

Trade and the environment: The risks and opportunities for New Zealand associated with the relationship between the WTO and multilateral environmental agreements

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Report produced for the New Zealand Ministry for the Environment



Executive summary

Trade and environment issues are economically important, emotionally laden, and complex in the face of scientific and legal uncertainties. These issues are of particular interest to New Zealand because of our high level of environmental concern, our unique geographical location, and our high level of economic dependence on agricultural and other resource-based production such as forestry, fisheries and tourism. New Zealand has strong economic and environmental interests in having the international community successfully address several international environmental issues including those relating to bio-safety and genetic modification (GM), ozone depletion, biodiversity, ocean mammals, endangered species, sustainable forestry and fishing (especially drift net fishing), and climate change.

At the same time, New Zealand has strong interests in international trade and especially free trade in agricultural products. These economic concerns can be complementary to our environmental interests where freer trade will lead to improved environmental conditions elsewhere or where trade restrictions to protect the environment confer economic advantage on us. In other cases our different interests will conflict. Trade restrictions imposed for seemingly legitimate international environmental purposes might be used to camouflage or provide precedents for protectionist trade barriers used against New Zealand products. Alternatively we might want to limit imports but find ourselves constrained by the rules of international agreements. When negotiating, we need to be clear where our interests lie, and the nature of the potential tradeoffs between our different interests. In addition, as always, we need to negotiate within the parameters of international law and taking into account the interests and responses of other countries.

International law on trade and environment issues is continuing to develop as the international community faces new international environmental challenges and increased environmental concern. In some situations free trade and the environment are complementary, for example where increased affluence resulting from trade leads to stricter environmental regulation. In other cases trade restrictions can be used for environmental purposes to directly pursue environmental goals, to encourage participation in multilateral environmental agreements and to encourage compliance within multilateral environmental agreements. In an ideal world, trade restrictions would be allowed where the environmental benefits exceeded the costs to trade and the net benefits are equitably shared. In reality, scientific uncertainty and unobservable preferences often make protectionist interests indistinguishable from environmental interests. This uncertainty and the uneven distribution of relative benefits are the primary causes of trade and environment disputes under the World Trade Organisation (WTO).

The WTO currently allows trade to be restricted for environmental purposes in several circumstances: where trade is the primary cause of environmental damage, among members of a Multilateral Environmental Agreement (MEA) that mandates trade restrictions, in support of an MEA, for health and safety where domestic regulation is same as restrictions on imports (i.e. non-discriminatory) and with acceptable risk assessment procedures.

With regard to genetic modification (GM), New Zealand's desire not to encourage trade restrictions in general (especially those with a highly uncertain scientific basis) conflicts with our concerns about protecting biodiversity and potential trade benefits from

maintaining our own GM-free status while others place restrictions on GM imports. Currently trade restrictions on living modified organisms are legal as long as they are supported by risk assessments. These rules have not yet been tested in an international dispute so the exact interpretation is still unclear. The trade offs involved in our trade negotiating position directly link to New Zealand's internal decision on whether to allow the introduction of GM crops. This report is unable to provide definitive advice on this and does not wish to pre-empt the Royal Commission Report on genetic modification. We have simply tried to clarify the interrelationships between our international and domestic positions. Domestic restrictions on GM use will bias us toward supporting international trade restrictions. Conversely the introduction of GM in New Zealand would bias us toward a free trade position on GM.

The scientific and economic knowledge available to make a reasoned domestic decision are likely to increase with time as a result of international and revealed consumer behaviour. As other countries learn more and make clearer decisions about their interests we can benefit from their scientific research. In addition, our interests do not depend solely on scientific matters but also on the decisions of others regardless of whether those decisions are based on sound science. As others' positions on GM clarify, our optimal response will also clarify.

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1. Introduction

Trade and environment issues are economically important, emotionally laden, and complex because of scientific and legal uncertainties. These issues are of particular interest to New Zealand because of our high level of environmental concern, our unique geographical location, and our high level of economic dependence on agricultural and other resource-based production such as forestry, fisheries and tourism. New Zealand has strong economic and environmental interests in having the international community successfully address several international environmental issues including those relating to biosafety and genetic modification (GM), ozone depletion, biodiversity, ocean mammals, endangered species, sustainable forestry and fishing (especially drift net fishing), and climate change.

Some of these issues can be controlled to a certain extent on our own soil by regulating our own activities (e.g. forestry and fishing) or through border controls or limits on imports (foot and mouth, BSE and GM). However many issues require coordinated, cooperative international responses. We are too small to have significant direct effects on global issues such as biodiversity, ozone depletion or climate change so our major contribution often comes through our involvement in multilateral efforts. Some global environmental issues are already addressed by Multilateral Environmental Agreements (MEAs) and others are under negotiation.

At the same time, New Zealand has strong interests in international trade and especially trade in agricultural products. These economic concerns can be complementary to our environmental interests where freer trade will lead to improved environmental conditions elsewhere or where trade restrictions to protect the environment confer economic advantage on us. In other cases our different interests will conflict. Trade restrictions imposed for seemingly legitimate international environmental purposes might be used to camouflage or provide precedents for protectionist trade barriers used against New Zealand products. Alternatively we might want to limit imports but find ourselves constrained by the rules of international agreements. When negotiating, we need to be clear where our interests lie, and the nature of the potential tradeoffs between our different interests. In addition, as always, we need to negotiate within the parameters of international law and taking into account the interests and responses of other countries.

This report summarises key issues in the relationship between the WTO and MEAs, describing the key provisions of the General Agreement on Tariffs and Trade (GATT), the Agreement on Sanitary and Phyto-Sanitary Measures (SPS) and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). It discusses the role of trade restrictions for environmental protection and uses case law to assess the conditions under which environment-related trade restrictions are acceptable under the WTO. The report then considers three key issues that contribute to the international tension between trade and the environment and affect the uses of trade sanctions we might choose to support as part of environmental agreements. First, scientific uncertainty makes it impossible to clearly distinguish environmental concern from protectionist pressures. This makes purely objective decisions on tradeoffs between free trade and environment impossible. Second, trade restrictions shift the cost of environmental protection in ways that may be inequitable. Finally, trade restrictions are not necessarily the only way to achieve the goal of strong environmental agreements.

Section five discusses the risks and opportunities from trade and environment issues for a country such as New Zealand with a small, open, geographically-isolated economy with heavy dependence on agriculture and other resource-based industries and a clean, green image. We consider situations where our trade and environmental interests are consonant and where they are in conflict. Finally we discuss issues related to biotechnology and genetic modification in more depth starting with the interactions among the different international agreements, particularly the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), and the Cartagena Protocol on Biosafety to the Convention on Biological Diversity. Building on earlier New Zealand work on Genetic Modification (e.g. IBAC, 1999) we outline issues that are unique to New Zealand and how that puts us in a specific position with regard to negotiations on biosafety.

2. The WTO and Environment-related trade restrictions

2.1 General Agreement on Tariffs and Trade

The World Trade Organization, based on the General Agreement on Tariffs and Trade (GATT) as periodically amended, is designed to disallow restrictions of trade under most circumstances, since the point of creating such a system internationally is to prevent states from taking individually advantageous actions that would lower collective advantages from free trade. States are generally not allowed to impose discriminatory trade restrictions; they are not allowed to treat goods from one country differently than those from another within the regime, and they are not allowed to impose restrictions on imports of goods that are not restricted domestically. In addition, to the extent that states do impose restrictions on free trade, these should be in the form of tariffs rather than non-tariff barriers such as quotas or prohibitions, and they should be applied in a non-discriminatory manner.

The agreement does allow trade restrictions under several circumstances, some of which relate to environmental protection. States are allowed to impose domestic regulations on imported products for such things as health and safety standards, provided that these restrictions are applied universally. Any product standards applied to national products can be applied to the same goods imported from foreign countries. If a state decides to ban a product outright because of the environmental harm it causes, that state can ban imports of that product as well. If a state requires labels to indicate contents of national goods, it can require them for identical imported goods.

The major environmental exceptions to general GATT rules are found in Article XX of the agreement, which sets out the conditions under which state may take actions that would otherwise violate the rules of free trade. In particular, it allows for non-discriminatory rules that are “necessary to protect human, animal, or plant life or health” (GATT 1947, Article XX, section b), and those that are “related to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption” (GATT 1947, Article XX, section g).

Two additional articles of the GATT have implications for the relationship between trade and environmental protection. Article XVI addresses subsidies and indicates that states are to avoid granting any form of income or price support “which operates directly or indirectly to increase exports of any product from . . . its territory.” The agreement recognizes that granting such subsidies can harm other contracting parties and “may hinder

the achievement of the objectives of this Agreement” (GATT 1947, Article XVI, section a). In particular, parties are required to cease granting such subsidies, directly or indirectly, on products other than primary products, and to apply subsidies to primary products only where doing so does not result in giving that party a “more than equitable share of world export trade in that product” (GATT 1947, Article XVI, section b, part 3). Subsidies are indirectly considered as things that result “in the sale of such a product for export at a price lower than the comparable price charged for the like product to buyers in the domestic market” (GATT 1947, Article XVI, section b, part 4). While this article was clearly not written with environmental protection measures in mind, a case can be made that environmental standards lower than those in other countries provides such a subsidy by making the production process less expensive.

