than protecting the environment. The results can be tragic: analysts believe that hundreds of flooding deaths in May 2004 in Haiti were the result of deforestation.

One strategy to protect the region's remaining forest cover is through parks and reserves. On average, about 15 per cent of the land in Central America and the Caribbean, and 10 per cent of the land in South American nations, is now officially 'protected' in parks and other reserved areas. However, to be effective such parks need to balance environmental protection with human needs. Early conservation initiatives tended to exclude local people and their activities from forest management plans, forcing indigenous and non-indigenous residents to the peripheries of protected areas and creating a climate of resentment and hostility. As local people were left out of conservation initiatives, tensions over land and natural resources intensified, leaving neither party satisfied with the results.

New approaches attempt to address the shortcomings of the traditional park system by including local people in the planning and managing of conservation areas. Biosphere reserves, pioneered by the United Nations (UNESCO) Man and the Biosphere project, consist of a human-free protected 'core' area, surrounded by 'buffer zones' for research, recreation, eco-tourism, environmental education and the extraction by locals of renewable forest products, and an outer 'transition' area for human habitation and private enterprise. Intended to provide a space for human sustenance and ecological conservation, since the project's inception in 1976 the network has grown to include some 337 reserves in 85 countries. With local participation and support, these initiatives can contribute to slowing, if not halting, forest destruction.

Water contamination

Latin America is the most urbanised part of the developing world, with 380 million of its 507 million residents – three-quarters of the region's people – experiencing their lives as urban. This makes the region starkly different from Asia and Africa, where only 30 to 35 per cent of people live in cities. There are now an astounding 52 cities in

Latin America with populations over one million. And there are four 'mega-cities' almost unimaginable in their scale: 12.5 million in greater Rio de Janeiro, 13 million in the Buenos Aires metropolitan area, 22 million in greater São Paulo, and 25.6 million in the sprawl of Mexico City, one of the largest cities in the world.

For urban dwellers, environmental issues related to land and water are critical problems. These include the lack of safe drinking water, untreated sewage, the illegal and improper dumping of solid waste (garbage), contaminated lands from industrial facilities, and sprawling urban growth destroying reserves of drinking water and other protected areas. As Carlos Minc, from Brazil, puts it: 'Ecology in the Third World begins with water, garbage, and sewage. Here, the "hole in the ozone layer" is right on the surface, inside the house.'¹ Some estimates attribute up to 80 per cent of illnesses in the region and one-third of deaths to contaminated water, making it an obvious key source of urban misery and danger.

Most houses, apartments and office buildings in the big cities have running water and pipes taking sewage away. Official statistics report national averages from 60 to 100 per cent of homes having 'access to sanitation services'.² However it is shocking to discover that a vast majority of the sewage is merely dumped downstream or out at sea without treatment. By the early 1990s, Santiago de Chile was still treating only four per cent of its sewage, Buenos Aires only five per cent, and São Paulo only 10 per cent. The sewage water is often dumped into open drainage canals that flow into urban rivers.

Inevitably, it is the poorest people who are most directly affected by the consequences of this. In many cases they must build their houses along rivers or drainage canals because it is the only affordable place they can live. When floods come, these residents experience these putrid landmarks not only visually and through smell, but as rising flood waters that invade their homes. Even without floods, living alongside open sewage deposits means residents are daily exposed to the rank waters' germs. Poor children bear the heaviest burden, as their undeveloped immune systems leave them most vulnerable to the lack of water and sewerage infrastructure. Because of all the fatal and debilitating diseases caused by this 'faecal-oral' contamination, to say 'human faeces remain one of the world's most hazardous pollutants' is a fair portrayal.³

Soil erosion, degradation and contamination

Another major pollutant has undoubtedly been modern agricultural methods – methods that have damaged the land and adversely affected the prospects of poor people dependent on the land for their livelihood.

In the 1960s and 1970s, in an attempt to ‘modernise’ agriculture and boost production (and agricultural supply companies’ profits), the United States and Mexico came up with what was at the time a radical prescription: replace traditional farming practices with mechanised single-crop production, construct massive irrigation systems, and use high-yielding hybrid seeds produced in research farms along with seed-specific agrochemicals to feed the plants and control pests. This programme was exported as part of US aid projects to help develop the ‘Third World’ and to address poverty and economic stagnation, but was also designed to boost corporate profits and to create markets for US products.

