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ECONOMIC DEVELOPMENT, TRADE, AND THE ENVIRONMENT

Kym Anderson

Department of Economics and
Centre for International Economic Studies
University of Adelaide
Adelaide SA 5005
Australia

Phone: (61 8) 3034712
Fax: (61 8) 223 1460
Email: kanderson@economics.adelaide.edu.au

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Abstract

The recent acceleration of regional and global integration of national economies has brought with it greater scrutiny of domestic policies that affect the competitiveness of industries in the international marketplace. Simultaneously, concerns about resource depletion and environmental degradation at national, regional and global levels have been growing rapidly, leading to calls for policies to slow resource exploitation and enforce stricter environmental standards. Together these developments have caused an entwining of policies relating to trade, foreign investment, and the environment. That entwining has the *potential* to bring about good outcomes in terms of the economy and the environment, but unless it is carefully managed there is the risk that both the economy and the environment will suffer.

The paper first looks at why environmental and other social policies are being subjected to more international scrutiny, and why environmental issues are becoming more entwined with trade policy. It then examines the relationships between economic growth, trade, foreign investment, and the environment. The following section discusses how much the WTO could or should become involved in environmental issues. The paper then draws out the implications for developing and other resource-abundant countries and suggesting how they might respond. The paper concludes that (a) the *direct* effect on developing economies is likely to be small and for some may even be positive through improved terms of trade and/or compensatory transfer payments, but (b) there is an important *indirect* negative effect on them and other economies such as Australia's insofar as there is an erosion of the rules-based multilateral trading system that would result from an over-use of trade measures to pursue environmental objectives.

ECONOMIC DEVELOPMENT, TRADE, AND THE ENVIRONMENT

Kym Anderson

During the past decade or so, economic policy reforms together with the communications revolution have accelerated national, regional and global economic integration. That has brought with it greater scrutiny of domestic policies that affect the competitiveness of industries in the international marketplace. Simultaneously, concerns about resource depletion and environmental degradation, again at national, regional and global levels, have been growing, leading to calls to slow resource exploitation and enforce stricter environmental standards. Together these developments have caused an entwining of policies relating to trade, foreign investment, and the environment. That entwining has the *potential* to bring about good outcomes in terms of the economy and the natural environment, but unless it is carefully managed there is a considerable risk that both the economy and the environment will suffer.

Why is economic development and the deepening of economic integration raising the demand for greater international cooperation or coercion over natural resource use and environmental policies? Under what circumstances (if any) is trade policy an appropriate instrument for addressing such concerns? What does this imply for the global trading system, for regional trading arrangements, and for their interaction? How will developing countries be affected, and what should they do about this phenomenon?

In addressing these questions, this paper first looks at why environmental and other social policies are being subjected to more international scrutiny, and in particular why environmental issues are becoming more entwined with trade and foreign investment policies. It then examines the relationships between economic growth, trade, foreign investment, and the environment. The following section discusses how much the WTO could or should become involved in environmental issues. The paper concludes by drawing out the implications for developing countries' policies and suggesting how they might respond, both domestically and in their relationships with other countries and the WTO.

Why social policies are coming under closer international scrutiny

We should not be surprised that there are vast differences across countries in environmental and other social policies (worker rights and standards, human rights more generally, copyright, patent and other property rights, education and health policies, policies in support for national culture or exclusion of foreign cultural influences). These differences partly reflect per capita income differences: as communities become richer, so do their demands for social policies and higher standards. In the case of environmental policies, they also reflect differences in per capita endowments of natural resources and environmental amenities. Policy differences exist also because of differences in tastes and preferences. Indeed one of the key reasons for nationhood is to bring together and distinguish one grouping of people whose preferences are more similar to each other than to those of neighbouring groups (Alesina and Spolaore 1995).

As economic integration proceeds, though, pressure increases to reduce differences in social policies that have economic consequences. This has clearly happened *within* countries in the course of their economic development: numerous local, state or provincial policies/standards have gradually been replaced by national standards and conformance assessment (National Research Council 1995). The motivation is not just to reduce administrative and conformance costs. It also results from concerns in high-standards regions that costs of production for some firms and industries are higher in their region than in regions with lower standards, causing them to be less competitive. These differences become ever-more important as traditional barriers to trade and investment between regions fall.

Harmonization of social policies and standards could go in either direction, however, with winners and losers in each region trying to influence the outcome. And there is no reason to presume that overall national economic and social welfare will improve because of those policies being harmonized: it all depends on how close the most influential groups' standards are to those of the median voter.

Similar forces to those intra-national ones are also at work in the international arena (Bhagwati 1996). There have been substantial reductions in recent decades in traditional barriers to foreign competition, including international transport and communication costs, tariffs, and other governmental policies that inhibit flows of goods, services, and capital across national borders.[1] The resulting extra exposure of national economies to competition from abroad -- in part due to the very success of GATT and regional integration agreements in promoting trade liberalization -- has caused attention to focus more sharply on domestic policies, including cost-raising social policies and standards, that continue to reduce the international competitiveness of some firms and industries in each country (Bhagwati 1996). These harmed producers are especially likely to protest when significant new players with lower standards become competitors. This has happened increasingly during the past quarter century first with the growth of East Asia's newly industrializing economies and then the opening up of China and numerous other transition and developing countries.

It has been suggested that one of the driving forces behind regional integration initiatives has been the tardiness of the GATT in taking up social policy issues among its large and diverse group of contracting parties (Lawrence 1995). Achieving agreement to harmonize social policies and otherwise coordinate trade- and investment-related domestic policy reforms is easier the less the per capita incomes, tastes and preferences differ between the countries concerned. Hence we observe the formation of trade blocs more among similar than disparate economies. We also observe the inclusion of social in addition to trade policies more in integration agreements involving richer than poorer economies, presumably because (a) the demand for social policies is income elastic, and (b) barriers to trade and investment flows (both natural and governmental) between countries tend to be lower among rich countries than between them and poorer countries or among poorer countries.