Article VI disallows dumping, which is defined as the process “by which products of one country are introduced into the commerce of another country at less than the normal value of the products.” This article allows countervailing duties to be assessed on goods that are improperly subsidized, or dumped. This type of duty is defined as a “special duty levied for the purpose of offsetting any bounty or subsidy bestowed, directly, or indirectly, upon the manufacture, production or export of any merchandise” (GATT 1947, Article VI, section 3). States are allowed to assess a duty on these goods that is equal to the margin of dumping, the amount by which its price is unfairly lowered. Similarly, the extent to which the environmental costs of the production process are not included in the cost of the good could potentially -- though not so far under the WTO -- lead to claims of dumping, and the call for the imposition of countervailing duties.

It should also be noted that the GATT prohibits restriction of exports in most of the same ways restrictions of imports other than those governed by the agreement are disallowed (GATT 1947, Article XI). While the issue of a state banning its own exports of a product for environmental reasons has not been brought before the GATT/WTO dispute resolution process, it would be possible for a state to impose such export restrictions for either environmental or protectionist reasons.¹ As with most import restrictions, they would violate the letter of GATT regulations unless carefully crafted and it remains to be seen how the WTO would respond to such a measure if one were challenged.

2.2 Agreement on Sanitary and Phyto-Sanitary Measures (SPS)

The SPS agreement was adopted in 1994 as an annex to the WTO. It addresses regulations on animal and plant health as well as food safety that might affect international trade. It essentially builds on the regulatory exceptions of Article XX of the GATT, requiring that when states take SPS measures they should only be done when “necessary to protect human, animal or plant life” and “based on scientific principles” (SPS 1994, Article 2, section 2). Most importantly, such measures may not “arbitrarily or unjustifiably discriminate” between member states, and states may not apply different regulations domestically and internationally (SPS 1994, Article 2, section 3). The agreement also aims to harmonize such standards internationally and thus suggests that states base SPS regulations on international guidelines where possible. It nevertheless allows for states to

¹ An example might be a ban on the export of unprocessed logs. This would force companies (including multinationals) to process the timber within the country, potentially creating local jobs at the expense of less efficient processing.

undertake regulatory measures that are stricter than international standards as long as they are otherwise consistent with the agreement.

It is in the area of genetically modified organisms (GMOs) that the SPS measures have been the most controversial (Jennedy 2000, pages 81-104). While states may adopt stricter domestic standards than required internationally, they must comply with the requirement that they use scientific decision making processes and follow a risk assessment process described in Article 5. This process allows for the use of the precautionary principle (in other words, scientific certainty that something is harmful is not required before restricting it provisionally), and does not -- as any risk assessment process would likely be unable to - clearly identify the process that must be followed in determining whether a SPS measure is acceptable. The agreement directs members to "take into account" (SPS 1994, Article 5) a wide variety of scientific aspects, but cannot do more than that to guarantee an outcome, and decisions reached by states are likely to vary widely in ways that may be challenged.

2.3 Agreement on trade-related aspects of intellectual property rights (TRIPS)

The TRIPS agreement was adopted in 1994 at the creation of the WTO, and incorporates provisions from other international agreements on international property law. All countries bound by the WTO are subject to regulation under TRIPS, though a graduated time frame applies: developed countries were bound beginning in 1995, developing countries in 2000, and least developed countries in 2005. It is likely that many developing countries have not yet fully complied with the provisions of the agreement.

The general obligations under the agreement are that states provide a specific set of intellectual property rights protections through domestic laws, effectively enforce those laws, and submit any disputes to the WTO dispute settlement process. As with other GATT provisions, TRIPS requires national treatment (the idea that nationals of other member states be treated no less favourably than nationals of the regulating state) and Most Favoured Nation treatment (TRIPS 1994, Part I, Articles 3- 4).

Intellectual property rights cover issues from artistic works to industrial design; for the purposes of the discussion of environmental regulations the main issue of concern is biotechnology, which can be subject to patent and thus protected under TRIPS. Nevertheless, TRIPS provisions relating to biotechnology are vague. The agreement does not require (nor prohibit) intellectual property protection for genetically modified organisms, but would require patents granted by one country to be universally recognized.

3. The use and acceptability of trade restrictions in multilateral environmental agreements

There are three major aspects of the relationship between environmental trade measures and the World Trade Organization. The first is the role the unilateral trade restrictions for environmental goals, taken either apart from or in support of multilateral environmental agreements, have played in indicating the WTO's response to environmental trade measures. The second and third are the roles that trade restrictions play within MEAs, either as environmental regulations themselves, or as mechanisms to persuade states to join MEAs that require near universal participation for success. Related issues worth examining are trade restrictions authorized by MEAs to increase compliance, and trade

implications from MEAs that do not themselves restrict trade but that may influence the competitiveness of state industries internationally.

3.1 Unilateral environmental trade restrictions

While a discussion of the role of unilateral trade restrictions for environmental protection may seem unnecessary in a consideration of the relationship between the WTO and MEAs, there are several relevant contributions such a discussion has to offer. First, unilateral trade restrictions may be taken by states in support of a multilateral agreement or a specific environmental priority outlined in a multilateral agreement. Second, such trade restrictions may be used in the process of attempting to create a multilateral environmental agreement. Most importantly, GATT/WTO rulings in issues of unilateral trade restrictions for environmental goals give the best insight into the organization's approaches to addressing the relationship between trade restrictions and environmental protection, and in the absence of any explicit challenges in the WTO to trade provisions found in MEAs, the organization's responses to unilateral trade restrictions are illuminating.

The GATT/WTO has never upheld a unilaterally imposed trade restriction that has been challenged before its dispute resolution procedure. In some cases these restrictions, while potentially having some beneficial environmental effect, were clearly designed as protectionist measures. A clear example is the Ontario (Canada) provision that required that beer (domestic or imported) be sold in bottles; with the argument made that bottles were more environmentally friendly than cans. The GATT dispute settlement panel pointed out, however, that Ontario (with a beer bottling industry) had not taken moves to restrict other domestic uses of cans and thus the environmental considerations were almost certainly not the primary factor behind the trade restriction. One lesson that emerges when examining the domestic sources of environmental trade measures is that even the most environmental of regulations have industry support for protectionist reasons; it will rarely be possible to completely separate the two motivations for imposing trade restrictions (DeSombre, 2000a).

In its rulings against unilateral trade restrictions for environmental goals, the WTO has indicated that such measures might be acceptable if taken multilaterally instead of unilaterally. Moreover, it has even found the general principle (if not the actual implementation) of unilateral sanctions to be acceptable if taken in support of a multilaterally accepted goal, such as the protection of endangered species. The process has, at the same time, upheld the requirement that such trade restrictions be scientifically based. This can be seen in the evolution of the trade disputes involving United States restrictions on trade for species protection adjudicated by the GATT/WTO dispute resolution process. Four separate dispute resolution panels decided against U.S. trade restrictions designed to protect dolphins and sea turtles. Despite its rejection of the sanctions as applied, the first GATT panel finding on the tuna/dolphin case in 1991 explicitly allowed that the protection of dolphins was reasonable grounds for regulations that impeded the free flow of international trade. The panel left unclear, however, the acceptability of the use of trade restrictions to affect environmental policy in other countries (GATT, 1991). The second panel finding, in 1994, reiterated the acceptance of the protection of dolphins as legitimate grounds for regulations that restricted trade, even though the species of dolphin in question was not endangered (GATT, 1994). It also more clearly accepted the principle that interfering with trade in an attempt to change environmental regulation in other countries can be grounds for exception to the rules. The

WTO appellate decision in the shrimp/turtle case in 1998 went considerably farther. It stressed that the international trade regime was bound by the principle of sustainable development. It encouraged the solicitation of scientific opinion in resolving trade disputes relating to environmental regulation. And it established the principle that the existence of a multilateral environmental agreement protecting an environmental good *prima facie* establishes that it is a legitimate cause for exceptions to GATT rules, noting in this instance that sea turtles were designated as endangered under the Convention on International Trade in Endangered Species (CITES) (WTO, 1998). The U.S. trade restrictions were all found to contravene international trade law, but for reasons having to do with how they were implemented rather than with the acceptability of trade restrictions for environmental goals more broadly. The most recent instalment in this dispute reaffirms the WTO support for MEAs but its willingness to allow for unilateral sanctions as a tool in creating them. The Dispute Settlement Panel just issued a ruling in response to Malaysia's complaint that the U.S. has not sufficiently changed its policy to comply with the 1998 ruling against it. While the panel did find some problems with U.S. policies, it ultimately ruled against Malaysia's complaint, allowing the United States to continue to restrict imports of shrimp caught in ways that harm sea turtles, as long as they are accompanied by "ongoing serious good faith efforts to reach a multilateral agreement" (WTO, 2001).

