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Environment and Trade

A Handbook

Second Edition



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durable

United Nations Environment Programme
Division of Technology,
Industry and Economics
Economics and Trade Branch



UNEP

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The United Nations Environment Programme
Division of Technology, Industry and Economics
Economics and Trade Branch
and the
International Institute for Sustainable Development

iisd International Institute for Sustainable Development
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Industry and Economics
Economics and Trade Branch



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The United Nations Environment Programme

The United Nations Environment Programme (UNEP) is the overall coordinating environmental organization of the United Nations system. Its mission is to provide leadership and encourage partnerships in caring for the environment by inspiring, informing and enabling nations and people to improve their quality of life without compromising that of future generations.

UNEP's Economics and Trade Branch (ETB) is one of the units of the Division of Technology, Industry and Economics (DTIE). ETB's mission is to enhance the capacities of countries, especially developing countries and countries with economies in transition, to integrate environmental considerations into development planning and macroeconomic policies, including trade policies. The trade component of ETB's work programme focuses on improving countries' understanding of environmental, social and economic impacts of trade liberalization and the trade impacts of environmental policies. ETB supports countries in building capacity to develop mutually supportive trade and environment policies that contribute to sustainable development and poverty reduction. ETB also provides technical input to the trade and environment debate through a transparent and broad-based consultative process.

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The International Institute for Sustainable Development

The International Institute for Sustainable Development contributes to sustainable development by advancing policy recommendations on international trade and investment, economic policy, climate change, measurement and assessment, and natural resources management. Through the Internet, we report on international negotiations and share knowledge gained through collaborative projects with global partners, resulting in more rigorous research, capacity building in developing countries and better dialogue between North and South.

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Mutually supportive trade and environment policies are at the core of achieving sustainable development goals. The expansion of trade is creating great opportunities but also tremendous challenges. Maximizing the benefits of trade requires a deeper understanding of the complex web linking trade and environment issues.

*Dr. Klaus Töpfer
Executive Director, UNEP*

Preface

All around the world, the growth and liberalization of international trade is changing the way we live and work. At \$11 trillion a year, trade flows and the rules that govern them are a massive force for economic, environmental and social change. International trade is becoming an increasingly important driver of economic development, as it has been expanding at almost twice the pace of total global economic activity for the past 15 years. A growing number of developing countries look to trade and investment as a central part of their strategies for development, and trade considerations are increasingly important in shaping economic policy in all countries, developed as well as developing.

At the same time, however, most of the world's environmental indicators have been steadily deteriorating, and the global achievement of such important objectives as the Millennium Development Goals remains very much in doubt. It is possible, but by no means automatic, that trade and investment flows and liberalization might support the achievement of environment and development goals. But this will require close integration of policies in all three areas.

That integration can take place in the context of international negotiations, such as the WTO's Doha program of work, and the many ongoing regional and bilateral trade and investment negotiations, or it can occur at the national level, in policies and measures aimed at economic, social and environmental progress. In either case, wider understanding of the linkages is key.

This handbook aims to foster that sort of understanding, describing in detail how trade can affect the environment, for better and for worse, and how environmental concern can work through the trading system to foster or frustrate development, in both rich and poor countries. It is aimed mainly at those with some knowledge about trade, environment or development, but who are not expert on the intersection of the three. It should serve as a practical reference tool for policy-makers and practitioners, and be equally useful to the media and civil society. With this in mind, the handbook uses clear language and a minimum of jargon to foster a greater understanding by all segments of the public.

The handbook is available online at www.unep.ch/etb and www.iisd.org/trade/handbook.

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This revised edition of the environment and trade handbook is dedicated to the memory of our friend and colleague Konrad von Moltke—a pioneer in this area as in many others. His compassion and energy, his sense of humour and his ability to see what those before him could not see, make that memory a continuing inspiration.

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Abbreviations

AB	WTO Appellate Body
AoA	Agreement on Agriculture
ASEAN	Association of Southeast Asian Nations
BIT	bilateral investment treaty
CBD	Convention on Biological Diversity
CEC	Commission for Environmental Cooperation
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COP	Conference of Parties
CTE	Committee on Trade and Environment
DSB	Dispute Settlement Body
DSM	dispute settlement mechanism
DSU	Dispute Settlement Understanding
EM	environmental management
EU	European Union
FDI	foreign direct investment
FSC	Forest Stewardship Council
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GM	genetically modified
GMO	genetically modified organism
GPA	Agreement on Government Procurement
IPR	intellectual property right
ISO	International Organization for Standardization
LCA	life cycle analysis
LMO	living genetically modified organism
MEA	multilateral environmental agreement
Mercosur	Mercado Común del Sur (Southern Common Market: Argentina, Brazil, Paraguay, Uruguay)
MFN	most-favoured nation

NAAEC	North American Agreement on Environmental Cooperation
NAFTA	North American Free Trade Agreement (Canada, Mexico, United States)
NGO	non-governmental organization
OECD	Organization for Economic Co-operation and Development
PCBs	polychlorinated biphenyls
PIC	The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade
POPs	The Stockholm Convention on the Control of Persistent Organic Pollutants
PPMs	processes and production methods
SPS	Agreement on Sanitary and Phytosanitary Measures
TBT	Agreement on Technical Barriers to Trade
TED	turtle excluder device
TRIMs	Agreement on Trade-Related Investment Measures
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UNCED	United Nations Conference on Environment and Development
UNCTAD	United Nations Conference on Trade and Development
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UPOV	International Union for the Protection of New Varieties of Plants
U.S.	United States of America
WIPO	World Intellectual Property Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization

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1. Introduction

1.1 Global trends

Our world has seen fundamental and pervasive change in the last 50 years. National economies are increasingly integrated in a global economic structure where all the elements needed to produce a final good or service—production of inputs, design, assembly, management, marketing, savings for investment—may be sourced from around the globe in a system held together by powerful communications and information technologies. The trend toward globalization has been driven in part by these new technologies, and in part by reduced barriers to international trade and investment flows. Possibly as a result, the world has seen a steady increase in the importance of international trade in the global economy: since 1960, while the global economy almost quadrupled, world trade grew by a factor of 12.

Another important trend is increasing inequity; the benefits of growth have been unevenly spread. Although average global income now exceeds \$5,100 US per person a year, 2.8 billion people (2 in 5) still survive on incomes of less than two dollars a day. One per cent of the world's wealthiest persons earn as much income as the poorest 57 per cent. And the growing inequality between and within nations shows no signs of abating.

The world has also seen enormous environmental change. The groundbreaking Millennium Ecosystem Assessment found that in the last 50 years humans had altered the world's ecosystems more fundamentally than at any period in human history, and that some 60 per cent of the world's ecosystem services are being degraded or used unsustainably. Global carbon dioxide emissions have quadrupled, and evidence mounts that we are approaching tipping points of catastrophic climate change. The current rate of species extinction is some 1,000 times greater the typical historical rate. The steady increase in nitrogen releases from cars and fertilizers is creating deserts of lifelessness in our oceans and lakes. Half of the world's fish stocks are being fished at their biological limits, and another quarter are beyond that point, or depleted. In 20 years, if current trends continue, three and a half billion people will live in countries facing "water stress"—having less than 1,000 litres of water per person a year. Each day 6,000 people, mostly children, die from diseases caused by lack of access to clean water or sanitation.

Environmental damage has been driven at least in part by our increasing numbers—population has increased about 2½ times since 1950 to 6.4 billion, and projections for 2050 have us adding the 1950 world population again, or another 2.5 billion.

The institutions for addressing environmental problems have also evolved. Since the first global environmental treaty was signed in 1973, 12 others have entered into force, dealing with such issues as ozone depletion, transport of hazardous waste, and migratory species; over 70 per cent of the world's countries have signed all 13. At the regional or bilateral level roughly a thousand more have entered into force, constituting an enormous and complex body of international environmental law. At the national level, regulators have moved from blanket “command and control” solutions to a mixed bag of tools that includes market-based incentives such as pollution charges, taxes and trading systems. For select problems—such as stratospheric ozone depletion, local air quality, waste management and quality of regional rivers—the result has been marked by environmental improvement, but for many more the discouraging trends continue.