The Green Revolution, as the process became known, transformed formerly inaccessible lands into productive fields and exponentially increased crop yields, often of export crops like sugar and cotton. Heralded as a comprehensive remedy to alleviate technological, economic and population stresses, the Green Revolution was seen as the quickest means of generating the capital necessary to drive modernisation.

Yet the Green Revolution was not introduced into a social vacuum, and so it fell far short of delivering encompassing relief to poverty and famine in developing nations. First, the Green Revolution cemented Latin America’s economic position as a supplier of raw agricultural goods, and created a technological dependence on imported seeds, pesticides and machinery. In many places, food production was sidelined for export commodities. It also reinforced and worsened the economic and social cleavages that have divided Latin American people for centuries. Large landowners from the colonial elites and some wealthier farmers adopted new technology and rose in economic standing, leaving the poor to slip into marginality or wage labourer status.

The Green Revolution has also led to widespread environmental degradation. The large plantations producing crops for export and local farmers practising small-scale agriculture have pushed the lands of Central America and the Caribbean to terrible states of erosion

and contamination. One major environmental legacy of the Green Revolution is a heavy reliance on agrochemicals. From 1970 to 1996, global pesticide use increased by 3,300 per cent. By 1997, pesticides globally were a US\$32 billion industry. In Central America an average 58 kilograms of fertiliser are applied to each hectare per year (in some highly competitive agro-export economies like Costa Rica's, the figure reaches as high as 243 kilograms of fertiliser per hectare per year).

These pesticides have direct human and environmental effects. Whole communities have suffered long-term exposure to chemicals – something that is usually ignored or overlooked, although occasionally the exposures are so acute that they receive public attention. Agricultural workers are routinely and acutely exposed on the job; their families and the community more broadly drink contaminated water or breathe 'overdrift' of chemical mist into their homes and schools from aerial spraying.

Much of the land itself is exhausted. Land degradation is now severe across the region, particularly in Mexico and Central America. Recent reports are that 40 per cent of the land in Central America and Mexico has seen its productivity reduced by erosion; this figure reaches a frightening 77 per cent in the case of El Salvador. Most countries now have over half of their land classified by Conservation International and the World Resources Institute as 'disturbed by human action'.

Intensive farming over decades by large landowners (including transnational corporations) driven by the search for profits has drained the resources of fertile lowland areas and made them over-dependent on agrochemicals. Meanwhile, rapid population growth combined with lack of access to suitable land has led many small farmers to turn to marginally arid and hilly farming and grazing lands. Constrained by the pressures of poverty, many of these farmers have been forced to take a short term approach to farming – one that is ecologically unsustainable, and increases their vulnerability to the consequences of the damage being done to the environment.

Climate change and environmental vulnerability

As global climate change – an environmental problem for which rich nations are primarily responsible – gains strength, the frequency, magnitude, intensity and duration of the hurricanes, floods and

droughts besetting Latin America have increased. The situation might be described as one of 'climate injustice', since those most responsible are not suffering substantial damage, while those suffering most – in terms of the human, economic and environmental costs – have done the least to contribute to the problem.⁴

The fact that the poorest and most vulnerable countries suffer worst from climate change is illustrated most dramatically by the case of Honduras, where the devastation wreaked by Hurricane Mitch serves as a parable about uneven vulnerability to the consequences of global climate change.

While the effects of Mitch were certainly devastating in Nicaragua, El Salvador and Guatemala, Honduras is often hailed as the classic case of physical, economic, social and environmental vulnerability in the region. Seventy-three per cent of its population falls below the international poverty line, 30 per cent live in extreme poverty, the population growth rate is among the highest in the world (3.4 per cent), and the urban population of the capital city, Tegucigalpa, has increased fivefold since 1960. In 1998, three-quarters of all land was held by just 228 landholders. The overwhelming majority of Hondurans have been pushed into more marginal areas, particularly the steep slopes outside cities (where they can afford to live while having access to a job). The government is strapped down by a large trade deficit, rising inflation, little foreign investment, and an external debt of US\$4.3 billion, and struggles to provide even the most basic services to its citizens.

In October 1998, Hurricane Mitch dumped six feet (or one year's worth) of rain in two days. As torrential rains poured down the mountains and hillsides, rivers swelled uncontrollably, in some cases as much as 30 feet higher and 1,500 feet wider. The river Choluteca burst its banks near one of the nation's larger cities, creating 'an eerie lagoon of untreated sewage and chemical effluents in which corpses flowed by'.⁵ The US Geological Survey estimated that over one million landslips and mudslides took place, exacerbated by the environmental vulnerability resulting from decades of poor resource management. Massive deforestation meant that when the rain came down, so did the topsoil from the denuded uplands.