Despite the finding that all these measures contravened international trade law, the rulings were based on narrow interpretations of regulations imposed in a discriminatory manner, rather than a blanket disavowal of the possible acceptability of trade restrictions for environmental purposes. Overall, the dispute resolution system of the international trade regime has accepted the idea that environmental protection was appropriate grounds for exceptions to GATT rules, and has been growing consistently more liberal in interpreting this principle.

The focus on science has been reiterated in additional dispute resolution panels; the WTO has made it clear that it is unwilling to blindly accept unilateral state determinations of environmental and safety standards, particularly as pertains to the SPS agreement. One important case involved United States allegations that the European Union's ban on meat raised with growth hormones was a trade barrier not acceptable under the SPS agreement. The WTO dispute settlement panel agreed (both in initial and appellate decisions), primarily based on its conclusion that the European Union had not followed acceptable risk assessment procedures (WTO 1997, page 78). While there is widespread acknowledgement that the initial EU regulation was likely implemented for primarily protectionist reasons, the outcome of the dispute settlement process has caused fear that the SPS process will not be interpreted in a way that allows for adequate national decision making on issues of scientific uncertainty and risk management.

3.2 Trade restrictions in multilateral environmental agreements

Increasingly Multilateral Environmental Agreements are making use of trade restrictions within the agreements themselves. These measures fall generally into two categories: agreements that restrict trade to fulfil their environmental purpose, and those designed to entice states into agreements by withholding trade in some good from states that are not members. Although some measures fill both functions simultaneously, they are important to distinguish because these different roles have implications for the potential acceptability of such measures by the WTO or broader international law. In addition, there are some MEAs that may have implications for trade without specifically using trade measures as

part of their regulatory process, and MEAs that authorize – though rarely require – member states to use trade restrictions to help enforce the provisions of the agreements.

Another important distinction is the difference between threatening and imposing trade restrictions. Legally, economic restrictions are considered to violate trade law only if they are actually imposed; states otherwise have not been subject to any unfair trading practice. This distinction means that threatened trade restrictions that cause states to change behaviour are not considered illegal; it is only those threats that fail to effect change and are thus imposed that may run afoul of WTO rules (Desombre 1999, page 53).

It is important to note that the WTO has not been asked to rule on the acceptability of the growing numbers of trade restrictions contained in multilateral environmental agreements, themselves. This alone is indicative of a general belief that the organization is not prepared to rule against such measures. The role of trade restrictions in existing MEAs has been discussed in general in the WTO's Committee on Trade and Environment, but without questioning the legitimacy of existing MEAs (WTO 1996, paragraph 52).

3.2.1 Trade restrictions for environmental goals

MEAs frequently restrict trade in a particular substance or good as a central function of protecting the environment. This approach is followed generally when it is international trade of a substance that makes it particularly problematic environmentally. Hazardous waste, for instance, may prove more dangerous in transit because of the opportunities for accidents or because it may be subject to lower regulatory control in the place to which it is sent than in its state of origin. Many species are endangered primarily because their parts are valued on international markets rather than domestically, and thus restricting trade may be central to mitigating the environmental problem. Moreover, states may be more willing to regulate environmental issues through restricting trade than by domestic regulations, because doing so impinges less on sovereignty than do other forms of regulation, or even stands to strengthen sovereignty, by helping states keep things from arriving over their borders without their consent.

The major MEAs that use trade restrictions to achieve their environmental goals are the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (1973), the Basel Convention on the Transboundary Movement of Hazardous Wastes and Their Disposal (1989), the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998), and the Cartagena Biosafety Protocol to the Convention on Biological Diversity (2000).

CITES attempts to protect endangered species by regulating trade. By vote of the member states, species are placed on appendices to the treaty that indicate the level of protection they receive. Species listed on Appendix I are the most protected; trade in these species or parts thereof is not allowed except in unusual circumstances set out in Article III, to make sure that trade of a particular specimen will not harm the species as a whole. Species listed on Appendix II are those that might become endangered unless protected; member states may trade in these species only when authorized by the designated scientific authority of the state and with proper export and import permits. Although CITES is the species protection treaty that uses trade measures most centrally, a number of other international species protection agreements, including the International Convention for the Protection of Birds (1950), the Convention on the Conservation of North Pacific Fur Seals (1957), the

ASEAN Agreement on the Conservation of Nature and Natural Resources (1985) and many others, also include restrictions on trade in protected species.

The Basel Convention creates a prior informed consent (PIC) procedure by which states must be notified and given time to respond (and decline) when offered a shipment of hazardous waste; states may also refuse altogether to import hazardous waste. The agreement overall attempts to prevent the export of waste to a state that will not be able to dispose of it in an environmentally sound way. The Rotterdam Convention, which has not yet entered into force, uses a similar but strengthened prior informed consent procedure to address trade in chemicals that states have listed under the convention.

The Cartagena Biosafety Protocol to the United Nations Convention on Biological Diversity, also not yet in force, is the newest and most contentious of the trade-based environmental regulations. The Protocol concerns trade in what it calls Living Modified Organisms (LMOs), another phrase for GMOs or biotechnology.² The main process by which trade in these organisms is regulated is through a PIC-like procedure termed Advanced Informed Agreement (AIA). Under this process, countries that wish to export LMOs must inform and receive consent from the importing country before such an activity can take place (Biosafety Protocol 2000, Articles 7-9). Additional obligations require all states to notify each other in the case of unintentional transboundary release of LMOs (Biosafety Protocol 2000, Article 17) and take responsibility for the removal of any LMOs illegally transferred (Biosafety Protocol 2000, Article 25). Most likely to be of concern, and in likely reaction to difficulties discussed below that have arisen with the interpretation of the risk assessment provisions of the Agreement on Sanitary and Phyto-sanitary Measures, is how the protocol approaches the idea of the precautionary principle. The agreement spells out the ability of states to restrict imports of LMOs based on risk assessment, “carried out in a scientifically sound manner” (Biosafety Protocol 2000, Article 15, section 1). In general the process appears to follow the SPS process for risk analysis, while nevertheless not specifying a time within which decisions must be reviewed (Gupta 2000, page 30).

Given the central role of trade restrictions in fulfilling the purposes of the treaties discussed above, the international legality of these measures is important to ascertain. Most general approaches to international law suggest that the provisions of these treaties that restrict trade are indeed legally acceptable. By international law generally, when two international agreements appear to conflict and the states in question are party to both and the legal provisions cannot be interpreted as being consistent, there are two ways to ascertain which one should be upheld. The most used principle, *lex posterior*, states that under these conditions the agreement reached later in time prevails (Hudec 1996, Vol 2, page 121). Since the GATT can be interpreted either as being a 1947 treaty or as one from 1994 (because the original GATT was incorporated into the WTO process along with the SPS and TRIPS agreements), the timing question causes potential complications in interpreting treaties such as the Basel Convention or CITES that were negotiated prior to 1994. Though they were clearly created after the GATT with an intention to restrict trade, and would probably be interpreted as prevailing under this principle in the International Court of Justice, the updating of the GATT into the WTO system in 1994 makes that issue less clear. The trade provisions in the Rotterdam Convention and the Cartagena Biosafety

² See Gupta (2000), p. 25 for a discussion of the importance of the language chosen in the Biosafety Protocol.

Protocol, however, were clearly written after WTO law, and thus if they conflict should be seen as being intended by parties to both to be internationally acceptable.

A second principle used to interpret provisions in multiple treaties that appear to conflict is known as *lex specialis*, or the idea of specificity: that when a general provision (e.g. protecting free trade) conflicts with a more specific one (e.g. prohibiting trade in species listed in Appendix I of CITES or LMOs that did not receive Advanced Informed Agreement), the specific one is seen to prevail, no matter when the two were negotiated (Hudec 1996, page 121). The idea behind this principle is that states are aware when they negotiate a general agreement of specific measures that may contradict it previously negotiated; if they do not include something in the more general provision to explicitly override the earlier specific rule they imply that the later general measure should not override it. Under this principle, all the trade provisions of MEAs specifically intended to bind WTO members should be seen as prevailing in a conflict between these provisions and GATT regulations, no matter when the provisions were negotiated, because they address specific conditions under which trade may be restricted. While this principle is not quite as widely recognized as the “later in time” rule, it should be noted that both can be seen to support most of the major trade restrictive provisions in MEAs that protect the environment primarily through restricting trade.

As with the trade restrictions to promote membership, discussed above, if one or more states in question are not members of the WTO, they are not bound by its obligations in the first place. And generally restrictions on trade undertaken by members of these agreements will not contravene international trade rules so long as they pertain to restrictions on trade among states that are both members of the treaties and members (or not) of whatever applicable trade rules exist internationally.

An additional complication arises, however, with the question of where a specific disagreement is adjudicated. While it is important to note, as suggested above, that the WTO dispute resolution process has been more willing to consider trade restrictions to be legitimate when they address issues pertaining to MEAs, the WTO is under no legal obligation to take the above legal principles into consideration. Its dispute resolution procedure is designed to determine whether parties have contravened GATT law, rather than international law more broadly. Thus a dispute taken to the International Court of Justice might make an entirely different finding (supportive of trade restrictive measures) than one taken to the WTO dispute settlement process. Given that a major part of the WTO agreements is the obligation to submit disputes to the organization’s dispute settlement procedure, it has granted itself a virtual monopoly on hearing such disputes. It remains to be seen how widely this process will take into account other legal principles.