1.2 Environment and trade linkages

These trends are not isolated; they are fundamentally related. Much environmental damage is due to the increased scale of global economic activity. International trade constitutes a growing portion of that growing scale, making it increasingly important as a driver of environmental change. As economic globalization proceeds and the global nature of many environmental problems becomes more evident, there is bound to be friction between the multilateral systems of law and policy governing both.

This book aims to shed light on the area where these broad trends interact—on the physical, legal and institutional linkages between international trade and the environment. Two fundamental truths about the relationship should become clear in the process:

- The links between trade and the environment are multiple, complex and important.
- Trade liberalization is—of itself—neither necessarily good nor bad for the environment. Its effects on the environment in fact depend on the extent to which environment and trade goals can be made complementary and mutually supportive. A positive outcome requires appropriate supporting economic and environmental policies at the national and international levels.

At the most basic level, trade and the environment are related because all economic activity is based on the environment. It is the basis for all basic inputs (metals and minerals, soil, forests and fisheries), and for the energy needed to

process them. It also receives the waste products of economic activity. Trade is also affected by environmental concerns, since exporters must respond to market demands for greener goods and services. These physical and economic linkages are explored in Chapter 4.

At another level, environment and trade represent two distinct bodies of international law. Trade law is embodied in such structures as the World Trade Organization and regional and bilateral trade agreements. Environmental law is embodied in the various multilateral environmental agreements, and as national and sub-national regulations. It is inevitable that these two systems of law should interact. International environmental law increasingly defines how countries will structure their economic activities (parties to the United Nations Framework Convention on Climate Change, for example, have pledged to restructure their economies to cut greenhouse gas emissions), and trade law increasingly defines how countries should design their domestic laws and policies in areas such as intellectual property rights, investment policy and environmental protection. These legal linkages are explored in Chapter 5.

Trade law is increasingly more than just what happens at the multilateral level, with the explosive growth of regional and bilateral trade and investment agreements. Chapter 6 explores how these agreements address environment issues.

Finally, some issues are cross-cutting in nature. The WTO's Doha program of work, for example, involves practically all the issues surveyed in this book, and Chapter 7 starts with a look at how they are being addressed in that context. The chapter then turns to some important institutional questions born of the trade-environment relationships. What institutions might help ensure that trade and environmental policies are mutually supportive? Where and how should disputes be settled? Should there be environmental impact assessment of trade agreements and trade policies? What role should the public play?

Before delving into the linkages between trade and the environment, we take a basic look at the structure, goals and principles of the international system of environmental management in Chapter 2, and the multilateral system of trade rules in Chapter 3.

1.3 Differing perspectives

People come to the trade-environment debates from many different backgrounds. The various assumptions and worldviews they start with, and different technical vocabulary used, can be important obstacles to meaningful dialogue and solutions, although this problem featured more prominently in the early years of the debates than it does today.

People may understand the issues through any one of three perspectives—that of trade, environment or development. Of course, these are not mutually exclu-

sive—many people understand all three. What follows are stark caricatures of each perspective, but ones that help illustrate the challenge of finding policies that simultaneously support the objectives of trade, environment and development.

The trade perspective

- Trade creates the wealth that could be used to increase human well-being.
- But most national governments answer too directly to national industries, and will try to preserve domestic markets for these industries, keeping foreign competitors at bay.
- In doing so, governments make their citizens worse off: domestic firms become inefficient, domestic consumers pay higher prices, and more efficient foreign firms are shut out.
- The best protection is a strong system of rules against such behaviour, such as World Trade Organization (WTO) rules, by which all countries can abide.
- Even after signing such agreements, countries will look for loopholes. Banning or restricting trade on environmental grounds may be one such loophole.
- Trade can actually be good for the environment, since it creates wealth that can be used for environmental improvement, since the efficiency gains from trade can mean fewer resources used and less waste produced and since trade can enhance access to efficient and environmentally-friendly technologies.

The environmental perspective

- Our current social and economic systems, including the reality of prices that do not reflect the full cost of environmental damage, seriously threaten the earth's ecosystems.
- But most national governments answer too directly to national industries, and will try to protect them against “costly” environmental demands.
- In doing so, governments make their citizens worse off: domestic firms make profits, but the public subsidizes them by paying the costs of environmental degradation.
- One way to avoid these problems is a strong system of rules spelling out clearly how the environment shall be protected, at the national and international levels.

- Even after such rules are in place, governments and industry will look to scuttle them. Trade rules forbidding certain types of environmental regulations may be one way to do so.
- More trade means more economic activity and thus in many cases more environmental damage. The wealth created by trade will not necessarily result in environmental improvements.

The development perspective

- Over one-fifth of the world's population live in absolute poverty, most of them in developing countries, and the gap between the rich and poor countries continues to widen. Developing countries' top priority is reducing that poverty and narrowing that gap.
- Openness to trade and investment may be a key way to do so, though the links between openness and economic growth are not automatic.
- But rich countries protect their industries with subsidies, special trade rules and tariff systems that hurt developing country producers and exporters.
- The best solution is a strong set of multilateral rules against such behaviour, but current WTO rules are too deeply influenced by the powerful trading nations, and liberalization has in many instances selectively benefited sectors of interest to developed countries.
- Over time, as such behaviour is outlawed by trade rules, rich countries will look for new ways to keep foreign competition out of their markets. Banning or restricting trade on environmental grounds may be one of those ways.
- Demanding that poor countries comply with rich country environmental standards is unreasonable, particularly if the demands are not accompanied by technical or financial assistance. Priorities differ; for example, in many poor countries clean water is paramount but in rich countries it is no longer a primary concern. And, where the concerns are over global issues such as ozone depletion and climate change, rich countries often caused most of the environmental damage in the first place.

Over the years, the trade and environment debates have broadened to include the types of development concerns described above, on the understanding that it is simply not possible to effectively address environment issues in isolation. For example, to address the fear in high-standard countries that trade will bring pollution-intensive goods from low-standard countries, one solution might be a trade ban on environmental grounds. But this may simply have the

effect of perpetuating poverty in the exporting country, and thereby exacerbating local and global environmental stresses. A more fruitful option in the long run would be helping the exporting firm or country address the constraints that lead to the adoption of sub-standard technologies and practices. This will inevitably involve understanding and addressing development issues such as lack of resources, lack of appropriate technologies, lack of training, lack of experience.

The inseparability of environment, social and economic objectives is the central tenet of the concept of sustainable development (see Section 2.1). In recognition of the fact that environmental problems will often require solutions with a broader focus than just the environmental, this handbook at times goes beyond trade and environment interactions to describe the broader universe of trade and sustainable development issues.

Suggested readings

Global trends

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2. International environmental management

2.1 Origins

The modern system of international environmental management dates to the 1972 United Nations Conference on the Human Environment, held in Stockholm, Sweden. Several international environmental agreements, in particular some on marine pollution, predate the Stockholm Conference, but this first major environmental event triggered a flurry of activity at national and international levels, as countries and other international organizations responded to the emerging challenges of environmental management at all levels. The Stockholm Conference also pioneered new forms of public participation in a United Nations conference, establishing links between the formal process and the informal parallel non-governmental organization (NGO) process.

The Stockholm Conference led to the establishment of the United Nations Environment Programme, headquartered in Nairobi, Kenya. UNEP was to act as a catalyst for the environment in the United Nations system, but its means were modest compared with the dimensions of its task. Over the years, however, UNEP has launched a significant number of international agreements, and today has administrative responsibility for several major conventions as well as many regional agreements. It has also acted as the environmental conscience of the United Nations system.

It soon became obvious that the Stockholm Conference's focus on the environment without due concern for development was not enough for the long-term advancement of the international environmental agenda. In 1985 the United Nations established the World Commission on Environment and Development, which issued its report, *Our Common Future*, in 1987. This report was the first systematic articulation of the concept of sustainable development (see Box 2-1). This, in turn, became the basis for a major review of all international environmental activities in the United Nations through the United Nations Conference on Environment and Development, held in 1992 in Rio de Janeiro, Brazil. UNCED articulated an ambitious program of sustainable development, contained in the final conference document, known as Agenda 21. The Rio Conference helped establish the United Nations Commission on Sustainable Development and reaffirmed the role of the Global Environment Facility, thus widening the organizational basis for the

environment and sustainable development within the United Nations system. UNCED was key to allowing states to conclude the Framework Convention on Climate Change and the Convention on Biological Diversity, after short and very intense negotiations. UNCED also pioneered innovative ways for the public to participate in intergovernmental processes.