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[1] These reductions are reflected in the fact that the volume of merchandise trade has been growing nearly twice as fast as the volume of merchandise output globally (3.9 compared with 2.1 per cent per year during 1980-92); and trade in commercial services has grown even faster, raising its share of global exports of goods and commercial services from 17 to 21 per cent during 1980-92 (GATT 1994). Direct foreign investment, meanwhile, has grown nearly twice as fast as international trade globally over the past decade or so, following the deregulation of many countries' financial markets and the revolution in communications and data transmission.

When dissimilar countries have sought to join such blocs (e.g., Mediterraneans to the European Union, Mexico to the NAFTA), advocates for higher standards have endeavoured to tie market access to the upward harmonization of social policies. To a considerable extent they have succeeded in doing so in the EU. They were also in the United States after President Clinton came into office, to the extent that side agreements on environmental and labour standards were added to the NAFTA in the closing hours of the negotiations.

As for trade outside these blocs, we tend to observe advocates for high standards supporting import restrictions on like products from lower-standard countries. Why? Because such restrictions simultaneously reduce opposition by local firms to the raising of standards at home *and* increase the incentive for foreign firms and their governments to adopt higher standards abroad (out of fear of being denied market access). However, such uses of trade policy are both discriminatory and protectionist. That brings advocates for higher standard both into direct conflict with supporters of liberal world trade and into coalition with traditional protectionist interests. Fear of the latter gaining superficial respectability in arguing against trade liberalization has led to claims that 'social correctness' is becoming the New Protectionism (Steil 1994).

Why environmental issues are becoming entwined with trade and investment policies

The list of environmental concerns with international or global dimensions has grown rapidly in recent years. In addition to people being worried about air, water, soil and visual pollution at the local, national and regional[2] levels, some of that pollution is believed to be also damaging the environment on a global scale, for example through ozone depletion and climate change. Some in rich countries are concerned that these problems will be exacerbated as economic growth takes off in newly industrializing countries with laxer environmental standards. More and more people worry also about resource depletion, species extinction and animal welfare at the global level, regardless of national boundaries. Ongoing integration of the world economy also brings with it new health and safety concerns by consumers of imported products. Needless to say, personal values play an important role in debates on these issues. Hence there is considerable scope for friction between countries with different preferences, resource endowments, incomes, and knowledge about how different activities and policies affect the environment, and therefore different perceptions of optimal national and global environmental and resource policies.

Fluctuate though they might with the business cycle, these heightened concerns for resource depletion and the environment are likely to keep growing. One reason is that, even though uncertainties remain, the scientific basis for many of these concerns is perceived to be more solid now than was the case twenty years ago. Another reason is that both the world's population and its real per capita income continue to increase at very high rates by historical standards. Unfortunately, though, the supplies of most natural resources and environmental services are limited, and markets for many of them are incomplete or

[2] Trans-border pollution issues affecting adjoining countries of a region are not discussed in what follows since they are usually resolved by intergovernmental agreement without having to resort to trade policy measures, the free-rider problem being absent because of the small number of countries typically involved.

absent.[3] Markets are under-developed because of disputed, ambiguous or non-existent property rights, or because of the high cost of enforcing those rights.

It is true that the more advanced economies have established institutional structures to help handle the tasks of arriving at a social consensus on what are appropriate environmental or sustainable development policies for that society, of allocating property rights, and of enforcing policies. The same is true in some traditional societies before they begin to 'modernize' and their resources come under pressure because of declining mortality rates. But it is less true in the newly 'modernizing' economies, where growth in the world's population and consumption is expected to be concentrated for the foreseeable future. And, at the multilateral level, co-operative intergovernmental mechanisms in the environmental area have only recently begun to be formed and will take some time before they become very effective, especially where free-rider problems are rife.

So, with sufficient fora yet to be fully developed for multilateral environmental dialogue, and with the problems increasingly being perceived as urgent as new scientific evidence becomes available, there is a growing interest among environmental groups -- especially in the more advanced economies -- in using one of the few policy instruments apparently available to their governments, namely trade restrictions, to influence environmental outcomes both at home and abroad.

Environmental groups perceive trade policy as a means both of raising national environmental standards at home and abroad and of inducing countries to become signatories to and abide by international environmental agreements. On the first, these groups are aware that, unless compensated, firms will oppose the raising of domestic standards if competitors abroad are not subjected to similar cost increases. But since the loss of competitiveness can be offset by import restrictions on products from lower-standard countries, such restrictions can at the same time remove opposition by local firms to higher standards at home *and* increase the incentive for foreign firms and their governments to adopt higher standards abroad. Not surprisingly, those features make trade policy very attractive to environmentalists. On the second, with respect to international environmental agreements, a major attraction of trade measures is that they can be effective as sticks or carrots because they are relatively easy to use and are immediate in their impact. In both cases, even the *threat* of trade sanctions can have a rapid and persuasive effect in raising national standards and/or in encouraging a country to join an international environmental agreement and subsequently to abide by its rules.