3.2.2 Trade restrictions to encourage membership

The trade restrictions in some MEAs exist to entice states into the agreement, by denying them access to trade in restricted goods if they do not join agreements. The Montreal Protocol on Substances that Deplete the Ozone Layer (1987) is the quintessential agreement of this sort. Article 4 of the Protocol prohibits trade in controlled (ozone depleting) substances between parties and non-parties, as well as trade in products containing controlled substances. The agreement also instructs the Parties to determine the feasibility of banning trade with non-parties in products produced with controlled substances. The latter provision has not been implemented, but the general trade restrictions against non-parties with respect to controlled substances have been upheld.

The one exception is that states that are not members of the treaty but that have fulfilled all the obligations they would have been required to undertake by the treaty are allowed to engage in trade with member states (Brack 1996, page 50). This policy was likely to be highly effective once the major producers of ozone depleting substances were in the agreement; other users would have to join as well (or perform the same obligations required of members) to gain access to the regulated products since, initially at least, even CFCs were not to be phased out completely and continue to be important industrial substances in developing countries. A number of non-member states, such as Malta, Jordan, Poland, and Turkey, applied to be allowed to trade, while meeting the obligations, during the period that they had not ratified the agreement. Some states have cited the trade restrictions as a major reason for joining the agreement. In particular, South Korea did not initially join the Protocol, because it did not believe that it would be adequately compensated for the costs of its phase-out activities. But the threat of trade restrictions, particularly against products (like automobile air conditioners) containing CFCs, ultimately persuaded South Korea to join. Israel was also influenced by trade restrictions in its decision to join (Brack 1997a, page 4).

Other agreements, including those discussed above that regulate environmental behaviour primarily through trade, also include trade provisions designed to encourage membership in the agreement. CITES, for example, prohibits trade in species with non-parties unless accompanied by “comparable documentation that substantially conforms with the requirements of the present Convention” (CITES 1973, Article 10). In other words, those states that do not wish to join the Convention must still uphold its main provisions in order to be able to trade with member states. It is unclear the extent to which CITES trade restrictions with non-parties have been directly responsible for bringing states into the agreement, but, in combination with treaty-authorized sanctions, described below, a number of states have been encouraged to join the agreement through fears they be shut out of the lucrative wildlife trade. The Biosafety protocol is actually quite weak on this kind of obligation, suggesting only that “Transboundary movements of living modified organisms between Parties and non-Parties shall be consistent with the objective of this Protocol” (Biosafety Protocol 2000, Article 24(1)).

The legal acceptability of trade restrictions to encourage membership is much less clear. In these instances, the trade restrictions are specifically aimed at states that are *not* party to the MEA. They therefore cannot be seen to have consented to the trade restrictions to which they may be bound. Under both GATT law and broader international law, GATT rules, if they bind both states, would likely prevail if a challenge were brought to the MEA trade provisions. The question of whether threats of trade restrictions, even if not applied, contravene GATT rules becomes salient in the context of threats of trade restrictions against countries that are not party to an MEA. In at least some of the cases discussed above states decided to join the agreement in order to avoid the trade restrictions, which were thus not applied and more difficult to be legally challenged. It is this kind of obligation that will likely cause the most potential trouble between MEAs and the WTO.

3.2.3 Trade restrictions for non-compliance

A number of treaties either implicitly or explicitly authorise their members to impose trade sanctions to deter violations, whether those be by members or non-members. In some the ability to take “appropriate, legal, administrative and other measures to . . . prevent and punish conduct in contravention of the Convention” (Basel Convention 1989, Article 4).

has been written into the agreement; this authority is often believed to include the right to impose sanctions. The Convention for the Prohibition of Fishing with Long Driftnets in the South Pacific, for instance, states that parties may “prohibit the importation of any fish or fish product, whether processed or not, which was caught using a driftnet” (1989, Article 3, section 2, part c). Related to the earlier discussion of trade restrictions for inducing membership (but different because they are not an inherent part of the treaty itself but rather authorized by the treaty organization) are those treaty organizations that explicitly authorise their members to prohibit trade with non-member states that are hindering the effectiveness of the treaty by their non-participation. Those that authorise them include CITES and the International Convention for the Conservation of Atlantic Tunas; in both of these cases the primary state to threaten or impose sanctions was the United States, though Japan also was involved in the ICCAT sanctions.

In addition to the CITES restrictions on trade with non-member states, the governing organization has the authority to call for sanctions against states that are not upholding its regulations, including non-member states. For instance, in 1987 the Conference of the Parties called on members to ‘use all possible means (including economic, diplomatic and political) to exert pressure on countries continuing to allow illegal trade in ivory, in particular Burundi and the United Arab Emirates (CITES, 1987).’ Burundi joined the agreement in 1988 and the UAE, which was previously a member but withdrew from the treaty in 1987, rejoined in 1990. In 1991 the CITES Standing Committee recommended that members ban the trade of restricted species with Thailand because it was not preventing trade in protected species (Charnovitz 1993, page 27). Although Thailand signed the Convention in 1983, it had not passed legislation to implement it (Abramson 1991, page A9). A number of CITES member states refused to accept imports of Thai wildlife, most importantly orchids. Shortly after sanctions were imposed, Thailand passed implementing legislation (French 1995, page 23; Stier 1991, page 6A); sanctions were lifted a year later. The CITES standing committee warned in 1993 that South Korea, China, Taiwan, and Yemen, the latter two of which are not CITES members, would be subject to sanctions if they did not implement restrictions on trade in endangered species. Officials from Yemen indicated that country’s intention to ban trade in rhino horn, and use substitutes for the making of ceremonial dagger handles (Press 1993, page 12). Since Yemen gave indications that it would fulfil the requirements of membership (despite not signing the treaty), sanctions were not imposed. South Korea also did not receive sanctions, probably for political reasons. CITES recommended sanctions against China and Taiwan (the latter of which is not allowed to join CITES because it is not a member of the United Nations), for general inaction in upholding CITES regulations, particularly those relating to trade in rhinoceros and tiger parts. The United States threatened trade restrictions on both states but imposed them only on Taiwan, on 2 August 1995. Both China and Taiwan agreed to take steps to improve their enforcement of CITES regulations, and the U.S. lifted the sanctions against Taiwan on 30 April 1997 (UPI Wire Report, 1994; United States Federal Register 1997, page 23497).

The International Convention for the Conservation of Atlantic Tunas has also experienced problems with participation, both in terms of convincing member states to uphold the recommendations of its commission and bringing non-member states, fishing in the regulated area, into the agreement. In 1994 the organization, at the prompting of Japan and the United States, adopted the ‘Action Plan to Ensure the Effectiveness of the Conservation Program for the Atlantic Bluefin Tuna.’ Under this plan, the organization first identifies those that have been fishing in the regulated area in a way that ‘diminishes the

effectiveness' of ICCAT regulations, then contacts the non-member states to request that they adhere to ICCAT's regulations. If, within a year of being contacted by ICCAT, the non-party has not taken steps to adhere to the organization's policies, the Commission is to recommend to member states that they prohibit imports of bluefin tuna by the identified state. This plan was first implemented beginning in 1995, when Belize, Honduras, and Panama were identified as non-member states that were fishing in the Mediterranean during a closed season. The Commission requested that these states change their behaviour. When, after a year, these states had not joined the treaty or brought their fishing practices into line with it, the ICCAT Commission requested that members prohibit imports of bluefin tuna from these countries (Carr, 1997). The United States prohibited bluefin tuna imports from Belize and Honduras as of 20 August 1997 and from Panama as of 1 January 1998 (United States Federal Register 1997, pages 44422-3). Japan, which imports at least 60 percent of the world's bluefin tuna catch, also imposed sanctions, lessening its total imports of the fish by 10 percent (AP Worldstream, 1996). Although it is too soon to know the final results of these sanctions, there are preliminary signs that they are having an effect, an indication of the efficacy of such threats. Panama, which initially denied violating international regulations, indicated that it would take greater steps to prevent ships flying its flag from catching tuna in violation of ICCAT policies (Grant, 1996). Belize also said it would attempt to curb acts by its fishers that violate ICCAT rules (Tighe, 1996).

It is worth noting that in all the abovementioned cases of trade restrictions in support of environmental goals there are instances in which such restrictions were unsuccessful -- either for individual countries or to address the environmental issue more broadly. While a discussion of the conditions that lead to effectiveness of environmental trade restrictions is beyond the scope of this paper, it is important to remember, first, that they can be remarkably effective in some instances in changing the behaviour of states' environmental activities, but, second, that their acceptability in international trade law relates not to whether they are successful in achieving their goal, but whether they are imposed or merely threatened.

3.2.4 Trade implications of other agreements

The Kyoto Protocol (2000) to the United Nations Framework Convention on Climate Change is primary among recent MEAs suggested as having trade implications, without directly restricting trade as a part of the agreement. The issues raised by this agreement are likely to arise in others as well. To the extent that they mandate – or result in – domestic requirements that impact the competitiveness of an industry that trades internationally, these types of agreements could have vast, and as yet not fully explored, international trade implications. It is for these types of issues that Articles VI and XVI of the GATT, on dumping and subsidies, may take on new relevance in an environmental context.