Increasingly, the complex web of institutions and organizations that develop around international environmental agreements are referred to as “regimes,” expressing the reality that they involve a variety of actors, and no longer reflect the dynamics of power between sovereign states alone. The rules governing these regimes differ from one to another, reflecting the provisions of the relevant agreement. But all draw on customary international law and a range of practices and principles that have become widely accepted.

Box 2-1: Sustainable development according to Brundtland

Sustainable development goes further than just concern for the environment. It aims to improve human conditions, but seeks to achieve it in an environmentally sustainable way. According to the “Brundtland Commission” report, *Our Common Future*, sustainable development is:

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

- The concept of “needs,” in particular the essential needs of the world’s poor, to which overriding priority should be given; and
- The idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs.

Source: World Commission on Environment and Development. Our Common Future. Oxford: Oxford University Press, 1987.

2.2 Principles

The structure of international environmental regimes must reflect the structure of the problem being addressed. A regime that protects biodiversity needs to use different tools, draw on different constituencies and have different institutional arrangements than one that protects the oceans from oil pollution, or one that manages international trade in endangered species. Nevertheless, most environmental regimes have come to respect several fundamental princi-

ples and approaches, and to articulate them. Many of these were laid out in the Rio Declaration on Environment and Development, another product of UNCED 1992. Six key principles and approaches are described below.

Prevention. It is generally expensive, difficult or impossible to repair environmental damage once it has occurred, so it is better to avoid such damage in the first place. This apparently self-evident fact has significant practical implications, since it requires action before there is any damage; that is, it requires action based on the possibility of damage.

Subsidiarity. The linkages between individuals and the global consequences of their actions are a major challenge to the organization of environmental management. In particular, it means that rules developed at one level—for example in international regimes—must be adapted to conditions in a wide variety of regional or local environments. The principle of subsidiarity calls for decision-making and responsibility to fall to the lowest level of government or political organization that can effectively take action.

Common but differentiated responsibility. Many environmental regimes require the participation of numerous countries, both rich and poor. But not all countries carry an equal responsibility for past environmental damage, and different countries have different resources at their disposal. So, while the parties to environmental regimes all acknowledge common responsibility for the environment, they also work to develop differentiated responsibilities for addressing environmental problems. Under the Kyoto Protocol, for example, only developed country parties have targets for greenhouse gas emission reductions.

Openness. Openness has two elements: transparency and public participation in policy-making. Both are necessary for good environmental management because protecting the environment requires the participation of literally countless people in many locations. Most environmental regimes are highly open, making use of environmental organizations, the media, and the Internet to communicate to the public. Many allow non-governmental organizations to participate in the discussions and negotiations of their provisions.

Polluter-pays principle. The polluter-pays principle was first propounded by the OECD (the Organisation for Economic Co-operation and Development—the “policy club” of industrialized countries) in 1972. At that time it simply said that polluters should have to bear the full cost of meeting environmental regulations and standards. No subsidies should be given to help in this process. It has since evolved to become a broader principle of cost internalization—polluters should pay the full cost of the environmental damage that their activities produce. Of course, much of that cost will be passed along to consumers in the price of the goods involved, but this then discourages consumption of more pollution-intensive goods.

Precautionary approach. Calculating the possibility of damage is a difficult task, because our knowledge of ecological and environmental processes is frequently rudimentary at best, and is based on an evolving foundation of scientific research. Unfortunately, science does not always provide clear guidance on the measures that may be needed, so we are often faced with the task of making policy in the face of uncertainty. As articulated in the Rio Declaration, the lack of conclusive scientific evidence does not justify inaction, particularly when the consequences of inaction may be devastating or when the costs of action are negligible.

2.3 National environmental standards

At the country level, these principles are put into practice through a variety of means. At the base of most national measures, and of the greatest relevance to the environment-trade interface, are environmental standards—particularly those imposed on traded goods. There are many types of environmental standards along the pathway of a product from extracting raw materials through manufacture, packaging, transport, trade, sale, use and disposal. Examples include:

- Species and habitat conservation measures;
- Restrictions on certain goods and practices, including bans, standards and permit requirements;
- Environmental taxes and charges;
- Negotiated voluntary agreements; and
- Deposit and refund, or take-back, schemes.

National standards can be grouped under five headings.

Environmental quality standards seek to describe a desired state of the environment. They can be specified in terms of an acceptable status for air or water quality, or in terms of maximum concentrations of specific pollutants in the air, water or soil. A modern approach to quality standards, which is responsive to the accumulation of harmful substances in the natural environment, is the concept of “critical loads”: levels of deposition of pollutants below which some elements of the environment are not damaged. Quality standards can also take the form of population standards requiring the protection of certain species that have become threatened or endangered.

Emission standards identify the amount of certain substances a facility may emit. Often they are dynamic standards, requiring the use of the best available technology. Emission standards can have a significant impact on production processes, since it is generally less costly to avoid producing pollutants than to capture them at the end of the production process, creating a waste stream that must in turn be managed.

Product standards specify certain characteristics that are deemed necessary to avoid environmental harm from the use or disposal of products. For example, the use of lead in household paints has been banned because some of that toxic heavy metal is likely to reach the environment and pose a hazard, and chloro-fluorocarbons have been banned from use in aerosols because they destroy the stratospheric ozone layer. Product standards are frequently used to protect human health.

Standards based on processes and production methods (PPMs) specify how products are to be produced and what kinds of impact they may have on the environment. Standards based on process and production methods take on significance in international trade that they completely lack at the domestic level. Applied to traded goods, they have been accused of amounting to the regulating country setting standards on activities in the country of production. Of course, as noted above, product standards may also force changes in processes and production methods. The trade implications of PPM-based standards are examined further in Section 5.1.

Performance standards require certain actions, such as environmental assessment, which are expected to improve environmental management. Like PPM-based standards they focus on process, but not on the process of actual production. Environmental management standards, for example, dictate a structure of firm management that is conducive to adequately addressing environmental concerns, spelling out reporting standards, mandating an objective of continuous improvement and so on.

It is possible to combine all of these measurements and standards when analyzing the full impact of a single product—to consider all the environmental impacts of a product’s production, use and disposal, and to combine them in a single life cycle analysis. While not part of the regulatory toolbox *per se*, an LCA can be used to identify opportunities to reduce environmental impacts, or to compare the environmental impacts of otherwise “like” products—for example, cloth diapers and disposable diapers, or different kinds of beverage containers. LCAs by definition look at a large number of categories of environmental impacts—for example, water and energy use, and release of various pollutants. The problem in comparing products lies in adding up the various types of impacts—and deciding how to weight them—to calculate an overall measure of environmental impact.

The overall effect of all these standards is to force producers, traders and consumers to respond to the environmental impact of the economic decisions they take; in other words, they must begin to internalize the external environmental costs in their decision-making. It is of course possible to achieve many of the same goals by using market-based instruments such as taxes, charges, tradable permits or subsidies. The advantage of such instruments is that they

are generally more economically efficient. Their drawback is that, like standards, they require precisely articulated environmental goals as well as monitoring to ensure that the desired results are being achieved. It is important to recognize, however, that all of these measures, both regulatory and market-based, result in structural economic change as environmentally desirable activities are favoured and environmentally undesirable ones disadvantaged.

This large number and variety of standards, usually used in combination rather than alone, create a complex management structure in which each standard complements the other, and few if any are effective just by themselves. To varying degrees they all have economic implications, creating potential problems for the trading system, which has thus far dealt mostly with product standards.

2.4 Multilateral environmental agreements

2.4.1 Structure

Over the past 20 years, an extraordinary number of international environmental agreements have been concluded. More than 200 multilateral environmental agreements (MEAs)—defined in this book as those involving more than two countries—are known to exist. A few of these are global treaties, open to any country. The number of bilateral agreements is unknown, but is thought to be well in excess of a thousand. The result is an international structure for environmental management that is diverse and reflects the extraordinary range of issues and interests involved.