Already we have seen the use of discriminatory trade restrictions affecting particular targeted products. Examples include the Montreal Protocol on CFC substances that deplete the ozone layer, and the CITES agreement on trade in endangered species. There have also been proposals to use trade sanctions against unrelated products. These

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[3] This does not apply equally to all natural resources and environmental services of course. The doomsdayers such as Meadows et al. (1972) have been shown to be spectacularly wrong in predicting the exhaustion of minerals and energy raw materials, for example, because they have failed to take into account economic feedback mechanisms. Beckerman (1992) notes that the cumulative world consumption of many minerals during the past quarter century exceeded 'known reserves' at the beginning of the period, yet today's revised 'known reserves' nevertheless exceed those of twenty five years ago! The same cannot be said for tropical hardwoods and some fish species, however, although in these cases there is scope to move further from the current 'hunter/gatherer' technology to using land or water more intensively in planting trees for timber or practicing aquaculture -- in the same way as agriculture uses land to produce most other forms of food and fibre.

aim chiefly at persuading developing countries to adopt stricter environmental standards (for example, threats to provide less open access to textile and other markets in industrial countries unless logging is curtailed or managed on a more sustainable basis).

The relationships between economic growth, trade, investment, and the environment

The standard theory of changing comparative advantages in a growing world economy, which has been developed without consideration of environmental concerns, can readily be modified to incorporate at least some of those concerns. As espoused by Krueger (1977) and Leamer (1987), this theory suggests that when a developing country opens up to international trade, its exports initially will be specialized in primary products. This is because its stocks of produced capital relative to natural resources are comparatively low. Should those non-natural capital stocks per worker (including human skills) expand more for this country than globally, the country's comparative advantage will gradually shift from the extraction of raw materials (minerals, timber from natural forests) to more capital- and skill-intensive activities (particularly manufactures and services) -- except in relatively land-abundant countries where produced capital and new or newly imported capital-intensive technologies may be employed profitably to extract minerals or farm the land. The industrialization will begin at an earlier stage of economic development, and the non-primary exports will tend to be more intensive in the use of unskilled labour initially, the more natural resource-poor or densely populated the country. In the case of manufactures, the process of upgrading to more capital-intensive production over time leaves room in international markets for later-industrializing countries also to begin with labour-intensive export-oriented manufacturing.

If national boundaries were such that there were no international environmental spillovers, and there were no global commons, this story need be complicated only slightly to incorporate non-marketed environmental services and pollution by-products. The complication required is simply to allow for the fact that as a country's per capita income and industrial output grow, the value its citizens place on the environment increases and with it their demands for proper valuation of resource depletion and environmental degradation, for the assigning and better policing of property rights, and for the implementation of costly domestic pollution abatement policies -- at least after certain threshold levels of income and/or pollution are reached.[4] Beyond those threshold points the severity of such abatement policies is likely to be positively correlated with per capita income, with population density, and with the degree of urbanization.

If all economies were growing equally rapidly, the progressive introduction of national environmental taxes and regulations would tend to cause pollution-intensive production processes to gradually relocate from wealthier and/or more densely populated countries to developing and/or more sparsely populated countries. They would also slow or reverse the growth in the quantity demanded of products whose consumption is pollutive, and more so in wealthier and/or more densely populated countries where taxes on such products would tend to be highest. If more-advanced economies are net importers

[4] Three recent papers reporting evidence in support of the claim that the demand for implementing and enforcing pollution abatement policies is income-elastic are Radetzki (1992), Grossman and Krueger (1993), and Grossman (1995). These studies suggest an inverted U-shaped 'environmental transition' may be commonplace, with pollution per capita initially rising with income but subsequently falling. See also Deacon and Shapiro (1975) on the correlation between income levels and voter attitudes toward environmental priorities.

(net exporters) of products whose production (consumption) is pollutive, these countries' optimal environmental policies would worsen their terms of trade to the benefit of poorer economies, and conversely (Siebert et al. 1980; Anderson 1992a). Thus even countries without (or with unchanged) environmental policies will be affected through foreign trade and investment by the development of environmental policies that accompany growth in *other* economies.[5] The extent of international relocation of productive activities due to the raising and enforcement of environmental standards should not be exaggerated, however. Recent studies suggest the effect of such policies on comparative costs may be quite minor.[6]

The story becomes more complicated, however, when account is taken of policy reactions to international environmental problems such as the degrading of global commons. The ban on ivory trade under the Convention on International Trade in Endangered Species (CITES) provides an extreme example: the strong comparative advantage that southern African nations had in elephant products virtually disappeared when the ban was introduced in 1989. Another is the recent ban, adopted under the Basel Convention relating to hazardous waste, on exports of so-called hazardous recyclables from industrial to developing countries. That ban threatens the growth prospects for recycling industries in developing countries. A third example is the proposed limitation on imports into some high-income countries of tropical hardwoods, the aim of which is to discourage deforestation. An import ban of this kind would reduce the growth in exports of logs and perhaps sawn timber from those developing countries still well endowed with hardwood forests, while improving the terms of trade of other net importers of hardwood such as Japan, Korea and Taiwan. In addition, the Montreal Protocol on phasing out the use of ozone-depleting CFCs incorporates discriminatory trade provisions, designed to limit the relocation from signatory to non-signatory countries of industries producing or using CFCs, as well as to encourage non-signatories to accede to the Protocol. And there is the infamous example of the United States ban on the importation of Mexican tuna which US authorities deem to have been caught in dolphin-unfriendly nets: domestic US regulations affecting the use of dolphin-unfriendly nets on US registered fishing vessels, if implemented alone, would have boosted Mexican competitiveness in tuna fishing, but the subsequent ban on tuna imports instead reduced it. As is clear in the latter two examples, the motive for trade policy action can be a mixture of national competitiveness concerns and concerns -- especially in wealthier countries (typically not shared to the same extent by developing countries) -- for the global commons and for animal welfare.