Under the Kyoto Protocol, trade in fossil fuels is accounted for by counting emissions only in the country where the fuel is consumed. However CO₂, the primary cause of climate change, is used throughout the economy to varying extents. Climate change is an unusual issue because the environmental damage generally relates to the production process rather than being embodied in the product. Products produced using hydropower are indistinguishable from those produced using coal.

Because the Kyoto Protocol does not impose global restrictions, trade could undermine its environmental effects.³ Emissions controls in the OECD will tend to lower fossil fuel prices outside of the OECD and hence increase fossil fuel use and emissions in unregulated countries. In addition, when some countries control greenhouse gas emissions thus increasing the production costs of their energy-intensive industries, firms in unregulated countries can expand their production in response. Increased production implies increased emissions. If the unregulated countries have ‘dirtier’ technologies the partial agreement could theoretically even increase emissions. Empirical evidence, however, (e.g. Tulpulé et al., 1999) suggests that leakage will be relatively low. Their model suggests small changes in iron and steel output in Annex I countries as a result of leakage of production to developing countries. For example US production is predicted to fall 9.3 percent with leakage and 8.2 percent without. Japanese production is expected to fall 12.5 percent with leakage and 11.6 percent without. These changes have infinitesimal effects on GDP. In the same volume, Bernstein et al. (1999) suggest that leakage could be around 18 percent of Annex I reductions, i.e. for every 100 units reduced in Annex I, non-Annex I countries could increase emissions by 18 units. Some of this leakage would be a result of lower fuel prices. The rest can be attributed to shifts in production of energy-intensive products.

Countries that believe their industry is disadvantaged by leakage or that are concerned about the environmental effects of leakage could impose trade restrictions on products from non-Annex I countries and try to justify them by arguing that the lack of regulation is an unfair export subsidy.

3.3 Summary

3.3.1 WTO-acceptable conditions for trade restrictions

- Where trade is the primary cause of environmental damage
- For health and safety where domestic regulation is same as restrictions on imports (i.e. non-discriminatory)
- With acceptable risk assessment procedures
- To encourage compliance: Among members of MEA that mandates trade restrictions – particularly where the MEA post-dates GATT
- In support of an MEA

3.3.2 Uncertain conditions for trade restrictions

- To encourage participation of non-members
- Prevent leakage of environmental effects to non-members

³ Kerr (2000) discusses these issues in more detail.

- Maintain fair competition within industries that are affected by MEAs.

4. General issues relating to environment and the WTO

Trade restrictions can be an effective way of promoting multilateral and unilateral environmental goals. They can directly avoid environmental damage, can encourage participation in environmental agreements, can help to enforce compliance with agreements and could reduce ‘leakage’ that reduces the effectiveness of countries’ environmental efforts. They can however create some serious trade distortions.

4.1 Scientific uncertainty and protectionist pressures

If this were a perfect world, for every proposed environment-related trade restriction we would calculate the environmental benefits that relate to it and the economic costs from restricted trade and make an appropriate cost-benefit tradeoff. Difficulties with this arise in two ways.⁴

First, often the benefits are highly scientifically uncertain and extremely difficult to measure. Decisions must be made in the face of high levels of uncertainty. This is the basis of the arguments between requiring scientific certainty about damage before restricting trade vs. the precautionary approach. While risk assessment can work well with well-understood processes, it is an inherently subjective process when there is little or no scientific evidence. The latter is often the situation with issues such as the use of hormones in beef production or in relation to GMOs. Where the scientific basis for decision is weak, perceptions of risk become more significant.

The environmental costs are even harder to translate into economic values to make them comparable to the economic costs. In any case, economic costs from trade restrictions are also difficult to estimate and are often felt by non-concentrated groups, which cannot organise to represent their interests.

To make it worse, the costs and even some of the benefits are outside the jurisdiction of the countries proposing the restriction. These may be misrepresented or might only be considered when the restriction is challenged. It is unlikely that all costs and benefits are efficiently considered.

Measurement difficulties make decision making about appropriate trade restrictions difficult. Concentrated interests that lead to systematic but difficult-to-observe bias toward protectionism compound this. Empirical evidence suggests that decisions on which industries to support and protect tend to be based on political economy rather than any objective assessment of potential efficiency gains to the economy (Grossman and Helpman, 1994). This result would probably apply equally to environment-related trade restrictions.

⁴ Kerr, Claridge and Milicich (1998) discuss the difficulties of making decisions at a devolved level about issues that have broader effect. Their focus is on local versus central government but the same issues apply to states vs. the international community.

4.1.1 Precautionary principle

One of the important international efforts to address environmental decision-making under conditions of uncertainty is the precautionary principle, first elaborated in environmental policy in Europe in the 1970s (Foster et al. 2000, page 979). The principle suggests that uncertainty should not prevent action to mitigate environmental problems. The most widely quoted version appears as Principle 15 of the 1992 Rio Declaration on Environment and Development: "Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." As the Rio version suggests, the principle is generally taken to be most applicable to cases where environmental damage, if it occurred, would be impossible or difficult to reverse. In addition, most recent versions of the principle focus to some extent on the cost of the action; not requiring every possible action to be taken, but rather suggesting that scientific uncertainty should not be used as an excuse for not taking any action until the uncertainty has been resolved. Stronger forms of the principle suggest not using any new technology (such as genetically modified organisms) until proven safe. This is a more controversial and less widely accepted formulation of the principle.

This precautionary principle has become enshrined in international environmental law, most prominently as the basis for European environmental law under the Treaty on European Union (Foster et al, 2000). It is included in various forms in a wide variety of international environmental instruments, from the non-legally binding 1984 Declarations of the International Conferences on the Protection of the North Sea (Territo, 2000) to its first treaty appearance in the 1985 Vienna Convention on the Protection of the Ozone Layer,⁵ to the 1992 Transboundary Waters Convention, and the 1992 Framework Convention on Climate Change, among others. Apart from its use, generally in a permissive sense (allowing states to take action despite uncertainty), within treaties or in a variety of non-binding international declarations, the precautionary principle has likely not quite reached the status of customary international law, meaning that it is not believed to be legally binding outside of instances when states have explicitly agreed to it.

It is a principle that is difficult to apply in practice, however. Daniel Bodansky suggests that it is "too vague to serve as a regulatory standard" (Bodansky 1991, pages 4, 5, 43). As it currently stands, the principle is open to interpretation. One study found fourteen different versions of the principle in treaties and multilateral declarations (Vanderzwaag, 1999), suggesting at minimum that there is not an international consensus on what it entails. Bodansky, moreover, suggests the real question left unanswered is "what types of precautionary actions are warranted and at what price?" (Bodansky 1991, pages 4, 5, 43). The principle does not suggest whether actions should be taken under conditions of uncertainty to prevent all possible risk of harm, or simply to decrease the risk, nor does it give a clear indication about how to decide how much uncertainty is enough to prevent action, or how much certainty must exist (and about what) before a new form of technology or practice is used. It is also worth noting the inevitable tradeoffs: in working to mitigate one uncertain risk, such as dangers from genetically modified organisms, we will inevitably take on other uncertain risks, such as potential environmental degradation

⁵ Preamble; cited as the first treaty usage in Sands(1995), p. 209.

from increased land use and use of chemicals and pesticides that might be otherwise avoided. It is for this latter reason that recent statements of the precautionary principle focus on the cost effectiveness of the measures taken.

In an effort to address some of the difficulties with application of the precautionary principle, the European Commission issued a "Communication" on the topic in February 2000, intended to clarify how it intends to apply the principle. This clarification restates the standard conditions under which it should be applied, and suggests that when action is taken under the principle measures should be "proportional" to the level of protection, applied in a way that is "non-discriminatory" and "consistent" with other measures that have been taken, based on cost-benefit analysis, and "capable of assigning responsibility for producing scientific evidence" for a risk assessment that will be more comprehensive. In addition, any actions taken are subject to review (Commission of the European Communities, 2000). While this Communication discusses the principle and its applications in useful ways, it cannot nevertheless address the vagueness inherent in attempting to apply a broad principle to particular situations.

4.2 Fairness of environmental trade sanctions

4.2.1 Where used to encourage participation in MEAs

A good Multilateral Environmental Agreement creates more global benefits than it imposes costs. However the distribution of net benefits across countries is subject to negotiation. At one end, countries can free ride and only receive benefits. This is not fair to those who bear the costs. If the countries that do this are the poorest countries, there is some equity in poorer countries receiving greater net benefits so it may not be a significant problem. As an intermediate case, if the polluter-pays principle is applied to current products or activities that create environmental damage trade sanctions will seem fair because the costs imposed will relate directly to current environmental damage. If a broader historical view is taken however, current polluters may not be representative of those who created the overall problem and the use of trade sanctions to put a heavy burden on current polluters may be unfair. This is a particular issue in climate change and biodiversity protection. At the other end of the equity spectrum, powerful states can force weaker ones to participate in agreements on terms that make their net benefits low or even negative.