With only four helicopters at their disposal, the Honduran government faced a country where 60 per cent of the land was

engulfed in mud and water. In the end, 17,000 were pronounced dead or missing, one million were homeless, 94 bridges were destroyed, the vital banana industry was left in ruin, 70 per cent of the country's infrastructure was severely damaged, and reconstruction costs were estimated at US\$5 billion. Facing severe revenue shortfalls, president Carlos Flores announced that much of the reconstruction burden would have to be borne by local communities rather than by the government.

In the aftermath of the hurricane came the second, 'silent' disaster of infectious disease. Swollen and surging floodwaters carried excess waste and corpses through the country's waters; cracked sewage pipes and latrines seeped into the floodwaters; and contamination quickly turned to cholera. Diarrhoea, a result of dehydration and contaminated water (and the leading cause of death in children worldwide), became particularly acute. Leptospirosis, a bacterial infection spread by rodents and exposure to water contaminated with animal urine, also took root. Mosquitoes began to proliferate in stagnant pools of water, increasing the transmission of dengue fever and malaria.

Hurricane Mitch illustrates perfectly how the poorest people, and the environments in which they live, are most at risk from extreme climatic phenomena. Given the intensity of the hurricane (possibly exacerbated by the effects of global warming) and its devastating impact (worsened by the conditions of poverty experienced by the overwhelming majority of Hondurans and the environmental degradation resulting from poor resource management), it would be more appropriate in this context to speak of man-made as much as natural disasters. Yet still, the United States – the world's biggest contributor to global warming – refuses to sign up to the Kyoto Protocol. The Kyoto Protocol will only slow, not reverse, global warming, but it is a step in the right direction. If developing countries, from Bangladesh to Haiti and the Dominican Republic, are not to continue to suffer the effects of 'climate injustice', then the world must find the political willpower to implement the protocol, with or without the support of the United States.

Root causes

The story of Hurricane Mitch also hints at the complex issues that lie at the root of environmental vulnerability in Latin America and the

Caribbean. At the micro-level are individual actions by people ranging from poor farmers, who are forced into unsustainable practices by the short term and immediate need to feed their families, through to local, regional and national policy-makers, who are influenced to make destructive choices by perverse incentives and self-interest. Some issues that need to be addressed include the local power relations that drive unfair decision-making, and levels of public awareness about environmental issues.

Even where awareness of environmental problems exists, the ability to take personal action often does not. For example, throwing rubbish is quite common across the region, with startling amounts of rubbish contaminating and clogging drainage ditches, creeks, lakes, and the land. Yet without convenient receptacles and reliable and affordable rubbish removal services, attempting to change people's behaviour through education campaigns is likely to obtain scant results.

Meanwhile, weak government infrastructure and corruption mean that environmental regulations frequently are not well enforced. For example, higher levels of government often place responsibilities for environmental clean-ups on local governments who in turn lack the capacity and resources to implement them.

Throughout the region, local residents tend to be excluded from the planning of regional resource use. Large landowners, urban elites, and government bureaucrats control regional planning – often, based in the state or federal capital, at quite a distance. Sometimes they draw on the input of foreign consultants, many of whom see regions only instrumentally, as the source of raw materials to be exported.

In many countries, local councillors and civil society organisations are starting to challenge this established way of doing things: for example, in El Salvador and Honduras, local organisations are working to create mechanisms for local people to participate in water conservation and planning. These local initiatives, however, cannot tackle the main structural causes of environmental vulnerability which lie at the macro-level. Large foreign debts, the structural adjustment programmes that countries are obliged to undertake, and the associated policies of economic globalisation such as the liberalisation of trade and investment, create pressures on governments to think in the short term economically and environmentally.

Debt

Following OPEC's 1973 decision to quadruple the price of oil and changes in US fiscal policy, a series of events transpired which would ultimately leave Latin America – and much of the rest of the developing world – saddled with enormous amounts of foreign debt. Oil-rich nations were eager to invest their new oil revenues in Northern commercial banks, which sought new lending outlets for all this money. Much of this money was lent to developing countries, whose leaders, suddenly awash with hard currency, began to make massive investments in development projects (many of which were 'white elephants'), their militaries, and some infamous 'personal expenditures'. Then in 1979, OPEC again boosted oil prices and the United States contracted its money supply. This had the devastating effect of driving up international interest rates and leaving a large part of the developing world – holding variable interest rate loans – with an oppressive debt burden.