Very few MEAs actually regulate trade or contain trade-related provisions. Of the 20 or so that do, even fewer are of notable significance to the environment-trade interface, as their measures do not substantially affect trade flows, or the value of the trade flows they do affect is not significant in global terms. Seven MEAs that are particularly relevant to trade are discussed in greater detail below.

Box 2-2: Key MEAs relevant to trade

- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)—1973
- Vienna Convention for the Protection of the Ozone Layer—1985
 - Montreal Protocol on Substances that Deplete the Stratospheric Ozone Layer—1987
- Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal—1992

- Convention on Biological Diversity—1992
 - Cartagena Protocol on Biosafety—2000
- United Nations Framework Convention on Climate Change (UNFCCC)—1992
 - Kyoto Protocol to the United Nations Framework Convention on Climate Change—1997
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (PIC)—1998
- Stockholm Convention on Persistent Organic Pollutants (POPs)—2001

(Dates refer to the completion of negotiations. All treaties listed have entered into force.)

The international structure of environmental management is extremely dynamic. The various regimes address a wide variety of issues, ranging from toxic substances to endangered species, from air pollution to biodiversity. As well, they must respond to changing scientific information about the environment, changing perceptions of the significance of this information, and the constant feedback from the successes and failures of the measures adopted in support of their objectives.

2.4.2 The key trade-related MEAs

This handbook defines MEAs as those agreements with more than two parties—that is, multilateral is anything bigger than bilateral. The word “multilateral” has a slightly different meaning for the trade community, for whom the *multilateral trading system* is the *global* trading system. Below are the MEAs that are particularly relevant to trade regimes.

The Convention on International Trade in Endangered Species. The earliest of the key MEAs, CITES was drawn up in 1973 and entered into force two years later. CITES seeks to regulate trade in certain species and their parts, as well as products made from such species. Three annexes list species identified by the Conference of Parties (on scientific advice) as requiring various degrees of trade restrictions to ensure their sustainability. These restrictions range from a general prohibition on commercial trade to a partial licensing system. CITES has long been known for the unusually active participation of non-governmental organizations—scientific and advocacy organizations in particular—in its

deliberations. In recent years it has begun—not without controversy—to address species traded in such volumes as to have a significant economic value, such as certain tree and fish species. (169 parties).

The Vienna Convention for Protection of the Stratosphere, and the Montreal Protocol on Substances that Deplete the Stratospheric Ozone Layer. The Vienna Convention was concluded in 1985, at which time ozone depletion was suspected but not yet confirmed. It provided for research and cooperation to better understand the issue, and formed a framework agreement under which specific protocols could be negotiated as needed. The evidence soon became stronger, and in 1987 the Parties drafted the Montreal Protocol, establishing a regime of control for several classes of industrial chemicals now known to harm the stratospheric ozone layer. The Protocol has been amended four times to tighten controls. The result has been a ban on the production and use of several industrial chemicals, together with severe limitations on others. It has successfully implemented a precautionary approach, by acting before the availability of clear scientific evidence, and that of common and differentiated responsibility, by establishing a fund to assist developing countries in their transition away from the use of controlled substances. Its principal implementation tool—apart from continuing public pressure—is the control of production and trade of ozone-depleting substances and trade in products containing controlled substances. It included the possibility of imposing controls on trade in products produced with (but not containing) controlled substances, but the parties have not considered it necessary to implement such controls. (Vienna Convention: 190 parties; Montreal Protocol: 189 parties).

The Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal. The Basel Convention resulted from the concern of developing countries, particularly in Africa, that they could become the dumping ground for hazardous wastes whose disposal in the developed world had become difficult and expensive. Developing countries and non-governmental organizations have played a significant role in the regime since its inception. Discussions within the regime have been marked by disputes over the most appropriate strategy for controlling the movement of hazardous waste (regional bans versus prior informed consent) and the technical difficulty in establishing unambiguous distinctions between wastes and materials for recycling. Parties have adopted an amendment banning the export of hazardous waste from mainly OECD to non-OECD countries (the Basel Ban) and a protocol on liability and compensation, both of which have yet to enter into force even though numerous countries currently adhere to them. (166 parties, 3 signatories not ratified).

Convention on Biological Diversity and the Cartagena Protocol on Biosafety. Opened for signature at the Rio Conference, the Convention's objec-

tive is conserving biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising from the use of genetic resources. The Convention has resulted in national biodiversity strategies and action plans in over 100 countries, and has produced the landmark Cartagena Protocol on Biosafety, discussed below. It also plays a major role in highlighting the importance of biodiversity issues globally, through research and public education. Linkages connecting the CBD, agriculture and the WTO TRIPS Agreement are discussed in Section 5.6.1. (188 parties, 1 signatory not ratified).

Cartagena is a Protocol to the CBD, covering trade in most forms of living genetically modified organisms (LMOs) and the risks it may present to biodiversity. It creates an advanced informed agreement system for LMOs destined to be introduced to the environment (such as micro-organisms and seeds), and a less complex system for monitoring those destined for use as food, animal feed or processing. It sets out a procedure for countries to decide whether to restrict imports of LMOs, spelling out, for example, the type of risk assessment that must be carried out. In allowing such decisions to be taken even where the risks are unknown, the Cartagena Protocol operationalizes the precautionary approach. (125 parties, 22 signatories not ratified).

United Nations Framework Convention on Climate Change and the Kyoto Protocol. The UNFCCC, adopted at the Rio Conference in 1992, is grappling with one of the most complex of all environmental issues, and the one with greatest potential for economic impacts: it aims to stabilize the emission of various greenhouse gases (such as carbon-dioxide or methane) that contribute to global climate change. Since such emissions can rarely be limited with technical, “end-of-pipe” technologies, the principal strategy of the UNFCCC must be to change the patterns of future production, consumption and investment in favour of activities that emit fewer greenhouse gases. In December 1997 the Kyoto Protocol was adopted, entering into force in February 2005. It created two categories of countries—those with greenhouse gas limitation commitments (industrialized countries) and those without. Although neither the UNFCCC nor the Kyoto Protocol includes trade-related provisions, it is highly likely that the parties, in fulfilling their Kyoto obligations, will adopt domestic policies and measures with significant trade implications. (UNFCCC: 189 parties, Kyoto Protocol: 155 parties).

Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade. The Rotterdam Convention is designed to help countries monitor and control trade in certain hazardous chemicals. Many domestically banned or severely limited goods are traded internationally. For years there was controversy over the procedures to ensure that the appropriate authorities in the importing country were informed promptly. Indeed, a GATT (General Agreement on Tariffs and Trade—the predecessor to the WTO) working group devoted sev-

eral years of negotiation to this topic, without achieving a generally acceptable result. UNEP (concerned with the management of potentially toxic substances) and the Food and Agriculture Organization (concerned with pesticide use) had a strong interest in developing a uniform system of notification. The PIC regime offers assurance that information will be provided quickly, and that it will reach the appropriate authorities when needed. And it creates a system that allows developing countries to stop the import of certain substances if they feel a need to do so. (98 parties, 17 signatories not ratified).

Stockholm Convention on Persistent Organic Pollutants (POPS). The POPS Convention entered into force in May 2004. It establishes an international regime for the control of certain substances that persist in the environment and can accumulate in the food chain, all of which are suspected of disrupting hormonal functions in animals and humans (such chemicals are known as endocrine disruptors). The controlled substances are listed in three annexes: one that envisages elimination of nine chemicals or classes of chemicals (subject to time limited exceptions), one that imposes restrictions on DDT, and one that deals with the unintentional production of certain chemicals. The POPS Convention also establishes a procedure for adding to these annexes. (108 parties, 68 signatories not ratified).

Emerging Regimes. Several other international environmental regimes are still being negotiated, or which are likely to remain based on a less formal understanding between the interested parties. The *international forest regime* remains controversial and is not fully articulated; most observers doubt that it will coalesce into a multilateral agreement in the near future. There is, however, a viable private regime for forestry, the result of collaboration between producers and environmental non-governmental organizations on labelling for sustainable practices. We may yet see a similar private *regime for sustainable fisheries* develop. These regimes are highly relevant for trade, since they involve widely traded commodities.