If the negotiation process is fair, countries have the chance to come into the agreement on reasonable terms. Those who do not are therefore free riders and the trade sanctions could be justifiable on equity grounds. Negotiation processes are not always fair however and the threat of trade sanctions, which can be imposed most effectively on relatively weak states, may shift bargaining power further away from weak states.

4.2.2 Where used to prevent benefits to non-parties to MEAs

This is a clearer case in terms of equity. While it may be unclear who should bear the costs of international environmental protection it is reasonably clear that no countries should benefit from other countries' efforts to protect the global environment. In many cases however, it can be difficult to distinguish efforts to avoid benefits to non-parties from efforts to encourage participation.

Empirically the benefits to non-parties may not be very great. We discussed the issue of leakage from the climate agreement above. More generally, empirical evidence seems to suggest that production location decisions are mostly driven by other factors such as the quality of the local labour force, infrastructure such as transportation and local amenities and political stability (for a survey see Jaffe et al, 1995) so overall competitiveness impacts from environmental regulation may be relatively small. Studies generally find no identifiable effect from differences in environmental regulation. This suggests that countries that do not participate in environmental agreements will not tend to benefit significantly in terms of industrial growth. This general result may not apply to very specific restrictions however. Some activities are much more mobile than others and could relatively easily be relocated to unregulated countries. Environmental regulation pertaining to ocean vessels is one such instance; ships can and do register in countries that purposefully keep their environmental (and other) standards low to attract foreign ship registration (DeSombre, 2000b). For more general discussions of environmental regulation and competitiveness see Barker and Köhler (1998), Adams (1998), Boltho (1996), Christiansen and Tietenberg (1985).

4.3 Alternatives to use of trade restrictions to support MEAs

When considering whether trade sanctions are an appropriate way to support MEAs we also need to consider the alternatives. The appropriate response can depend on the cause of a country's lack of support. Trade sanctions may be most effective where the problem is lack of concern and countries are able to cooperate. In many cases countries have a lack of capacity for monitoring or enforcing environmental agreements in their own countries. They may not be able to bear the high costs of environmental protection without significant local hardship. In these cases assistance with capacity building, technology transfers, grants or loans with evaluation and conditionality or, in the case of climate change, generous emissions targets that may allow the country to gain economic advantage from participation may be more effective as well as more equitable. It is not always possible to differentiate lack of concern from lack of capacity, however; states choose where to put their scarce resources, and an issue about which they are more concerned is likely to receive a greater degree of attention.

Some alternatives are even available in cases where the problem is lack of concern. A variety of dispute resolution mechanisms are available in different MEAs. Public shaming of non-compliers, which leads to diplomatic embarrassment and could lead to NGO action such as voluntary consumer boycotts, and linking of compliance to other issues of interest to the country (other than trade) can also be effective in certain circumstances.

5. Risk and opportunities for New Zealand from trade and environment issues

New Zealand's interests are threefold. First, we have strong interests in making international agreements work. Second we may be in a good position to benefit from requirements for trade that we meet easily because of the nature of our economy and our geographic location. On the other hand we are a small open economy and extremely interested in free agricultural trade so are concerned about any rules that might hinder our access to markets or create bad precedents for such restrictions.

5.1 New Zealand interests in international agreements

As a natural-resource based economy, New Zealand has a strong interest in international agreements. Climate change, biotechnology, ozone depletion and international fisheries issues all potentially have significant economic consequences for us. New Zealanders often have influence disproportionate to our size on the formation of such international agreements because of our active participation and unusual interests as well as our participation in influential coalitions. While we have a small global influence, we should use that influence carefully.

New Zealand has a strong outward orientation because of our small markets and geographical isolation as well as our cultural history. Our size makes us more dependent on international agreements and linkages with other countries to achieve our international goals. International agreements are not negotiated or maintained in a vacuum. This means that when considering our approach to one international issue we need to bear in mind the relationship with other issues of interest to our allies.

If trade sanctions can effectively support an international agreement that is in our interests we might want to support them. If our allies want to use trade sanctions and want our support we might want to consider if our interests would best be furthered by supporting them; would our loyalty be rewarded with support on other issues?

5.2 New Zealand trade interests

5.2.1 Potential benefits from environment-related trade restrictions

For some products, New Zealand could be in a position to benefit from environment-related trade sanctions. For example we can only win in cases where our best existing production practices already meet requirements. Examples could include where our comparative advantage is in producing pastoral meat products or where the regulations required for a sustainable fish stock or forest are socially beneficial on their own so involve no additional cost.

The value of these benefits depends on the international share of the suppliers that are able to meet the more stringent standards, the share of demanders that require these standards and the resulting price premium for the more environmentally sensitive products.

We might particularly benefit where our major competitors cannot meet those restrictions. For example developing countries often cannot meet timber and fishing sustainability standards. As another example, densely populated countries often need to use more intensive production processes that make meeting produce-related restrictions more difficult. For example, European and US beef is often stall-fed whereas New Zealand beef is pastoral. This has implications for BSE and potential use of genetically modified feedstocks.

In cases where we have to exert effort to meet the requirements, the net benefit depends on the additional production costs to meet the standards and prove that we have done so. In many cases there is a tradeoff between greater market access and possible price premia versus higher production costs. For example, New Zealand's isolation offers us unique advantages in our ability to avoid accidental contamination by such things as genetically

modified crops and foot and mouth disease (though border control measures are costly and still not 100 percent effective). Any gains from being able to sell GM-free crops must however be weighed against the increased production costs from missing out on potential agricultural productivity gains derivable from GM. New Zealand may be able to prove that we meet some environmental standards using existing compliance/assurance systems but in other cases, even where we do meet requirements without effort, creating systems to certify compliance for a variety of different markets with different labelling regulations may be costly.

5.2.2 Potential risks from environment-related trade restrictions

For New Zealand, two risks arise. First, environmental regulations that are appropriate in some areas because of their specific local problems might be inappropriately forced to apply to all countries. This phenomenon can be exacerbated by economic interests in favour of trade restrictions that are obscured by their coalition with environmental interest. Second, environmental trade restrictions could create a general precedent against free trade. This precedent could weaken the general case for free trade and open up the possibility of a wide range of trade restrictions that will be supported by protectionist elements but pushed through with the support of issue groups. Some of these restrictions will be justifiable while others will not. Possible issues include human rights, labour regulation as well as a range of environmental issues.

- Inappropriate local environmental controls imposed

New Zealand may be particularly at risk on this because we have unusual characteristics that mean that our environmental problems and solutions often take a different character than in other countries. In particular our low population density means that many problems such as local and regional air pollution, water pollution and solid waste issues take different forms. Our relatively low incomes by OECD standards make our priorities different. Our heavily resource-based economy means we are not so vulnerable to problems related to manufacturing but do face agriculture-related issues (e.g. importance of Methane as a GHG). Finally, our geographical isolation means that any activity within New Zealand has little impact outside and vice versa with the exception of truly global activities (ozone, climate and biodiversity) and international fishing.

For example, some European countries have strong restrictions related to ‘industrial ecology’. This is the idea that an entire production process should be optimised to minimise use of materials, and maximise recycling so that waste is minimised. This is a particular issue in countries with severe problems relating to waste disposal. Because of the high population densities in Europe this might be a legitimate concern. If, however, these policies are required for products from countries that do not face waste disposal problems they are environmentally not very beneficial but do create economic costs. They may act as a barrier to trade if only a small percentage of production goes to Europe and hence it is too expensive to change the entire production process to meet their stringent standards.

Requirements such as labelling that may cost little to meet if nearly all production serves that market can be very costly if produce is packaged for a wide range of different markets. Domestic labelling regulations can provide advantage for domestic producers.

- General precedent for trade restrictions

Finally, because New Zealand is a small open economy we have strong interests in global free trade. Every exception to free trade reduces the clarity of the principle and creates another wedge that tends to benefit trade controls. The more legitimate restrictions there are, the less transparent restrictions become and the more likely it is that unjustifiable restrictions will be imposed. As an analogy, consider the case for simplicity in the tax code. Every exemption tends to create loopholes that benefit the unscrupulous while many of the people at whom the exemption was targeted do not benefit because of the complexity. Promoting and protecting free trade requires simplicity.

While some environment related trade restrictions are justifiable they need to be discrete and clearly justified. The WTO attempts to do this through distinctions between unilateral and multilateral restrictions and between environmental damage related to the production process as opposed to the product itself.

6. Biotechnology and genetic modification

One major international agreement relates directly to GM and trade. The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is a multilateral agreement aimed at protecting the environment and human health against risks associated with living modified organisms (LMOs – basically the same as GMOs). Two components of the WTO have potential implications for trade in GMOs as well, though far less directly. The Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) is solely concerned with intellectual property rights and has no direct implications for the environment or human health. It could have indirect effects if the protection of property rights also improves our ability to track and control the use of LMOs. The Agreement on Sanitary and Phyto-sanitary Measures (SPS) allows restrictions on trade for food safety and plant and animal health, and could thus be used to restrict trade in GMOs (particularly since states are allowed to take domestic measures more stringent than those taken internationally, provided that they are based on scientific principles and do not unjustifiably discriminate). SPS is consonant with the Cartagena Protocol.