The popular media has largely dropped the issue since the 'debt crisis' years of the mid-1980s, but the magnitude of debt is now more startling than ever. In 1999, Latin America owed 41.4 per cent of its collective Gross National Product to official donors and commercial banks.

The burden of debt has had a direct effect on the environment due to the need to generate hard cash through the exploitation and export of natural resources in order to continue to pay interest on the debt. This overriding emphasis on export promotion has cost Latin America dearly in both social and environmental terms. Nicaragua, to take just one example, has experienced unusually high levels of deforestation as a direct consequence of structural adjustment loans (and policies). After signing an Emergency Structural Adjustment Financing loan with the IMF in 1994, forested land in Nicaragua began to disappear at a startling rate (approximately 150,000 hectares a year) as logging and agro-export production increased sharply.

Needing new loans (and more debt) just to service old debt, Latin American countries have had little choice but to accept World Bank and IMF loan agreements and conditionalities, with 'back door' effects that are similarly damaging for the environment. In Nicaragua, the IMF's requirement that the government cut credit subsidies to agricultural workers (to reduce inflation) pushed farmers

deeper into national forests. As Friends of the Earth explain in their scathing 1999 review of IMF lending: 'small- and medium-sized farmers hit hard by these cuts were forced to slash-and-burn forested areas to clear space for subsistence crops, further reducing the country's forests.'⁶

Typical structural adjustment conditions imposed on developing countries include cutting government spending, privatising state-owned firms, revising tax codes, liberalising trade and financial markets, eliminating subsidies and price controls, and implementing high interest rates to stem inflation. In many cases, these structural adjustment measures have initiated new waves of poverty and desperation in the region and forced the indigent into a set of unsustainable practices, such as squatting on rainforest lands or living in shanty towns along sewage-laden ditches.

In terms of jobs, laying off large numbers of state employees has had a great impact on the middle class and women across the region. Technical and professional workers lost their jobs by the thousands. In societies of limited professional opportunities for women, government employment was often the only option for occupational mobility. The environmental impact of state layoffs is direct: thousands of teachers, doctors, agronomists, environmental ministry workers and foresters all lost their jobs. Even in less drastic cases when hiring or wages were frozen or cut, the best public employees left where they could for jobs in the private sector. The first places to lose key personnel were often rural offices, which as far as agronomists are concerned were understaffed to begin with. In these cases the efficiency of the offices was damaged and morale plummeted. Conservation programmes and environmental regulations often languished as a result.

Trade

The debt burden and the resulting emphasis on natural resource-led export development have put in place almost insurmountable barriers to sustainable economic development and environmental management for the overwhelming majority of developing countries. The problems faced by these countries are not merely, as some have argued, a result of corruption or irresponsible actions. Rather, the least developed countries have not managed to escape the vicious circle of debt and resource exploitation due to the straitjacket

imposed by the prevailing global economic order.

In 1817, David Ricardo put forth the idea that every nation held a 'comparative advantage' – that is, an ability to produce a product or provide a service more efficiently than others – and all nations stood to gain by specialising in those products and trading with each other for everything else. In the 1930s, Eli Hecksher and Bertil Ohlin argued that by specialising in their 'comparative advantage' all countries could achieve absolute welfare gains through international trade. By the end of World War II, virtually all trade theorists agreed that the best path to economic growth lay through the free exchange of goods and services.

Yet the flaw underpinning this theory – particularly for developing countries which have non-diversified economies that are overly reliant on a limited range of exports – is that it is based on the unrealistic assumption of stable prices. Many developing countries have been hit hard by long-term deteriorations in the relative prices of their exports (known in economic jargon as their 'terms of trade'). Notwithstanding the obvious environmental implications of being a net exporter of natural resources, this type of terms of trade deterioration means that poor nations – which comprise the vast majority of primary goods exporters – have to 'produce' more natural resources over time just to maintain the same level of export earnings. In the world economy, export earnings are crucial to any country's chances of surviving (never mind progressing). Without foreign exchange, one cannot pay for imports, service one's debts, participate in international organisations, and so on. Thus, exporters of industrial manufactures or high-value services find themselves at the commanding heights of the global economy, while others – the exporters of their natural resources – remain stuck at the bottom of the world's economic hierarchy, condemned to increase the exploitation of their natural resources just to keep their heads above water.