2.4.3 Implementation and dispute settlement

International environmental regimes involve complex interactions between the parties, their sub-national jurisdictions, their citizens and, sometimes, other stakeholders. In practice it often takes several rounds of negotiation before an effective regime emerges. Even then, implementing an MEA at the national level and monitoring its progress at the international level requires continual adjustment—the result of intensive further research on the environmental problem, and on the regime’s effectiveness—and ongoing public debate on the results of the research, among other elements.

International environmental agreements are based on consent. Of all the agreements surveyed above, only the PIC Convention has an elaborate dispute

settlement structure. It is widely recognized that coercing countries into action is not a sound basis for international environmental policy. In the first place, there is seldom potential for the kind of effective economic leverage that is possible under trade dispute settlement. In the second place, non-compliance in environmental regimes is more often due to lack of capacity to implement than it is to strategic misbehaviour. Therefore, international environmental regimes use coercive dispute settlement only on rare occasions, and are more apt to use capacity building, dialogue and transparency as solutions.

Another reason for the lack of coercive mechanisms—and rare use of the few existing mechanisms—is that, unlike in the trade context, non-compliance by one country often does not directly harm another country, but rather usually impairs the global commons. In such cases, it may be that no individual country is so harmed by non-compliance that it is worth the international diplomatic costs to pursue coercive dispute settlement. Following this logic, the most-used coercive mechanisms are in disputes over shared waters in regional and bilateral agreements, where there is direct harm.

Transparency and participation are arguably the most important implementation tools of international environmental regimes. NGOs can be instrumental in this regard by assessing a country's internal implementation of MEAs and exerting pressure on the government for good faith compliance. Scientifically-based assessments of environmental developments provide the foundation for most of these agreements, and all of this activity depends on a free flow of information and ready access to decision-making in the regime.

2.4.4 Trade-related provisions in MEAs

One of the environmental community's fears from the beginning of the trade and environment debates has been that a trade law dispute panel will find that a country, by fulfilling its obligations under an MEA, has breached its trade law obligations. Actual conflicts between WTO law and trade-related provisions in MEAs, though, have been rare; the real core of the trade and environment legal conflicts to date have involved domestic environmental measures of the type surveyed in Section 2.3. The WTO-MEAs relationship is discussed in greater detail in Section 5.5. What follows is a primer on the nature of, and use of, trade-related provisions in MEAs.

It was noted earlier that trade-related provisions in MEAs are uncommon, occurring in roughly one-tenth of all agreements. But those that exist may have important effects on international trade flows. The trade-related provisions found in five MEAs are described in Box 2-3.

Box 2-3: Trade-related provisions in selected MEAs

The Basel Convention: Parties may only export a hazardous waste to another party that has not banned its import and that consents to the import in writing. Parties may not generally import from or export to a non-party. They are also obliged to prevent the import or export of hazardous wastes if they have reason to believe that the wastes will not be treated in an environmentally-sound manner at their destination. The Ban Amendment (see above) envisages a ban on all exports from OECD countries to non-OECD countries.

The Convention on International Trade in Endangered Species: CITES bans commercial international trade in an agreed list of endangered species. It also regulates and monitors (by use of permits, quotas and other restrictive measures) trade in other species that might become endangered.

The Montreal Protocol: The Protocol lists certain substances as ozone-depleting, and generally bans all trade in those substances between parties and non-parties. Similar bans may be implemented against parties as part of the Protocol's non-compliance procedure. The Protocol also contemplates allowing import bans on products made with, but not containing, ozone-depleting substances—a ban based on process and production methods.

The Rotterdam PIC Convention: Parties can decide, from the Convention's agreed list of chemicals and pesticides, which ones they cannot manage safely and, therefore, will not import. When trade in the controlled substances does take place, labelling and information requirements must be followed. Decisions taken by the parties must be trade neutral—if a party decides not to consent to imports of a specific chemical, it must also stop domestic production of the chemical for domestic use, as well as imports from any non-party.

The Cartagena Protocol on Biosafety: Parties may restrict the import of some living genetically modified organisms as part of a carefully specified risk management procedure. Living GMOs that will be intentionally released to the environment are subject to an advance informed agreement procedure, and those destined for direct use as food, feed or processing must be accompanied by documents identifying them.

Why do some environmental agreements incorporate trade-related provisions? The explanation will vary according to the circumstances of the agreement.

There are at least four reasons why such measures are sometimes considered necessary:

1. **Regulatory frameworks.** Participants in a market need to be confident that all others face comparable regulatory constraints, and that these are being implemented properly. Some constraints reflect the economic and social choices of consumers, and can be viewed as part of the normal conditions of competition. Others reflect scientifically-based environmental imperatives and must be respected to avoid severe and irreversible damage, irrespective of other priorities. Sorting out which constraints are mandatory for all market participants and which can be viewed as optional is one of the major tasks facing trade and environmental communities alike.
2. **Containment.** Sometimes, the practical requirements of administering environmental market disciplines impose a need to maintain certain borders. For example, imposing size limits on lobsters that are caught generally protects lobster stocks, but these limitations are enforced not on the boat but in the marketplace. In warmer waters lobsters mature faster, so a smaller size limit achieves the same conservation goal. As such, from a purely ecological perspective smaller lobster should be acceptable from colder water countries. But a trade panel under the U.S.-Canada Free Trade Agreement ruled that the United States may exclude smaller Canadian lobsters from its market because it could not maintain an essential conservation discipline without such a ban; it would be too difficult to prevent under-size U.S. lobster from being passed off in U.S. markets as Canadian. Similar reasoning can apply to hazardous wastes or toxic substances, both of which become increasingly difficult to control the further they are transported.
3. **Controlling markets.** Some products may have high demand but meeting that demand may destroy the resources on which they are based. It can prove difficult or even impossible to ensure that the scarcity value of these products is adequately reflected in the price or that the associated profits are distributed in a way that promotes rather than undermines conservation. Under these circumstances, an international structure of market control is required. This is the logic behind CITES and plays a significant role in the CBD.
4. **Ensuring compliance.** The threat of imposing limits on trade with non-parties can be an effective tool for securing greater compliance with MEAs than might otherwise be so. This was done in the Montreal Protocol. Clearly, it is important to ensure that the limits are neither arbitrary nor disproportionate; that is, they cannot restrict a substantial amount of trade to address a relatively limited environmental problem.

Trade law looks rather differently on trade measures taken for environmental purposes when they are taken pursuant to an MEA. But, in the end, a number of variables come into play, such as whether the measure in question is specifically mandated by the MEA, or not specifically mandated, but taken in pursuit of MEA objectives. This set of issues is explored in more depth in Section 5.5.

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3. International trade law

3.1 Introduction

The foundations of the international trade regime date back to 1947 when the General Agreement on Tariffs and Trade (GATT) was concluded. This Agreement, salvaged from an unratified larger agreement to establish an International Trade Organization, was to be one piece of the so-called Bretton-Woods system, designed in the post-World War II environment to promote and manage global economic development. (The International Monetary Fund and International Bank for Reconstruction and Development—the World Bank—were the other two main pieces.) The 48-year history of the GATT established the two basic directions for the trade regime:

- Developing requirements to lower and eliminate tariffs, and
- Creating obligations to prevent or eliminate *non-tariff barriers* to trade, i.e., other types of rules, policies or measures that could act as impediments to trade.

From 1948 to 1994, the GATT Secretariat oversaw the development of the multilateral trade regime, including eight negotiating “Rounds” that further developed the trade regime along both the above noted lines. Early rounds focused more on tariffs alone, but non-tariff barriers began coming to the fore in the so called Kennedy Round that ended in 1964.

The last of these negotiations, the “Uruguay Round,” concluded in 1994. The *Marrakech Agreement Establishing the World Trade Organization* marked the end of the Round, and established the WTO as an organizational structure to administer the GATT and the other various multilateral trade agreements. Never properly established as an international regime since its awkward beginnings, the multilateral trade system now had a real “home.” Among the key changes brought about at this time was the creation of a more effective dispute settlement system, complete with an appellate body.

In 2001, at the WTO’s fourth Ministerial Conference, the members initiated a new work program of negotiations, analysis and work to implement existing agreements: The Doha program of work, discussed in greater detail in Section 7.1 and in various sections of Chapter 5. There is some disagreement among the members over whether the Doha work program constitutes a ninth round

of multilateral negotiations or not. This book refers to the Doha program of work, or the Doha agenda.