The key components of the Cartagena Protocol relate to countries' abilities to control imports and the basis on which they can reject imports. Advance informed agreement (AIA) is required for most LMOs. This means that countries that want to export LMOs must inform and receive consent from the importing country. Contained use is exempt from this requirement. LMO-pharmaceuticals are also exempt from the conditions of the Protocol if their use is addressed in other agreements (Gupta 2000, page 27). In addition, an important exemption is made for commodities because the costs of tracking genetically modified (GM) and non-GM commodities are currently very high. Commodities such as wheat do not pose an environmental threat if they are consumed but commodities destined for consumption are often indistinguishable from those destined to be seed and it is difficult for countries to control their ultimate use. The procedure here is that every time GM crops are planted, the country that intends to export them must notify the Biosafety Clearing House (set up by the Protocol). Importing countries can then decide whether to import and inform the clearinghouse of their decision. This puts the onus on importers to do risk assessment, though it is on exporters to inform importers if a given commodity shipment contains LMOs. Individual shipments that could contain LMOs must be

accompanied by documentation that states that they may contain LMOs but does not need to specify which LMOs.

The basis on which countries can restrict imports is, as always, problematic. Very little scientific evidence exists on the health or environmental impacts of LMOs. No other products pose analogous environmental or health risks. This makes scientific risk assessment extremely difficult. The Cartagena Protocol fudges the issue by stating that the precautionary principle can be used in making these decisions. Consistent with the WTO agreement on the Application of Sanitary and Phyto-sanitary Measures Article 5.7, a risk assessment must be done. However, there is no time frame for review of precautionary import restrictions imposed on the basis of risk assessments in the Protocol. The requirement for risk assessment means that non-scientific criteria should not explicitly be used in decision making, however it is not clear what criteria should be used. In addition, the preamble contains text about the relationship between the Protocol and the WTO that states that countries negotiating the protocol do not intend to change rights and obligations under other agreements. The effect of this preamble is not clear. Some interpret it as saying that this subordinates trade restrictions under the Protocol to the WTO rules while others disagree.

6.1 Interest and actions of other countries relating to biotechnology and trade

Internationally there is a wide variation in how countries view biotechnology and what their policies on its trade are. The various WTO agreements as well as the Cartagena Biosafety Protocol are intended to create a framework in which these policies operate in a non-conflictual manner, but all these agreements leave room for different approaches.

The United States is the world's largest producer, as well as exporter, of genetically modified crops, followed by Argentina, Brazil, and South Africa. As such, these countries have few policies that restrict trade in GMOs, and have been more influenced by the policies of countries, primarily in Europe, that want to restrict imports of these products (Barboza, 2001).

Europe has generally been suspicious of GMOs, and has been among the most trade restrictive in its policies pertaining to biotechnology. It has had a de facto ban on approving new genetically modified products since April 1998 until a policy could be created. A policy change that would leave the EU less protectionist is currently underway. In particular, in March 2001 the European Parliament and European Council adopted a revised form of Directive 90/220 on the Deliberate Release into the Environment of Genetically Modified Organisms. This revision calls for approvals of new GM releases to be granted on a trial basis, with licenses renewed every ten years. It also requires the monitoring of GM products in commercial use. After a period of field trials and risk assessment, the Commission will approve or reject an application. Pharmaceutical products for human use are excluded, as long as they are confined to the laboratory. In addition, the directive calls for the creation of a public register of sites where GM crops are grown (Official Journal L, 2001). While this legislation has been called “the toughest GMO legislation in the world”, the fact that it puts into place a process for approvals of GM products suggests that new products will probably be approved in time for the next planting season (Mann, 2001a). Shortly after the directive passed, the European Parliament passed a resolution urging member states to be more open to the use of

biotechnology in medicine, and calls for greater financial backing and tax breaks for biotechnology initiatives (Cheallaigh, 2001; Chemical Week, 2001).

The new directive is called “precautionary”, though the exact interpretation of that remains unclear, despite the European Commission “Communication” on the topic discussed above. It will not become binding until EU member states have transposed it into national law, which could take more than a year. In particular, six EU states – France, Italy, Denmark, Greece, Luxembourg, and Austria – remain opposed. These countries would like to see provisions on labelling, traceability, and environmental liability finalized before they authorize new releases of GMOs (Mann, 2001b). The European Commission is in the process of drafting this supplementary legislation and would like to have additional rules on these topics by the end of 2001. One of the major points of contention is what threshold of inclusion of GMOs would require labelling. The current proposal is between 0.3-0.5 percent in seeds, and 1 percent in foods, which is likely to be too hard to meet (Agra Europe, 2001). It thus concerns those who would like to be able to identify their products as GM-free.

Exporters of GM crops still fear that requirements for labelling and tracing will provide major obstacles to trade, since anything that cannot be proven to have a GM content below the threshold will have to carry a label identifying it as containing GM products. It does, however, end the complete moratorium on trade in GM products (Droziak, 2001). It will be difficult to determine whether the new EU rules block trade in a way that is WTO acceptable; the issue will likely be brought before the WTO's dispute settlement process once it has been implemented. It will also be interesting to see what pressures for increased acceptance of GMOs come from EU expansion. Currently Romania and Bulgaria are growing genetically modified crops (Barboza, 2001), and their future inclusion into the EU may help either increase controversy or acceptance of genetically modified crops.

6.2 New Zealand interests related to biotechnology and trade

As a large agricultural producer these issues are clearly important to New Zealand. Through the Cartagena Protocol we have the right to restrict imports of any GM commodities or LMOs for planting as long as we justify these with a scientific assessment of risks to human health and conservation and sustainable use of biodiversity (Biosafety Protocol 2000, Articles 10.6 and 11.8). In particular if we amend the Hazardous Substances and Natural Organisms Act to restrict imports of LMO commodities or place a moratorium on imports on LMO commodities we would not be in conflict with WTO rules as long as the amendment was based on an appropriate risk assessment.⁶ We are unlikely to face any WTO challenge for import restrictions that we choose to impose if we are following the lead of other countries. On health and to a lesser extent environmental contamination assessments we should partly free ride on the assessments of other countries with more resources to devote to these complex scientific questions.

⁶ Note that economic risks, such as those from contamination of GE-free crops by imports, are not explicitly recognised as grounds for a restriction. These might however be construed as risks to biodiversity.

Thus import restrictions are legally possible. We still have to decide when to exercise our right to restrict imports and what position to take internationally in future negotiations. However, what our interests imply for appropriate domestic decisions and our international position on biotechnology is not clear. Our decision on our international position is inseparable from our domestic decisions.

One thing is clear. We would not want to accidentally introduce GM crops so we will want to support strong labelling and monitoring regimes to control the spread of GM. Even if we choose to produce heavily with GM, as long as there is uncertainty about the health implications of GM, we would still want to allow the production and consumption of GM-free products where possible. We would want them to be distinguishable. Thus we should support strong monitoring. Our best stance on import restrictions is less clear.

6.2.1 Domestic decisions

The key underlying questions for New Zealanders are whether we want the options to produce GM and GM-free crops and the options to consume GM and GM-free products.⁷ Some of these options may be mutually exclusive. If we produce some GM crops we may limit our ability to keep others GM-free. This depends on the crop and whether we are concerned with physical contamination (some GM genetic material is transferred from one crop to another, e.g. through pollen carried on the wind) or image contamination (consumers believe that New Zealand products in general are not GM-free because some are not). If some kiwifruit were produced with GM, it would be difficult for others to be exported with a credible claim of GM-free status. For this reason the kiwifruit industry has chosen to remain GM free. The potential for producers to affect each other's GM-free status means that this issue cannot be left purely to the market because one producer can have major impacts on others while having no incentive to take this into account.

Producing GM crops also may limit our ability to consume GM-free products if we are one of the only countries with the ability to stay GM-free.

Consuming GM products may pose some risk to our ability to keep producing GM-free but this risk could be minimised with careful controls. In contrast, continuing to produce or consume GM-free products does not limit our options to introduce GM for other products.

In addition, use of GM now precludes the option of GM free in the future whereas the opposite is not true. The irreversibility and constraining nature of any decision to introduce GM puts the burden of proof on showing the value of introducing GM. The optimal decision under this type of uncertainty is to bias toward delaying introduction of any GM.

If we introduce GM-production into New Zealand the costs are that there may be some environmental risk to biodiversity. There also may be risks to human health because

⁷ These issues are discussed in detail in IBAC (1999). As made clear there, GM-free is a matter of degree not a clearly defined position. We are really choosing a level of GM along a continuum. In the IBAC report they focus on the decision about 'first' introduction and hence have a strong emphasis on the clean-green image of New Zealand which could be disproportionately affected by a small amount of GM. Here we confine ourselves to issues that are relevant for all levels of introduction.

consumer products will tend to become GM as well. Consuming GM products could have health costs if the transformed material proves to be dangerous but could also have health benefits if GM crops have higher nutritional value or lower pesticide residues.