Two facts therefore need to be recognised. The first is that there *are* important international environmental spillovers, both physical and -- for want of a better term -- psychological. An example of the latter is that I may grieve if another country's activities

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[5] Similarly, if as they grow economies were to institutionally shorten working hours per week, raise wages for time worked outside those hours, or otherwise increase the cost of labour time in attempting to raise labour standards, that would speed the transformation of those economies' comparative advantages away from labour-intensive activities. If those institutional changes affected mainly unskilled labour, the competitiveness of less developed economies in unskilled labour intensive products would strengthen even faster (Krueger 1996).

[6] See, for example, Leonard (1988), Low (1992) and Jaffe et al. (1995). As well, Tobey (1990) finds little evidence of actual changes in patterns of trade specialization in response to the imposition of environmental regulations since the 1960s. However, as noted by Hockman and Leidy (1992), the absence of changes in trade patterns may be because import barriers were raised to offset any decline in the competitiveness of affected industries. Technological changes induced by the raising of environmental standards also tend to reduce the international relocation of production.

threaten a particular animal or plant species in its jurisdiction. Or I may grieve if I believe your desires for higher environmental standards in your country are not being recognised sufficiently by your national government (a political market failure). Controversial though such views are,[7] many people perceive a need for multilateral action to reduce these spillover problems -- and that is where trade policy enter the debate. Trade measures are seen by environmentalists as providing powerful carrots and/or sticks for attracting signatories and/or penalizing non-signatories to multilateral environmental agreements, as well as for encouraging other countries to adopt better national environmental policies, including for the sake of their own citizens and environment.

The other fact that needs to be recognised is that one country's environmental policy choice is not independent of the choices of other countries. This is because the imposition of higher standards or pollution charges at home alters the international competitiveness of industries, in particular by harming the more pollution-intensive industries. If their competitors abroad were not simultaneously being subjected to similar cost-raising policies, such industries would lobby against the imposition of higher standards at home. And while it is true that producers in the less-pollutive industries at home would benefit from the raising of a particular environmental standard, they are more diffuse and so are not likely to add much support to the lobbying efforts of environmentalists.

It was because of this latter fact that trade policy first entered the environmental picture, back in the latter 1960s when the first wave of widespread concern for the environment began in industrial countries. As already mentioned, environmental groups perceived that, since the loss of competitiveness of pollution-intensive industries could be offset by restrictions on imports from lower-standard countries, such restrictions could at the same time reduce opposition by such industries to higher standards at home *and* increase the incentive for foreign firms and their governments to adopt higher standards abroad to avoid being labeled a 'pollution haven' and subjected to anti 'eco-dumping' duties.

The demand for unilateral use of trade policy for this latter reason has grown over time with the internationalization of the global economy, in two ways. One is that, with the decline in traditional trade barriers (tariffs, transport and communication costs, etc.), any given environmental charge is becoming *relatively* more important as a determinant of international competitiveness, ceteris paribus. And the other is that, with the 1980s' deregulation of financial markets and direct foreign investment, the possibilities for firms to disinvest in high-standard countries and relocate their factories in lower-standard countries have increased markedly. Environmental groups fear this will result in governments delaying the introduction or enforcement of stricter environmental policies -- and possibly even a lowering of standards in a 'race to the bottom' -- in their attempts to attract or retain investments and hence jobs. They also worry that greater relocation opportunities reduce the incentive for firms to develop new technologies that are more environmentally friendly.

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[7] Some would argue that psychological spillovers are less worthy of consideration than physical spillovers, not least because they are less measurable, less 'objective', and hence offer more scope for environmentalists to be 'captured' by traditional protectionists. Others would counter that there is so much uncertainty about the extent and effects of physical spillovers that they too are subjective and hence are qualitatively no different from psychological spillovers. Nor is there any reason *a priori* to presume that one is more important than the other in some 'willingness-to-pay' sense.

Both types of environmental uses of trade policy -- unilaterally, and to increase the workability of multilateral environmental agreements -- raise potential conflicts of interest between rich and poorer countries. There is even dispute over what constitutes the global commons: some would argue that a country or region should not have to bow to international pressure to preserve endangered species in their territory (or at least not without adequate compensation), while others would argue that such countries are merely the custodians of those resources for the benefit of humankind generally.

Why worry about using trade policy to achieve environmental objectives?

The increasing use of discriminatory trade measures to address environmental issues has led to calls from Western Europe and elsewhere for Article XX of the GATT (the exceptions clause) to be amended to allow use of trade barriers for the purpose of protecting the environment. This should concern the world at large, and developing countries in particular, for at least three reasons. First, trade policy measures typically will not be the first-best instruments for achieving environmental objectives. This is because trade sanctions or the threat of trade sanctions do not directly affect the root cause of the environmental problem. Their use in place of more-efficient instruments reduces unnecessarily the level and growth of global economic welfare as conventionally measured, and may even add to rather than reduce global environmental degradation and resource depletion.[8]

The second reason for concern is that producer interest groups and some environmental groups are nevertheless finding it mutually advantageous to use environmental arguments in support of their claims for unilateral import restrictions, particularly following the costly imposition of stricter environmental standards on domestic producers (Hillman and Ursprung 1992, Hoekman and Leidy 1992). In this sense, the environment can provide a convenient additional excuse for raising trade barriers -- and one that is socially respectable. Unfortunately, such protectionist action reduces real incomes not just at home but elsewhere too, especially in developing and natural resource-abundant countries.

And third, in so far as this can lead to an escalation in trade disputes -- as is almost inevitable, especially given the North-South dimension involved and the fact that environmental uses of trade policy are inherently discriminatory -- it could be followed by retaliatory and counter-retaliatory action, the end result of which would be an undermining of the global trading system on which the dynamism of developing economies depends.