While the GATT was developing and the WTO being created, other areas within the trade regime were also developing. Development of the internal European trade and investment regimes both foreshadowed and underpinned the deepening continental integration. Regional trade agreements in North America, South America, Asia and elsewhere emerged, with differing degrees of trade liberalization. As well, non-tariff issues continued to grow in importance within the trade regime. By 1992–1994 (the final negotiations periods for both the North American Free Trade Agreement (NAFTA) and the WTO) they came to include intellectual property rights, investment rules, subsidies and other areas of laws and regulations that impact trade.

This vast expansion of trade rules has, not surprisingly, led to a much larger array of connections between trade law and the environment. In this section and the following one, the basic elements of the WTO and its law, as well as other sources and elements that today comprise the international trade law regime, are identified, along with their linkages to environmental management and protection. These include the most important functions, principles and agreements that provide the foundation for today's modern trade regime.

In this section and throughout the book, when we refer to the *multilateral trade regime*, we refer to the WTO body of law and institutions. When we speak of the *international trading regime*, this includes the WTO and all the other regional and bilateral agreements that cover international trade.

3.2 Structure of the World Trade Organization

The World Trade Organization came into force on January 1, 1995, fully replacing the previous GATT Secretariat as the organization responsible for administering the multilateral trade regime. The basic structure of the WTO includes the following bodies (see organizational diagram):

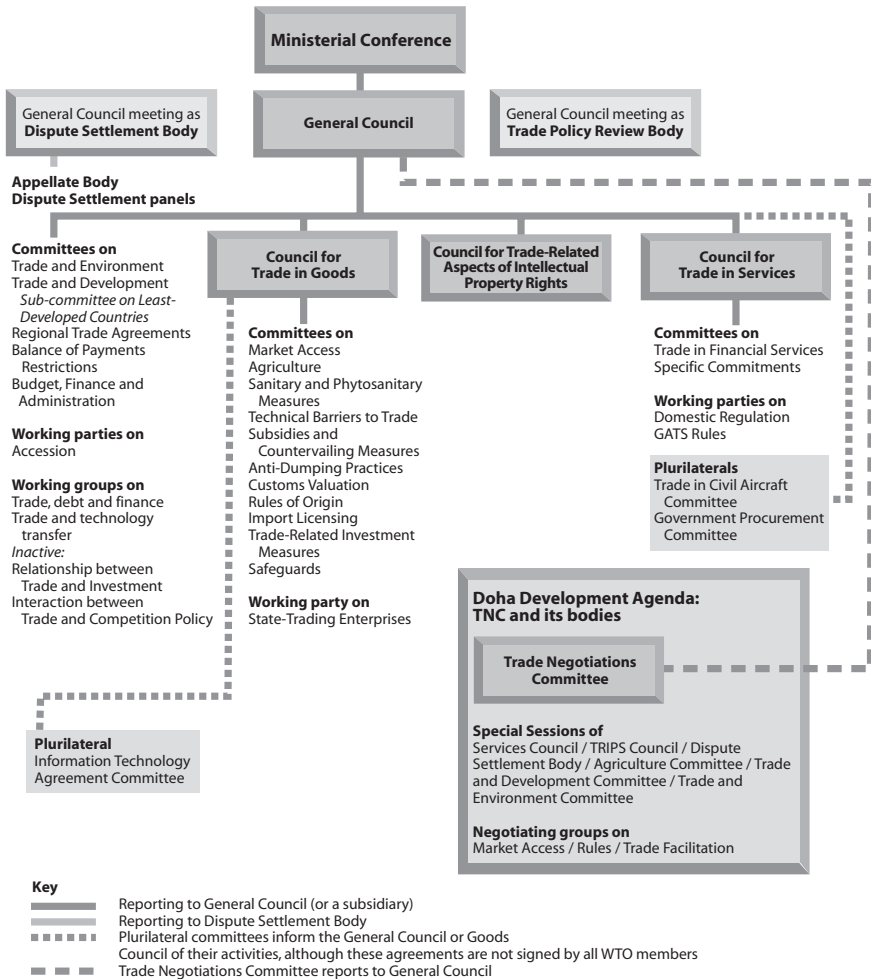
- The Ministerial Conference is composed of international trade ministers from all member countries. This is the governing body of the WTO, responsible for setting the strategic direction of the organization and making all final decisions on agreements under its wings. The Ministerial Conference meets at least once every two years. Although voting can take place, decisions are generally taken by consensus, a process that can be difficult in a body composed of 148 very different members.
- The General Council is composed of senior representatives (usually ambassador level) of all members. It is responsible for overseeing the day-to-day business and management of the WTO, and is based at

the WTO headquarters in Geneva, Switzerland. In practice, this is the key decision-making forum of the WTO for most issues. Several of the bodies described below report directly to the General Council.

- The Trade Policy Review Body is also composed of all the WTO members, and oversees the Trade Policy Review Mechanism. It periodically reviews the trade policies and practices of all member states. These reviews are intended to provide a general indication of how members are implementing their obligations, and to help them improve their adherence to their WTO obligations.
- The Dispute Settlement Body is also composed of all the WTO members. It oversees the implementation and effectiveness of the dispute resolution process for all WTO agreements, and the implementation of the decisions on WTO disputes. Disputes are heard and ruled on by dispute resolution panels chosen individually for each case, and by the permanent Appellate Body that was established in 1994. Dispute resolution is mandatory and binding on all members. A final decision of the Appellate Body can only be reversed by a full consensus of the Dispute Settlement Body.
- The Councils on Trade in Goods and Trade in Services operate under the mandate of the General Council and are composed of all members. They provide a mechanism to oversee the details of the general and specific agreements on trade in goods (such as those on textiles and agriculture) and trade in services. There is also a Council for the Agreement on Trade-Related Aspects of Intellectual Property Rights, dealing with just that agreement and subject area.
- The Secretariat and Director-General of the WTO reside in Geneva, in the old home of GATT. The Secretariat now numbers just over 600 positions, and undertakes the administrative functions of running all aspects of the organization. The Secretariat has no legal decision-making powers but provides vital services, and often advice, to the members. The Secretariat is headed by the Director-General, who is elected by the members.
- The Committee on Trade and Development and Committee on Trade and Environment are two of the several committees continued or established under the Marrakech Agreement in 1994. They have specific mandates to focus on these relationships, which are especially relevant to how the WTO deals with sustainable development issues. The Committee on Trade and Development was established in 1965. The forerunner to the Committee on Trade and Environment (the Group on Environmental Measures and International Trade) was

established in 1971, but did not meet until 1992. Both Committees are now active as discussion grounds and venues for negotiations as part of the Doha work program. The mandate of the CTE is discussed in greater detail in Section 3.2.1.

WTO Structure



The General Council also meets as the Trade Policy Review Body and Dispute Settlement Body

Source: World Trade Organization

3.2.1 The Committee on Trade and Environment

The terms of reference given to the CTE at its inception in Marrakech were, in part:

“To identify the relationship between trade measures and environmental measures, in order to promote sustainable development;

To make appropriate recommendations on whether any modifications of the provisions of the multilateral trading system are required, compatible with the open, equitable and non-discriminatory nature of the system...”

The Committee narrowed this broad mandate down to a 10-item agenda for work (see Box 3-1) and used this agenda as its framework for discussions until its role was fundamentally changed by the 2001 Doha Declaration. In Doha the members charged the Committee with focusing primarily on three issues:

- The relationship between the WTO and MEAs;
- Procedures for information exchange between MEA Secretariats and the WTO, and criteria for granting MEAs observer status in WTO meetings; and
- Reducing or eliminating barriers to trade in environmental goods and services.

For these issues the CTE was to serve as a negotiating forum, contributing to the Doha agenda results—a role fundamentally different than the discussion forum it had been up to that time, and for which it convenes in special negotiating sessions. The CTE was also instructed, in pursuing its work on the 10-point agenda, to give particular attention to three issues (though not in the form of negotiations):

- The effect of environmental measures on market access, and the environmental benefits of removing trade distortions;
- The relevant provisions of the TRIPS Agreement; and
- Labelling requirements for environmental purposes.