Roldan Muradian and Joan Martinez-Alier have documented the patterned behaviour of Latin American countries in response to these dramatic price declines.⁷ Their analysis substantiates the claim that falling prices correlate closely with large primary product (raw materials) export drives. On this basis they argue that Southern countries are experiencing a decline in their 'environmental terms of

trade'. That is to say, they bear disproportionate environmental burdens at home simply by virtue of having a 'natural comparative advantage' in primary goods.

Besides this troubling trend in export prices, commodity markets often exhibit extreme volatility. This poses a separate set of issues for countries with relatively undiversified export bases. For the poorest countries, a commodity 'bust' entails massive shortfalls in government revenues and therefore fewer public services, including health, education and environmental protection. Indeed, most countries that rely on extracting and exporting their natural resources already have feeble domestic institutions incapable of delivering basic public services. The narrowness of a nation's export structure also acts as a brake on the degree of democratic 'voice and accountability' and the effective mobilisation of civil society groups within a nation.⁸ Among their other failings, repressive, unaccountable governments find it easier to ignore the demands of environmental activists.

Meanwhile, the trade rules imposed by the global 'haves' ensure that the global 'have-nots' are kept firmly at the bottom of the heap. In Mexico, following the introduction of the North American Free Trade Agreement (NAFTA) in 1994, small farmers of maize have faced nearly impossible odds in competing with industrially produced and subsidised maize from the United States. In countries such as Mexico, Honduras and Nicaragua, there are no alternative sources of employment for millions of poorly educated rural workers. Social safety nets of unemployment or health benefits are practically non-existent. Hunger, family and community breakdown have frequently resulted – and the prospects are for disruptions on a much wider scale if the Central American Free Trade Agreement (CAFTA) and the Free Trade Area of the Americas (FTAA) are implemented. Ironically, the United States and Europe, the strongest advocates of trade liberalisation, continue to heavily subsidise their agricultural producers, while the strings attached to structural adjustment programmes prevent developing countries from doing the same. Trade liberalisation means developing countries are unable to implement policies that would support the small and medium farmer and promote the sustainable agricultural practices that protect and nurture the environment.

Investment

Recent studies of commodity chains tracing the source of products back to their component raw materials, and following their transformation and assembly to the point of sale, clearly show the inequalities in the system by documenting where in the chains the most benefits accrue. Most poor nations are stuck in very low-value links of supplying cheap labour and cheap resources, while wealthy nations continue to do the high-profit stages of research, product development and marketing. The example of transnational mining and oil corporations shows how the system exploits the natural resources of poor nations for the benefit of wealthy classes in Northern nations, yet generates few benefits for the bulk of the world's nations and people – while also despoiling their environments.

To keep these resources and labour cheap and so satisfy Northern investors or purchasers, poor nations discourage environmental activists and trade unions. Export processing zones (also known as free trade zones) have been established around the globe which provide tax havens for assembly plants, but have come under fire for repressive labour practices and for producing few 'multiplier effects' in the local economy. Corporations doing different stages of assembly in different nations have been criticised for evading taxes by lowering their self-reports on the value of their exported products. This process, called 'transfer pricing', limits the ability of nations to use tax revenues to address the social and environmental costs of these zones and their factories.

Many such zones are established away from the major capital city to take advantage of cheap resources, cheap housing and cheap labour. These 'green field' sites are also chosen to avoid urban centres where unions have been successful at organising workers to demand higher wages and better working conditions. To draw firms to green field sites and to extract their natural resources, many governments have provided infrastructure such as electricity, roads, water and sewerage services, in addition to special tax 'holidays' (exemptions from paying taxes). In some cases, the provision of below-cost energy has required governments to construct coal power plants and massive hydroelectric dams, with their accompanying social and environmental consequences.

Many pollution-intensive industries have moved to the developing world. Some industries have seen plant after plant close, only to be

reopened elsewhere, where wages are lower and environmental laws are weak or simply not enforced. A nagging and unresolved issue is the extent to which free trade and investment will push downwards on local efforts to regulate environmental damage. NAFTA, CAFTA, and the FTAA all raise issues of whether we are going to see an environmental 'race to the bottom'.⁹

Because the wealthy Northern countries are increasingly reliant on the South's resources and industrial labour, the environmental consequences of the goods and services that the people of Northern nations consume have been passed to the South. Rich nations consume more natural resources today than ever before – both in absolute and relative terms – and to do this, they simply import most of the material-intensive and energy-intensive goods that their lifestyles require from the South, leaving the South to bear the environmental burden of resource extraction and industrial pollution from the production of these goods. In other words, the rich nations are simply 'out-sourcing' the material consequences of the goods and services they consume.