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[8] The ban on ivory trade again provides a case in point. By lowering the value of elephant products, the ban reduces the incentive for rural Africans to tolerate elephants trampling their crops and so ultimately could result in more rather than less culling of elephants in some areas. In other areas with poor meat storage and transport facilities, the ivory trade ban has reduced the value of the animal so much that it is no longer profitable to cull the herd. An unfortunate consequence is that bushland in national parks is being decimated by the increased number of elephants, which is endangering other species (Barbier et al. 1990).

Even the *threat* of trade restrictions can be environmentally counterproductive. The talk of European import bans on tropical hardwood logs (together with tariff escallation on timber product imports) has encouraged Indonesia to ban log exports. But since felling has been allowed to continue, this policy has lowered the domestic price of logs and thereby raised effective assistance to Indonesia's furniture and other timber-using industries to extremely high levels (GATT 1991, p.127). At that lower log price and with lower-quality saw-milling techniques it is not surprising that less of each tree is now used, leading to nearly as many trees being felled as prior to the log export ban.

Would trade and investment liberalization harm the environment?

There is another important sense in which aspects of environmentalism are putting at risk the global trading system. It is that, in addition to proposing the use of trade restrictions, some environmentalists also oppose trade and investment liberalization. They oppose GATT/WTO and regional attempts to reduce barriers on at least three grounds: that freer trade means more output and income which they presume would mean more resource depletion and degradation of the natural environment; that freer trade and investment encourages the relocation of environmentally degrading industries to countries with lower environmental protection standards and/or more fragile natural environments, and leads to greater transportation activity which contributes further environmental damage; and that freer foreign investment reduces the incentive to develop environmentally friendlier technologies.

None of these assertions is unambiguously supported by empirical evidence, however. The first, that income increases mean greater damage to the natural environment, may be true initially for some poorer countries (in which case any additional environmental damage has to be weighed against the marginal economic benefits of higher incomes for poor people). But once middle-income status is reached, people tend to alter their behaviour in ways that reduce pressures on the environment. A key change is in family size: higher incomes lead in time to lower population growth rates. This, along with the increased employment opportunities resulting from trade liberalization, is likely to have a major effect in reducing the rate of environmental degradation due to population pressures in developing countries. In rural areas it means fewer people felling trees and denuding hillsides to eke out a subsistence income, while in urban areas it means fewer un- or under-employed squatters in shanty towns with poor sanitation and water.

Another common behavioural change as economies open up and incomes rise is that the demand for education expands, and with more income and education comes more skillful management of all resources including the environment, and more forceful demands on governments to improve the establishment and policing of private property rights and of more stringent environmental policies (Radetski 1992; Grossman 1995). As well, the political cost of implementing such policy reforms is reduced because of increased opportunities for businesses to meet stricter standards by acquiring more and cheaper environmentally benign production processes and products from abroad. One might therefore expect that as and when trade and investment liberalization leads to upward convergence in incomes across the world, there would be an upward harmonization of environmental standards (Casella 1995). That realization points to the inappropriateness of the call by some environmental groups for 'no trade liberalization before upward harmonization of standards'.

And third, the increase in the value of poor people's time in developing countries will alter household activities in another way which is especially important for the environment. It is that the relative price of wood (in terms of time spent gathering it) as a source of household fuel rises. Since about three quarters of the timber harvested in developing countries is used as household fuel, this change could have a major beneficial impact in reducing deforestation and CO_2 levels.

Also questionable is the assertion by some groups that the global environment is necessarily harmed by the relocation of production following trade and investment liberalization. We know from the law of comparative advantage that not *all* industries will

means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade". The latter has been interpreted to mean that the measure must be *primarily* for a conservation purpose (rather than for a mixture of motives) and must be *necessary* in the sense of being the *least GATT-inconsistent* measure available. These provisos have ensured that the Article has been rather narrowly interpreted, which is partly why some environmental groups have felt further greening of the GATT is required (Charnovitz 1991, Esty 1994). But there is nothing in the GATT that prevents a country adopting production or consumption measures to offset environmental externalities associated with either of those sets of activities. Since trade itself is almost never claimed to be the root cause of an environmental problem, supporters of the institution traditionally saw little need to consider trade measures as part of the solution to environmental problems.

When widespread public interest in trade and environmental issues first surfaced in rich countries in the late 1960s/early 1970s, concern focused mainly on industrial pollution within and between neighbouring advanced economies. The foreign trade and investment issues raised at that time were centred on how the imposition of stricter pollution standards at home than abroad might damage the international competitiveness of the home country's firms, and how to avoid such damage through border protection measures. Where the environmental damage caused by production is purely local, the calls by disadvantaged firms for trade restrictions or subsidies to offset the decline in their international competitiveness, because of standards being raised, has no economic logic: such assistance would tend to offset the desired effect of limiting by-product pollution.[9] Nor is it reasonable to conclude that other countries are engaging in 'eco-dumping' if the imports they are able to supply are produced with laxer environmental standards, if these lower standards are consistent with the preferences and natural resource endowments of those exporting countries (e.g., because those countries are poorer and/or less densely populated and less urbanized). Even so, claims for protection against 'eco-dumping' have political appeal and may have resulted in import barriers or export subsidies being higher than would otherwise have been the case in advanced economies. Leading up to the UN Conference on the Human Environment, held in Stockholm in June 1972, the GATT Secretariat produced a background paper on the issue (GATT 1971), and a Working Group on Enviromental Measures and International Trade was established. But no significant changes to the GATT occurred during the Tokyo Round as a result of these concerns being expressed, and it was two decades before the Working Group met for the first time.