The substance of these issues is discussed in depth in Chapter 5, and the specifics of the CTE’s revised agenda is taken up in greater detail in Section 7.1.

Box 3-1: The Marrakech Mandate for the Committee on Trade and Environment

The CTE was created with an agenda of 10 items for discussion:

1. The relationship between trade rules and trade measures used for environmental purposes, including those in MEAs.
2. The relationship between trade rules and environmental policies with trade impacts.
3. a) The relationship between trade rules and environmental charges and taxes.
b) The relationship between trade rules and environmental requirements for products, including packaging, labelling and recycling standards and regulations.
4. Trade rules on the transparency (that is, full and timely disclosure) of trade measures used for environmental purposes, and of environmental policies with trade impacts.
5. The relationship between the dispute settlement mechanisms of the WTO and those of MEAs.
6. The potential for environmental measures to impede access to markets for developing country exports, and the potential environmental benefits of removing trade restrictions and distortions.
7. The issue of the export of domestically prohibited goods.
8. The relationship between the environment and the TRIPS Agreement.
9. The relationship between the environment and trade in services.
10. WTO's relations with other organizations, both non-governmental and inter-governmental.

3.3 Functions of the WTO

The main functions of the WTO can be described in very simple terms. These are:

- To oversee the implementation and administration of the WTO agreements;

- To provide a forum for negotiations; and
- To provide a dispute settlement mechanism.

The goals behind these functions are set out in the preamble to the Marrakech Agreement Establishing the WTO. These include:

- Raising standards of living;
- Ensuring full employment;
- Ensuring large and steadily growing real incomes and demand; and
- Expanding the production of and trade in goods and services.

These objectives are to be achieved while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, and while seeking to protect and preserve the environment. The preamble also specifically mentions the need to assist developing countries, especially the least developed countries, secure a growing share of international trade.

3.4 The core principles

The WTO aims to achieve its objectives by reducing existing barriers to trade and by preventing new ones from developing. It seeks to ensure fair and equal competitive conditions for market access, and predictability of access for all traded goods and services. This approach is based on two fundamental principles: the national-treatment and most-favoured nation principles. Together, they form the critical “discipline” of non-discrimination at the core of trade law.

- The principle of national treatment requires, in its simplest terms, that the goods and services of other countries be treated in the same way as those of your own country.
- The most-favoured nation principle requires that if special treatment is given to the goods and services of one country, it must be given to all WTO member countries. No one country should receive favours that distort trade.

Members follow these principles of non-discrimination among “like products”—those of a similar quality that perform similar functions in a similar way. They are, of course, free to discriminate among products that are not like—foreign oranges need not be treated the same as domestic carrots. Note, however, that products that are not physically or chemically identical can still be considered like products if, among other things, the products have the same end use, are seen by consumers as substitutes, perform to the same standards or require nothing different for handling or disposal. The “like products test,” which tries to determine which products are and are not like, is thus of cen-

tral importance. These two complementary principles and the notion of “like products” are discussed further in Section 3.5.1.

Some argue that the concept of sustainable development has now emerged as a principle to guide the interpretation of the WTO Agreements. In the 1998 Appellate Body ruling in the *U.S.-Shrimp-Turtle* case (see box 3-2), it was made clear that the interpretation of WTO law should reflect the Uruguay Round’s deliberate inclusion of the language and concept of sustainable development (in the Preamble of the Marrakech Agreement establishing the WTO). This ruling may have moved the WTO toward requiring the legal provisions of its agreements to be interpreted and applied in light of the evolving principles and legal standards of sustainable development.

How the WTO will use sustainable development as a principle of interpretation in the future remains, of course, to be seen. But it is clear that elevating “sustainable development” to this role would be a major step in making trade policy and sustainable development objectives mutually supporting.

Box 3-2: The WTO, shrimp and turtles

The WTO Appellate Body (AB) rulings in the *U.S. Shrimp-Turtle* case are something of an environmental landmark. The case stemmed from a U.S. measure banning the import of shrimp from countries that did not mandate measures similar to those mandated for the U.S. fleet to protect endangered sea turtles from drowning in shrimp nets. It was thus a PPM-based measure, discriminating among shrimp imports based on the way the shrimp was harvested.

In October 1996 India, Malaysia, Pakistan and Thailand complained to the WTO that the measure violated WTO rules. The dispute panel agreed, as did the AB. But the latter went against the traditional understanding, ruling that the U.S.’ PPM-based measure could be allowed under GATT’s Article XX(g) exception, which focuses on conservation of natural resources. It also set a precedent by looking outside trade law to several MEAs in helping it to define natural resources as including *living* resources (such as turtles).

But it faulted the U.S. on process, finding unjustified or arbitrary discrimination, including:

- Specifying the use of a specific technology—the turtle excluder device (TED)—rather than specifying an environmental objective;

- Giving the complainants less lead time for compliance than given to other countries;
- Rejecting shrimp based on prevailing policy in the country of origin, even if the shrimp in question had been caught using acceptable U.S. standards;
- Failing to take into account the relative cost of TEDs in developing countries;
- Failing to explore multilateral alternatives with the complainants.

The result is not only a welcome set of precedents from a sustainable development perspective, but also a “rough principles” guide to what might make a PPM-based measure acceptable.

3.5 The key agreements, with special consideration of those related to the environment

3.5.1 GATT 1994

The GATT is the starting point for the key principles of trade law, whether multilateral, bilateral or regional. First concluded in 1948, it has stayed in largely the same form since then, forming an integral part of the Uruguay Round results as GATT 1994. It is composed of 37 articles and a number of explanatory understandings and addenda. This section reviews a few selected articles that are of key environmental importance.

The Preamble

The first of these, which in a sense underlies our understanding of the GATT 1994 and other elements of the WTO, is the preamble of the Marrakech Agreement—the agreement that concluded the Uruguay Round of negotiations, and established the WTO. Although the text of the GATT itself was not amended in the Uruguay Round, the preamble of the Marrakech Agreement is now understood to have made an important change to the original GATT’s preamble by incorporating it and making key additions. The original text of the main paragraph of the GATT 1947 preamble is set out in normal script below. The additions coming from the Marrakech Agreement are in italics:

Recognizing that their relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real

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

This addition has, in fact, taken root as a helpful guide in interpreting the GATT and other WTO agreements and, as a result, has had a significant impact on the decisions in the WTO's dispute settlement mechanism, especially in the Appellate Body. As a result of these decisions, GATT 1994 should be read and understood in the light of this new preamble.

In terms of its relationship to environmental management and protection, the GATT law needs to be worked through in a two-step manner: first, there are some specific disciplines, most notably on discrimination between domestic and imported products and on quantitative restrictions on imports and exports. Then there are exceptions to the rules, which establish the rights of members to deviate from those disciplines for certain reasons, including environmental protection. Both steps are considered below.

Articles I and III: Non-discrimination, like products

Articles I and III of GATT are the legal home of the core principles: most-favoured nation and national treatment. These principles were described earlier as together constituting the critical WTO discipline of non-discrimination.

Article I establishes the most-favoured nation rule. This requires parties to ensure that if special treatment is given to the goods of one country, it must be given to all WTO members. This provision originated because states had different tariff levels for different countries, and it was designed to reduce or eliminate those differences. The principle has now also been extended to other potential barriers to trade.

This rule has two major exceptions. The first applies to regional trade agreements. Where these have been adopted, preferential tariffs may be established between the parties to these agreements. The second exception is for developing countries, and especially the least developed countries. GATT allows members to apply preferential tariff rates, or zero tariff rates, to products coming from these countries while still having higher rates for like products from other countries. This exception is designed to help promote economic development where it is most needed.

Article III establishes the national-treatment rule. This requires that the products of other countries be treated “no less favorably” than “like products” manufactured in the importing country. The basic purpose of the national treatment

rule is to ensure that products made abroad have the same opportunity to compete in domestic markets. That is, domestic laws, regulations and policies should not impact on the competitive opportunities of imported products.

Two key issues arise here. First, what does “no less favorably” mean? Under trade law, it is understood that domestic measures can be different for imported and domestic products, as long as the resulting treatment of the imported product is no less favorable in terms of its opportunity to compete in a market. In addition, the law can be exactly the same on paper for both domestic and imported products but, if the effect of the law is substantially different between them and the imported product is treated worse in practice (*de facto*), this could also be a breach of the national treatment rule. The key test, then, for less favorable treatment, is how the measure actually impacts on the products in question.