Aid

Compared to the debt stock of Latin America, aid flows may at first seem like a drop in the ocean. However, in capital-short countries, foreign aid often has a 'catalytic effect' for other larger sources of investment. For example, the involvement of the IMF and the World Bank in development projects is often seen by private investors as a 'Good Housekeeping seal of approval', signalling confidence in sound economic policies and good governance, and therefore attracting additional sources of public and private finance. Many critics have thus accused these international financial institutions of driving new rounds of environmental degradation in Latin America and the Caribbean.

Many have argued that the emphasis on funding development 'megaprojects' sharpens the logic of searching for quick export commodities that may ultimately harm the environment. Megaprojects are notoriously easy to begin, but because weak states find it tremendously difficult to enforce meaningful social and environmental regulations, their ability to soften the impact of such projects is severely limited. Consequently, many megaprojects have had devastating environmental consequences and some have been

strongly criticised for their questionable benefits to human welfare. Indigenous populations in relatively undisturbed natural habitats are often the primary victims. Corruption as well as class and urban biases have been widely reported; as a result, many externally-financed megaprojects are thought to have benefited mainly political elites and well-connected government contractors. Strong political pressure from environmentalists has often been necessary for improvements to be made, or even for cursory environmental or social impact assessments to be completed.

One example of the social and environmental impacts of megaprojects is a massive iron mining project at Carajás in the eastern Brazilian Amazon. The World Bank financed a crucial US\$300 million portion of the project, opening the way for other investors. The project was made a Brazilian priority in 1980 when an area 895,000 square kilometres in size – equivalent to France and Britain combined – was designated for the Greater Carajás Project. An 800 kilometre railroad to the ocean, a massive hydroelectric dam, new cities and continental-scale highways were planned, at a cost of over US\$3 billion. To help create export products and hard currency for debt payments, an enormous incentive area around the mine and railroad was to be created. Under the plan, large areas of forest would be cleared for plantations, enormous lowlands would be flooded for hydroelectric projects, and 23 pig iron smelters (crude steel foundries) would be fuelled with charcoal from native forests.

European and US environmentalists mobilised opposition to the project, which was substantially scaled down. However, over 70 million tons per year of ore are today carried by massive trains to the sea, where they are loaded on freighters bound for Japan, West Germany, South Korea, France, Italy, and the United States. The environmental cost has been immense – and the project would not have got off the ground without World Bank involvement.

Conclusion

Inequality is at the heart of the Latin American environmental crisis – inequality within Latin American countries, and inequality on a global scale between Latin American countries and the rich nations of the global North. This inequality has colonial roots, but it is reinforced by the prevailing structures of aid, trade, debt and investment.

As we have seen, Latin America's weak economic foundations can be traced back to its insertion in the global economy as a provider of raw materials for export. Mining and large scale agriculture have together been major contributors to deforestation and general environmental degradation such as soil erosion and water pollution. They have also generated unacceptable social and economic inequalities and vulnerabilities, such as land concentration and the neglect of food crops in favour of producing cash crops for export. The intense specialisation in a limited number of export commodities tends to militate against efforts to promote community-based, diversified economies that are less environmentally degrading and more in harmony with local ecological constraints.

The need to generate foreign exchange to service their large foreign debt prevents Latin American countries from taking a sustainable approach to economic development, and leaves them subject to the neoliberal economic recipes advocated by international financial institutions such as the IMF and the World Bank. These institutions impose structural adjustment programmes with attached strings such as trade liberalisation and the privatisation of public services. Trade liberalisation continues this unsustainable pattern of development through its emphasis on exports. Furthermore, the 'shrinking of the state' demanded by the neoliberal dogma has often produced a radical reduction of the services that the state formerly provided to peasant farmers. The result has been economic stagnation and poverty.

It is now widely acknowledged that poverty and environmental degradation are often mutually reinforcing. Poor farmers find themselves in a vicious circle. The best land is in the hands of agribusinesses dedicated to cultivating commodities for export. The majority of small farmers have little choice but to farm on marginal land such as steep slopes with very poor soil quality. In farming on this land, not only do they cause environmental damage but also they perpetuate their poverty, since the land they use is generally low in productivity and, as a result of poor resource management, its productivity decreases further. Thus their poverty acts both as cause and effect of environmental degradation.