Trade policy actions are more likely to occur, and to be more difficult to dismiss as inappropriate, when environmentalists in such countries view particular damage to the environment as unacceptable *regardless of the nation in which the damage occurs*. This case is even more problematic if the damage is not just psychological (as with animal rights) but also physical, for then the relocation of production to a country with laxer environmental standards may *worsen* animal welfare, or the environment at home, in addition to reducing the profitability of the home firms. The US-Mexico dispute over the use of dolphin-unfriendly nets for tuna fishing again comes to mind. In that case the

[9] See, for example, Baumol (1971) and Siebert (1974). Such protection from import competition cannot be justified on economic efficiency grounds (nor for that matter on environmental grounds), because the environmental policy is aiming to eliminate an unjustifiable (implicit) subsidy arising through undervaluation of environmental resources, rather than to add an unjustifiable tax (Snape 1992).

GATT dispute panel ruled against the US ban on imports of tuna from Mexico, partly because the ban did not discriminate according to which type of net was used -- as it cannot, because what is considered objectionable is an aspect of the production process rather than the final traded product itself. The GATT panel ruled against the ban because to do otherwise would have created a huge loophole in the GATT for any country unilaterally to apply trade restrictions as a means of imposing its environmental standards on other countries. Such a loophole would work against the main objective of the multilateral trading system which is to provide stable and predictable nondiscriminatory market access opportunities through agreed rules and disciplines and bound tariffs on imports. For that reason, calls to amend Article XX of the GATT to include 'protection of the environment' as an acceptable exception to the non-discrimination principles of Articles I and III should be resisted.

Environmental provisions in the Uruguay Round agreements

Following a lull in interest brought on by the economic disruptions of the 1973-82 oil-shock period, the current wave of public concern for the natural environment, leading up to and following the United Nations Conference on Environment and Development held in Brazil in June 1992, is much more intense, more widespread, and likely to be sustained and to affect a much broader range of countries and products than was the case prior to the latter 1980s. The Uruguay Round agenda was set by 1986, before the current wave had built up, so the trade/environment issue was not a separate item for negotiation. Nor was there an environmental impact assessment of the Round as a whole. However, the Working Group on Environmental Measures and International Trade that was formed in 1971 was activated for the first time in 1991 and has met frequently since then. As well, several of the Uruguay Round agreements contain provisions that relate to the environment and build on Articles in the General Agreement.

The most fundamental environmental provision in the Uruguay Round is in the Preamble to the agreement to establish the World Trade Organization, which refers to the WTO's objective as enabling all contracting parties the maximum opportunities for:

> "expanding the production and trade in goods and services, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development".

To give initial effect to that, a decision was taken on trade and environment by ministers meeting in Marrakesh in April 1994 to sign the Final Act of the Uruguay Round. They agreed to establish a Committee on Trade and Environment to report to the first biennial meeting of ministers (in December 1996 in Singapore). The other main features of the Uruguay Round agreements with environmental provisions relate to technical barriers to trade, sanitary and phytosanitary measures, and the agreements on subsidies and counterveiling duties and on trade-related intellectual property rights. Overall, the trade liberalization to result from the Uruguay Round is likely to conserve resources and reduce environmental degradation rather than be unfriendly to the natural environment (Anderson 1995).

GATT/WTO and multilateral environmental agreements

The other way in which trade policy is being called upon to help achieve environmental objectives is as a carrot or stick to entice countries to sign and abide by multilateral environmental agreements. That argument, as mentioned above, may have slightly more validity. In the case of combatting global environmental problems such as ozone depletion or climate change, the free-rider problem arises. One of the more obvious and possibly more cost-effective ways to reduce the free-rider problem is to write trade provisions into the agreement, as was done in the 1987 Montreal Protocol on reducing the use of CFCs and halons to slow ozone depletion. To date no GATT contracting party has formally objected to that use of trade policy. Nor have they to the bans on trade in ivory and rhino horn and tiger products that are part of the Convention on International Trade in Endangered Species, or to the trade provisions in the Basel Convention on trade in hazardous wastes. Conflicts may well arise in the future, however, if trade provisions are drafted into more contentious multilateral environmental agreements (e.g., to impose a global carbon tax). That is why this matter figures importantly on the agenda of the new WTO Committee on Trade and Environment. Discussions so far in the GATT/WTO have centred around the idea of providing waivers on a case-by-case basis, but they have also canvassed the worrying idea of providing an 'environmental window' for multilateral environmental agreements within the GATT exceptions clause (Article XX).

To help assess the appropriate role for trade policy in multilateral environmental agreements, it is helpful to recall that supporters of trade liberalization and of environmental protection share a common goal: to improve social welfare. They also share a common problem: the need to foster multilateral cooperation to fully achieve that objective, because in each sphere (the economy, and the environment) there is considerable and increasing interdependence among nations. But the two groups differ in the important respect that supporters of liberal world trade have understood its virtues for two centuries and have been active for more than 50 years in building institutions such as the GATT and WTO to help achieve their goal, whereas widespread concerns about the environment are relatively new and supporters of environmental protection entered only recently as significant players in international policy arenas.

Understandably, supporters of liberal trade and the GATT/WTO resent the encroachment of these 'new kids on the block' onto what they perceive as their hard-won territory, especially when they genuinely believe that reducing trade barriers is likely to be environmentally friendly and consistent with sustainable development in the long run in the sense that it allows the world to use its resources more efficiently.[10] Equally, advocates for greater environmental protection are frustrated that international agreements as important as those resulting from the GATT's recent Uruguay Round can be implemented without being subject to environmental impact assessments or environmental safeguards.

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[10] Liberal traders should acknowledge, however, that opening up to trade has complex general equilibrium effects that are very difficult to determine a priori (Ulph 1994, Copland and Taylor 1995). Fro example, they can lead to over-exploitation of common-property resources (e.g., via felling of tropical forests) where there are inadequate property rights, environmental charges, and/or policing, in which case there may be a second-best case for restricting trade until those problems are resolved (Chichilnisky 1994).