The benefits are that production costs and product variety will increase leading to local consumer benefits and some competitiveness advantages. In addition there may be environmental advantages if GM crops require less pesticide, herbicide or fertilizer. Most of these costs and benefits are currently very difficult to assess.

We also will lose some of the ability to produce GM-free products and benefit from any price premium available for these products. How big might the price premium for GM-free products be? This depends on the demand and supply of GM-free products. High demand and low supply would lead to a high price premium. If internationally consumers show a strong preference for GM-free products and particularly if their governments back this up with import restrictions on GM products the demand would be high. There is essentially no empirical evidence on the likely demand at present.

On the supply side, the key issue is how many countries decide (and are able) to remain GM-free. If New Zealand's isolation really does make us unique, other countries may not be able to avoid producing GM products in cases where physical contamination from GM to non-GM crops is strong. In these cases supply of GM-free products is likely to be low. In the cases where physical contamination is not strong (e.g. livestock), New Zealand could potentially produce some GM product and some non-GM but so could others so supply will be high if demand is high.

For political economy reasons, countries that have GM production are less likely to restrict GM imports so as GM spreads (deliberately or through contamination) domestic demand for restrictions on GM products will tend to fall. Thus if supply is low, demand may also fall.

6.2.2 International decision

Our international decision both affects and is affected by our domestic decision. If we decide to be mostly GM free, we will want to be able to impose import restrictions to protect our GM status. We will also benefit from others' GM import restrictions. Our economic interests will be in favour of import restrictions. This will lead us to join the Europeans in wanting the flexibility to use the precautionary approach to justify sanctions even where risk assessments will be scientifically weak. Our general interests in free trade will as always temper this.

In contrast, if we decide to choose to use significant levels of GM we will be less concerned about import protection (though will still want careful monitoring and border control). We will also want markets to be open to GM products. These interests will reinforce our long-term general interests in promoting free trade. Thus we will oppose trade restrictions for GM and join with countries such as Australia and the US in requiring strict conditions on the level of risk assessment required before trade sanctions can be imposed.

Finally, if we decide that our general interests in free trade are so strong that we need to impose the use of sanctions or put very stringent limits on them, our domestic decisions might be influenced. If there are few trade sanctions on GM, the markets for GM-free

products are likely to be weaker so the economic case for continuing to block the introduction of GM products into New Zealand would be weaker. The case would have to be made based on environmental and health effects alone.

Figure 1 Interrelated decisions on GM and trade

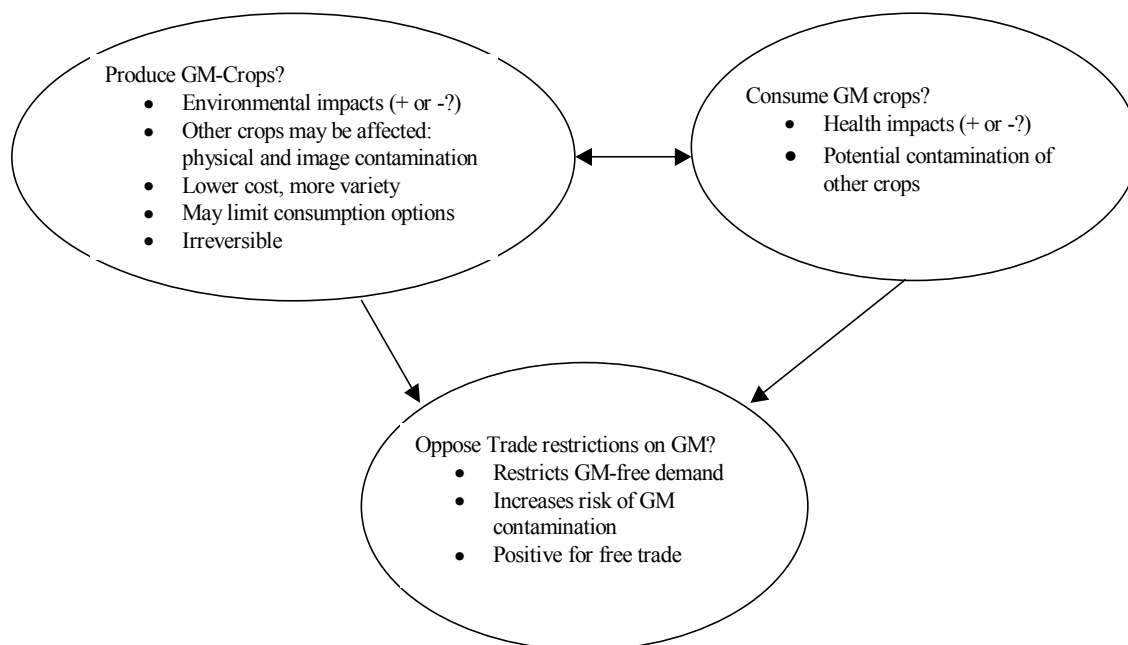


Figure 1 summarises the key effects of the three interlinked decisions. The arrows indicate strong implications of one decision for another. Choosing to produce GM implies that we should oppose trade restrictions and may imply that consumers' ability to choose GM-free will be limited. Choosing to consume GM crops will tend to make us more likely to oppose trade restrictions because we are less likely to use them ourselves and we are more likely to have GM production because of the risk of contamination. In the other direction, if we very strongly wanted to support free trade because of the bad precedents, we are likely to reduce the demand for GM-free which makes the introduction of GM products more favourable. Free trade would also increase the risk of accidental contamination. This is a complex decision. The costs and benefits of introduction are both highly uncertain. The only clear thing we know is that the decision to introduce GM into New Zealand production is irreversible: completely in terms of our image and partially in terms of physical contamination.⁸ The short-run costs of delay are small as few GM production technologies are currently feasible in New Zealand. If there were no irreversible costs of delaying the decision, the optimal decision would be to wait and gather more information.

The key irreversible cost would be if we lagged in agricultural technology and product development and lost long-term market share. Because New Zealand conditions are different from those elsewhere, adoption of new technologies requires local skill to adapt to local conditions. Local research experience with GM would allow us to absorb international GM advances. In addition, much of the financial gain from GM will accrue to the inventors because of international property rights. If we are not near the forefront of

⁸ In contrast, the use of GM in consumption is not irreversible (as long as it does not escape into the environment).

research we will lose many of the potential benefits. New Zealand has benefited significantly from agricultural research in the past and could do so again.

If we do delay the decision, we should invest in research and development to build and maintain our ability to compete in a GM market.⁹

If we choose to delay the introduction of GM production into New Zealand this will have implications for our trade negotiating position. We would want strong monitoring of trade in GM seed and commodities; we would want to restrict imports of GM seeds and possibly commodities; we would want to allow other countries to limit GM imports in the short term. These options are all currently possibly under the Cartagena Protocol. These will always need to be balanced against our broader free-trade interests. Ideally improvements in information that will allow us to clarify our domestic position will keep pace with the international process. This would allow us to adjust our international position as our domestic position is clarified.

7. Conclusion

International law on trade and environment issues is continuing to develop as the international community faces new international environmental challenges and increased environmental concern. In some situations free trade and the environment are complementary, for example where increased affluence resulting from trade leads to stricter environmental regulation. In other cases trade restrictions can be used for environmental purposes: to directly pursue environmental goals, to encourage participation in multilateral environmental agreements and to encourage compliance within multilateral environmental agreements. In an ideal world trade restrictions would be allowed where the environmental benefits exceed the costs to trade and the net benefits are equitably shared. In reality, scientific uncertainty and unobservable preferences often make protectionist interests indistinguishable from environmental interests. This uncertainty and the uneven distribution of relative benefits are the primary causes of trade and environment disputes under the WTO.

The WTO currently allows trade to be restricted for environmental purposes in several circumstances: where trade is the primary cause of environmental damage, for health and safety where domestic regulation is same as restrictions on imports (i.e. non-discriminatory), with acceptable risk assessment procedures, and to encourage compliance among members of MEA that mandates trade restrictions – particularly where the MEA post-dates GATT.

New Zealand has multiple interests in this area including direct interest in the environmental outcome of MEAs, a general interest in free trade and an unusual position with regard to trade in GM products. With regard to GM, our desire not to encourage trade restrictions in general (especially with highly uncertain scientific basis) conflicts with our concerns about protecting biodiversity and potential trade benefits from maintaining our own GM-free status while others place restrictions on GM imports. The trade offs involved in our trade negotiating position directly link to New Zealand's internal decision

⁹This is the conclusion also reached in the IBAC (1999) report.

on whether to allow the introduction of GM crops. This report is unable to provide definitive advice on this and does not wish to preempt the Royal Commission Report on genetic modification. We have simply tried to clarify the interrelationships between our international and domestic positions.

The scientific and economic knowledge required to make a reasoned domestic decision are likely to increase with time with international analysis. As other countries learn more and make clearer decisions about their interests we can benefit from their scientific research. In addition, our interests do not depend solely on scientific matters however, but also on the decisions of others regardless of whether those decisions are based on sound science. As others' positions on GM clarify, our optimal response will also clarify.

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