On a daily basis environmental degradation greatly diminishes the ability of poor people to gain a livelihood, and consequently it has serious impacts on their nutritional status and on their health. For

instance, soil erosion as a result of deforestation means lower agricultural yields. The result is, on the one hand, less produce to feed the family; and on the other, less produce to sell, and therefore less income to provide for the family.

In response to this situation, agroecology or sustainable agriculture has become a key livelihood strategy for poor farmers in Latin America and the Caribbean. This approach to agriculture is environmentally, economically, culturally and socially more sustainable. Breaking away from mono cropping (growing a single crop) emphasises crop diversity and rotation, conserves natural resources, reduces the use of expensive and unsafe artificial agrochemicals such as pesticides and herbicides, and favours small and medium scale farming rather than the concentration of land in the hands of agribusinesses and large plantations and ranches. When it prioritises the production of staple crops, sustainable agriculture also addresses the need for local food security.

Such small scale and community based solutions can bring surprising improvements in welfare and environmental sustainability. A mix of products can be used for both subsistence and local and more global markets. These communities are often far more biodiverse, and far less resource intensive, than is export agriculture run by transnational corporations or their contractors and suppliers.

However, if Latin American countries are to pull themselves out of the poverty trap that locks them into a downward spiral of environmental degradation, sustainable agriculture is not on its own sufficient. A broader approach to sustainable development is needed that reflects the socio-economic and environmental characteristics of these countries. Development cannot be measured in narrow economic terms such as a country's Gross Domestic Product. Rather the focus needs to be on sustainable human development, wealth distribution, food security, equality, education, health, water and environmental sustainability. Following a 'one size fits all' neoliberal approach to economic development, such as trade liberalisation and privatisation of public services, will continue to exacerbate the socio-economic and environmental vulnerabilities of the region.

Instead, Latin American governments must be given sufficient 'policy space' to implement policies that enable them to diversify their economies. Pursuing only their 'natural comparative advantage' and relying on a few basic export commodities locks poor countries

into their poverty and into increasing environmental vulnerability. These nations face a structural problem: how do they get out of this vicious circle? At present they are prevented from doing so by the burden of debt and by global trade rules. If developed countries genuinely want to contribute to the reduction of poverty in developing countries, they must start by cancelling the debt that places an insurmountable obstacle to developing countries' sustainable development, results in environmental degradation, has devastating impacts on ordinary people, and allows for constant outside interference in their economies by international institutions such as the World Bank and the IMF. A clear example of this outside interference is forcing developing countries to liberalise their trade and privatise their public services even if this contributes to exacerbating poverty and environmental vulnerability.

We live in a closely interconnected world and it is important that we understand that poverty and environmental degradation in developing countries is a direct consequence of policies and structures decided and imposed by the rich North. If we care about the globalised world we live in, then we must recognise that tackling environmental vulnerability is our shared responsibility.

Notes

A full list of references for this paper is available on the CIIR website at www.ciir.org.

- ¹ Minc, C (2001) 'A ecologia nos barrancos da cidade' in Viana, G, Silva, M, and Diniz, N (eds) *O desafio da sustentabilidade: Um debate socioambiental no Brasil*, Editora Fundação Perseu Abramo, São Paulo.
- ² World Resources Institute (1996) *World resources 1996-97*, Oxford University Press, New York, p153.
- ³ As above, p39.
- ⁴ Roberts, J T, and Parks, B (forthcoming) *A climate of injustice: Global inequality and climate change*.
- ⁵ International Federation of Red Cross and Red Crescent Societies (1999) *World disasters report*, Geneva.
- ⁶ Friends of the Earth (1999) *The IMF: Selling the environment short*, Washington DC, p11.
- ⁷ Muradian, R, and Martinez-Alier, J (2001) *Globalisation and poverty: An ecological perspective*, Heinrich Boell Foundation, Berlin; and Muradian, R, and Martinez-Alier, J (2001) 'South-North materials flow: History and environmental repercussions' in *Innovation: The European Journal of Social Science Research*, 14(2): 171-187.
- ⁸ Roberts, J T, Parks, B, and Vásquez, A (2004) 'Who ratifies environmental treaties and why? – A world-system analysis of participation in 22 treaties by 192 nations' in *Global Environmental Politics* 4(3) (forthcoming).
- ⁹ The World Trade Organisation's rules are most worrisome on this point, since it forbids nations from imposing limits on imports for most environmental reasons.