Clearly there is scope for greater understanding and altered strategies on both sides. More than that, there is the distinct possibility that, by working together, both groups' objectives will be further enhanced -- a 'win-win' outcome. In some people's view it may ultimately require a world environment organization (WEO) which could set rules, incorporate existing international environmental agreements and negotiate new ones, monitor compliance, and settle disputes over environmental policies -- in the same way that GATT has presided over trade rules and policies for the past five decades (Esty 1994). The advantage for liberal traders of a WEO, Esty argues, is that such an organization could redirect environmentalists' attention away from the use of trade measures and towards ensuring the implementation of more appropriate policy instruments for achieving environmental objectives, allowing both sets of policies to more-effectively contribute, in mutually supportive ways, to the common goals of sustainable development and improvement in the quality of life. However, a WEO is unlikely to be created in the near future, partly because governments in many countries are under pressure to down-size. In any case, a WEO, like the ILO, the ISO, WIPO and other standards-setting international organizations, would lack 'teeth' to ensure enforcement of agreements. As well, the issue of whether the WTO or the WEO would have precedence would need to be resolved. It is noteworthy that the side agreement to the NAFTA gives a surprising (to me, given that it is a trade agreement) degree of precedence to environmental concerns relative to trade concerns. What would be more appropriate is a recognition that where the two are in conflict, achieving the optimal welfare-maximizing outcome requires both to compromise somewhat (Corden 1995).

Thus the trade policy community needs to be involved in the negotiating of multilateral environmental agreements that are likely to include trade provisions, and to develop criteria by which WTO members could assess in advance the extent to which trade restrictions within such agreements are acceptable. Some of the relevant criteria were enunciated at UNCED. It is important, first, to ensure that trade provisions are strictly necessary, in the sense that there are no alternative, more effective instruments than trade restrictions, and they need to be effective in achieving the environmental objectives involved. Where trade instruments *are* required in the absence of less costly policy measures, they should be used only in proportion to the size of the associated environmental problem and should be the least trade restrictive measure available. The measures ought to be transparent and not be protectionist in impact, and where possible be consistent with both the GATT principles of non-discrimination (most-favoured-nation and national treatment) and the key environmental principles such as the polluter pays and the precautionary principles.

What could and should developing countries do about these developments?

The Uruguay Round agreements in themselves are good news for developing countries. However, the demands for greater harmonization of domestic policies for competitiveness reasons, coupled with the greening of world politics and the growing interest in worker and other human rights beyond national borders, are likely to put the WTO and trade policy under pressure to perform tasks for which they were not designed and are not well suited -- and at a time when the WTO needs first to consolidate its role in

the world and ensure the implementation of the Uruguay Round before moving into these more thorny issues that are only peripherally connected with trade.[11]

The pressure on the WTO to become more entwined with environmental (and labour standards) issues is and should be of considerable concern to developing countries. The reason is not so much that the imposition of higher standards themselves would be costly to them. In fact the competitiveness of some industries in middle-income, mid-standard countries may well be enhanced if low-income, low-standard countries were required to raise their standards more than them to reach minimum acceptable levels. Even the negative direct effect for low-income economies of having to raise their standards could be offset somewhat by a terms of trade improvement if many countries were to raise their standards simultaneously. Nonetheless, people in developing countries are suspicious of the motives of high-income countries, and object to what they perceive as social imperialism and a denial of their national sovereignty. While they are not being targeted *per se*, the fact is that such standards tend to be applied less in developing countries because they are poorer. That, together with the fact that their comparative advantages often are in natural resource- and pollution-intensive industries, means those countries are vulnerable either to being pressured to enforce stricter standards and/or to facing less market access for their exports to stricter-standard countries. Furthermore, should the use of trade policy to try to harmonize standards upwards lead to trade retaliation and counter-retaliation, the end result could be a weakening of the multilateral trading system on which developing countries are coming to depend increasingly as they liberalize their economies. One possible consequence is that developing countries could seek refuge from anti- (eco or social) dumping duties via association with or accession to the EU or NAFTA, where they might expect to receive greater compensation for raising their social standards. In such cases, any net gain they might enjoy could well be at the expense of excluded developing countries.

However, since the entwining of environmental issues with trade policy is more likely to tighten than to disentangle in the forseeable future, the question arises as to how developing countries ought to respond.

One response is to disseminate more widely the sound arguments for not using trade-restrictive measures to achieve environmental objectives and hence for not amending Article XX of the GATT to allow trade discrimination for environmental purposes. Those arguments include the following: that differences in standards are a legitimate source of comparative advantage in so far as they reflect differences in resource endowments and societies' preferences and ability to afford the good things in life; that standards rise with per capita income and liberal trade promotes income growth; that theory (Bhagwati and Srinivasan 1996) and empirical evidence (Tobey 1990, Low 1992, Jaffe et al. 1995, Levinson 1996) provide little reason to expect that differences in standards contribute significantly to differences in costs of production and hence to trade and investment patterns, nor that downward harmonization of standards (a "race to the bottom") is occurring; that if freer trade were to worsen welfare because of inappropriate

[11] The suggestion has been made, for example, that the WTO become active in monitoring and enforcing agreed minimum social standards. That presumably would involve environmental and labour standards being reviewed as part of the WTO's Trade Policy Review Mechanism. Since that mechanism is already stretched to its limit in covering even the major trade policies of contracting parties, such an addition to its work load would require a substantial boost to its resources -- not to mention the extra burden on those employed in national capitals when the reviews are under way. An even greater potential increase in workload would result for the WTO's dispute settlement mechanism.

environmental policies in some countries, non-trade measures such as labelling ('dolphin-friendly tuna') would be more cost-effective than trade policies in that they allow consumers to exercise their preferences through the market; that advanced economies had lower standards at earlier stages of their development; that since developing countries have contributed a disproportionately small amount per capita to global environmental problems such as greenhouse, they should be compensated accordingly for contributing to their solutions rather than have that contribution demanded of them under threats of trade sanctions; and that the GATT rules-based multilateral trading system is threatened by the risk of environmental groups being captured by traditional protectionist groups in high-standard countries, and by the risk of resulting trade restrictions and pressure to involuntarily raise standards being used by protectionist groups in lower-standard countries to argue against their countries' export-oriented development strategy.