Afterword: Signs of hope

By Ellen Teague

Christian Ecology Link (CEL) is a multi-denominational UK Christian organisation for people concerned about the environment. Founded in 1981, it promotes the 'LOAF' principles, encouraging food which is Locally produced, Organically grown, Animal friendly and Fairly traded. CEL's climate change campaign urges individuals and groups to lobby the UK government to lead decisive international action on the issue and make personal lifestyle commitments such as conserving energy. There are close links with the climate change programme of the World Council of Churches, which in the 1980s ran a ground-breaking campaign on *Justice, peace and the integrity of creation*. Also in the UK, around 200 parishes are involved in the eco-congregation programme, devised to help churches take spiritual and practical steps to care for God's creation.

Internationally, awareness within Catholic episcopal conferences has grown since Pope John Paul II encouraged 'ecological awareness' in his 1990 World Peace Day message. In 1997, Bishop Zacharias Jimenez of Pagadian in the Philippines wrote to the shareholders of Rio Tinto, the world's largest mining company, supporting the opposition of indigenous Subaanen tribal peoples to exploration and mining in their ancestral land on the grounds of environmental degradation. In southern Africa in 2000 the bishops called on the South African government to introduce a five-year freeze on genetic engineering technologies, wanting the import and export of GM food to be stopped and calling for its compulsory labelling. Archbishop Wilfred Napier of Durban, president of the Bishops' Conference (now a cardinal), commented that: 'the marketing companies say that food production will be increased but there are no guarantees for the poor who are being forced to go along with these changes.' The US bishops, in 2002, warned that the level of scientific consensus on global warming 'obligates our taking action intended to avert potential dangers'. That same year the Australian Bishops' Conference set up a new agency to focus on environmental issues.

Christian development agencies internationally are promoting the Millennium Development Goals, to which over 160 nations committed themselves in the year 2000. The eight promises include care of the environment and provision of water. Regionally,

initiatives include the Otin Taai declaration, issued after the Pacific Churches' Consultation on Climate Change met in Kiribati in March 2004. It called for Christians throughout the world 'to act in solidarity with us to reduce the causes of human-induced climate change'. The title, pronounced 'osin tai', means sunrise, a symbol of hope in the Kiribati language.

Ellen Teague is a freelance Catholic journalist who writes and campaigns on justice, peace and ecology issues.

Environmental action

This Comment is part of a series of CIIR publications on the environment. These publications include the faith reflection *Living lightly on the earth: Christian stewardship of the environment*. The publications are part of CIIR's environmental advocacy project that seeks to raise awareness and understanding of the connections between the environment and development. For more information visit the CIIR website www.ciir.org or contact environment@ciir.org.

Changing minds, changing lives

The Catholic Institute for International Relations (CIIR) is an international charity working for sustainable development and the eradication of poverty. Founded in 1940, CIIR is rooted in gospel values and a progressive Catholic tradition. We work with people of all faiths and none, and are independent of official church structures.

We work in partnership with civil society organisations and governments in 11 countries around the world. In some countries, we are known as International Cooperation for Development (ICD).

We recruit skilled professionals, known as development workers, to work on projects that our local partners lead on. These projects cover a range of areas such as health, education, communications and the environment.

Both through direct support and by international policy advocacy we seek to ensure that the voices of the poor and excluded are heard by the powerful. When we advocate for change, our advocacy is rooted in the views, concerns and experiences of our partners.

CIIR is a membership organisation, with over 1,500 members worldwide. Our members are crucial to us, providing support and helping steer the work we do. We also encourage members to take action for justice, with many actively involved in our current campaigns.

For more information, including details of how to join CIIR, see the CIIR website www.ciir.org.



People and the environment on the edge

Five hundred years of exploitation have severely damaged the environment in Latin America and the Caribbean. Today, it is poor people who continue to suffer most from the consequences of this environmental damage and degradation.

In this Comment, J Timmons Roberts and Bradley C Parks examine the causes and consequences of such problems as deforestation, water contamination, and soil erosion. They argue that neoliberal structures of aid, trade, debt and investment are the underlying root causes of the region's 'environmental vulnerability' – whereby poor people are most vulnerable to the adverse consequences of the stresses that the modern world is placing on the environment.



Catholic Institute for International Relations

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