More empirical analyses to support some of these arguments are sorely needed. The experiences of the Uruguay Round, and of the Inter-governmental Panel on Climate Change, made clear that empirical studies are far more powerful than abstract arguments in focusing attention on the need for policy reform and the shape it should take. Those quantitative exercises have provided the world with a suite of multi-sector, multi-country models that are capable of being modified to estimate also the linkages between trade, resource depletion, and environmental degradation. A beginning has been made in that direction,[12] but there is great scope for further, high-payoff research in this area. Such forward-looking modelling requires the inclusion of endogenous behavioural relationships not only for private households and firms but also for governments, so as to capture not just the demographic transition but also the transitions in both trade and envonmental policies that typically accompany per capita income growth. Now is not too early to begin if that research is to influence the next round of multilateral trade negotiations, because they are scheduled to get under way before the end of this decade.

Helpful though such argumentation and analyses would be, more dialogue and compromise between high-income and developing countries is likely to be needed. One suggestion is the following. If developing countries were to commit themselves to enforcing minimum standards and to raising those standards over time according to a specified schedule, in return for gradual improvements in access to OECD markets, vocal interest groups in high-income countries would be less able to deny that improvements in environmental standards are positively related to income and trade growth. That would be using trade policy as a carrot rather than a stick. Likewise, if developing countries were seen to be enforcing reasonable standards especially effectively on their foreign investors, concerns about capital outflows to 'pollution havens' and the consequent loss of jobs in high-standard countries would be less justifiable. Alternatively or additionally, developing countries could transfer the onus back to high-standard countries to insist their firms accede to the same high standards when they invest in developing countries as in more-advanced economies. And anxiety over deforestation could be reduced if developing countries were able to demonstrate they can police restrictions on felling and are prepared to do so in return for adequate compensation in the form of greater access to rich-country markets and/or aid (e.g., via the Global Environment Facility administered by the World Bank).

A more controversial suggestion has been made by Rodrik (1994). He believes a case can be made for high-standard countries to take action against a trading partner if

[12] See the review in Anderson and Strutt (1995).

trade with that country violates a *widely held* social standard (i.e., one that is accepted by export and consumer interests in those countries in addition to the aggrieved import-competing producers and environmental or labour groups). The case rests on the point that an erosion of confidence in the 'fairness' of the trading system may ultimately be more costly to the world economy than the action against the offending trading partner. He suggests that the Safeguards Agreement of the Uruguay Round could be broadened to allow a 'Social Safeguards' clause whereby in such cases a country could restrict the offending imports and compensate the trading partner. Rodrik recognises that this could do more harm than good (not least because it would formalize a link between trade policy and social standards). Even so, he argues that its merits need to be weighed against the other options available to developing countries to minimize the damage from the encroachment of social issues into the trade policy domain. However, the sobering history of abuse of the GATT's other safeguards clauses (Finger 1995) leaves little room for enthusiasm for this proposal to amend the Uruguay Round's Agreement on Subsidies and Countervailing Measures.

Finally, what principles ought to govern the design of trade policies and trade-related environmental policies to ensure equitable and sustainable development? Several have been mentioned above in passing. Even if developing countries were simply to discuss a list of such principles with higher-standard countries, the resulting dialogue may itself be productive in diffusing some of the concerns expressed by environmental groups. APEC, with its diffuse but relatively small membership, provides an obvious forum for such discussion before the much larger WTO membership debates the issues. In the same spirit, APEC might also begin to monitor trade-related environmental measures as part of its overall compilation of trade impediments in the Asia-Pacific. As well, it might actively seek, as a priority in its trade facilitation and liberalization initiatives launched at Bogor in November 1994, the removal of trade policies that incidentally harm the environment -- again, providing a regional 'win-win' example for what might eventually be achievable globally through the WTO.

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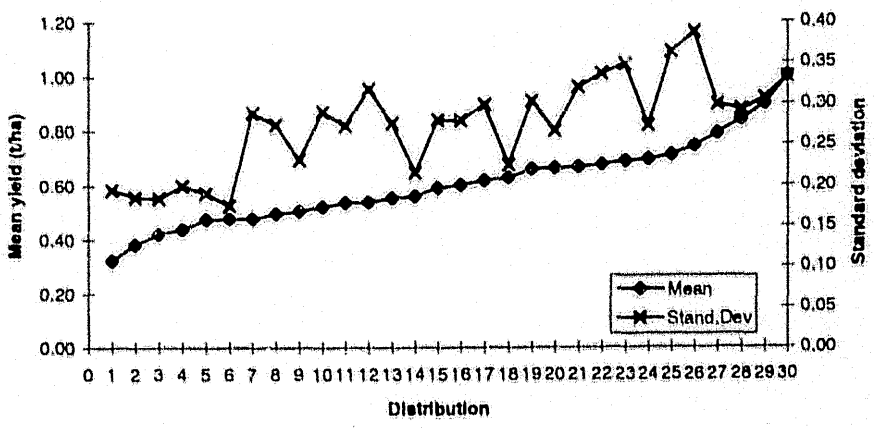
Figure 1. Mean and standard deviation of the true distributions