The second key issue is what is meant by “like products.” Article III mandates equal treatment for “like products” only, giving the definition great importance. The like products test is important from an environmental perspective. This issue will be explored further when we discuss process and production methods in Section 5.1, but for now it can be highlighted with an example. Consider two integrated circuit boards, one produced in a way that emits ozone-depleting substances, and another produced in a non-polluting way. Are these products like? If they are, then environmental regulators cannot give preference to the green product over the other when both arrive at the border. Nor can they discriminate against the polluting product if it arrives at the border to compete against domestically-produced clean versions. On these questions no clear answer is available today, and existing case law allows arguments to be made either way.

It is a different matter if the pollution in question arises not due to how a good is produced, but due to the characteristics of the good or the manner in which it is used or disposed of. That is, is an energy-efficient automobile “like” an energy-wasteful one? Traditionally, the GATT dispute panels used four criteria to determine whether products were like, all designed principally to test whether they were in direct competition for market share—whether they were “commercially substitutable”:

1. Physical properties, nature and quality;
2. End uses;
3. Consumer tastes and habits; and
4. Tariff classification.

The WTO’s Appellate Body has so far declined to add risks to human health or the environment as a separate criterion for determining likeness. However,

it has stated that the four tests described above are not treaty-mandated criteria, and that any final determination of likeness requires an overall assessment, based on a range of relevant criteria and related facts. In at least one case (*EC – Asbestos*), that range has included the risks a product poses to human health or the environment. That is, according to the Appellate Body, when risks arise from one product's physical characteristics, but not from another's, this is a legitimate argument against likeness.

Article XI: Quantitative restrictions and licences

Article XI of GATT imposes another type of limit on measures that a member can take to restrict trade. It prohibits the use of import or export bans or quotas, whether through simple bans or limitations or through import and export licensing schemes. This prohibition stems from the fact that such volume-based measures are more trade distorting than are price-based measures such as tariffs and taxes. Agricultural products currently benefit from an important exception to Article XI, and are generally subject to an entirely separate regime (the WTO Agreement on Agriculture).

Article XI might conceivably lead to conflicts with the trade mechanisms in some MEAs. For example, the Basel Convention and CITES impose license or permit requirements for trade in the materials they control. However, to date these types of provisions in MEAs have never been challenged under trade laws.

Article XX: The environmental exceptions

A government challenging an environmental (or other) measure must argue a breach of Article I, III or XI of the GATT, (or another agreement, as described elsewhere). However, even where a national law is found inconsistent with one of these rules, it will not violate GATT 1994 if the state invoking the measure can successfully argue that it falls under the provisions of GATT Article XX (General Exceptions), which allows for certain specific exceptions to the rules. Two types of exceptions are particularly relevant for environment-related measures, namely Article XX(b) and XX(g):

Article XX: Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:...

- (b) necessary to protect human, animal or plant life or health;*
- (g) relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption;*

A country wanting to use the environmental exceptions in Article XX has two hurdles to clear. It must first establish the *provisional justification* for using Article XX by showing that sub-paragraph (b) or (g) applies. It must then establish *final justification* by showing that the measure in question does not contravene the lead paragraph, or *chapeau*, quoted above.

Paragraph (b) requires the state to show that the measure is “necessary” to protect the environment. The necessity test had been applied in some GATT cases to categorically rule out environmental laws that protected the environment outside the enacting country’s borders. However, the 1998 WTO Appellate Body ruling on Article XX(g) (the *U.S.-Shrimp-Turtle* case—see Box 3-2) may have changed this by requiring just a “sufficient nexus” between the law and the environment of the enacting state. This ruling will make it difficult to sustain blanket exclusion in the application of paragraph (b) of the same article. Although the ruling did not fully explore what constituted a sufficient nexus, it appears that transboundary impacts on air and water, or impacts on endangered and migratory species, for example, might qualify.

Other aspects of the GATT-period necessity test required a Member to show that there was a need to use trade-impacting measures and, if this was shown, to show that the least trade restrictive measure had been used. These requirements constitute a difficult hurdle, particularly if the disputed measure is weighed against purely hypothetical alternatives, rather than those that are actually practical for environmental regulators. However, recent WTO cases have taken a more reasoned approach, considering only “reasonably available” alternative measures, and defining “reasonable” by considering such factors as the measure’s cost and the administrative capacity to implement them. In addition, the alternative measures must be equally effective in achieving the state’s objectives.

A state claiming an exception under paragraph (g) must demonstrate first that its law relates to the conservation of exhaustible natural resources. *U.S.-Shrimp-Turtle* (see Box 3-2) made progress, from an environmental perspective, in defining exhaustible natural resources broadly, to include living and non-living resources (including other species) and renewable and non-renewable resources. Second, the law must have been accompanied by domestic-level restrictions on management, production or consumption of the resource to be conserved. In other words, the costs of any conservation regime must not only be reserved for foreigners. Finally, the law must be “primarily aimed at” the conservation objectives; it must show “a close relationship between means and ends.” These requirements help ensure that environmental protection is not merely disguised trade discrimination.

If a law passes the tests described above it must then pass the tests in the *chapeau*, or opening paragraph, of Article XX, which address how the law is

applied. The three tests in the chapeau to be met are whether, in its application, the measure is arbitrarily discriminatory, unjustifiably discriminatory or constitutes a disguised restriction on trade. The clearest statement to date on these tests in an environmental context comes from the 1998 *U.S.-Shrimp-Turtle* case. Although the Appellate Body did not try to define these terms, it arguably defined a number of criteria in that case for not meeting the tests including, for example, the following:

- A state cannot require another state to adopt specific environmental technologies or measures—different technologies or measures that have the same final effect should be allowed.
- When applying a measure to other countries, regulating countries must take into account differences in the conditions prevailing in those other countries.
- Before enacting unilateral trade measures covering foreign process and production methods, countries should attempt to enter into negotiations with the exporting state(s). If exporting states do not agree to negotiate, or negotiate in bad faith, this allows greater leeway for importing states to subsequently enact unilateral measures.
- Foreign countries affected by trade measures should be allowed time to make adjustments.
- Due process, transparency, appropriate appeals procedures and other procedural safeguards must be available to foreign states or producers to review the application of the measure.

3.5.2 The Agreement on Technical Barriers to Trade

The Marrakech Agreement Establishing the WTO brought together a number of agreements negotiated in the Uruguay Round, as well as GATT 1994, to form a coherent body of WTO law covering many aspects of trade in goods and services. One of those agreements was the Agreement on Technical Barriers to Trade (preceded in the Tokyo Round by the plurilateral Standards Code), which covers standards-related measures that might be non-tariff barriers to trade. These can include technical performance standards a product must meet to be imported or exported—for example, energy efficiency standards for washing machines. They may also include environmental, health, labour or other standards a product must meet during its lifecycle—for example, forest products must come from sustainably managed forests. The TBT Agreement dictates when such barriers may be allowed and what conditions must be met (notification, transparency in developing the rules, the use of international standards when appropriate, and so on). It applies fully to all government standards, including most levels of government. Non-govern-

mental, non-mandatory standards are less strictly covered under what is called the Code of Good Practice. The differences in coverage are discussed in greater detail in the context of environmental standards and ecolabels, in Section 5.4.

Where the core thrust of the GATT is to establish a *relative* standard of treatment for trade in goods—that is, foreign goods should not receive worse treatment than that accorded to domestic goods, or to goods from third countries—the TBT is different in that it goes further to require certain *absolute* standards of treatment. For example, the TBT demands that labelling requirements not be more trade restrictive than necessary, regardless of whether foreign and domestic producers are treated alike.

3.5.3 The Agreement on the Application of Sanitary and Phytosanitary Measures

The Agreement on Sanitary and Phytosanitary Standards, like the TBT Agreement, was negotiated in the Uruguay Round. It deals with standards “necessary” to protect humans, animals and plants from certain hazards associated with the movement of plants, animals and foodstuffs in international trade. These include, for example, measures in these areas to protect the environment or human, animal and plant health against:

- The risks from pests, diseases and disease-related organisms entering the country with the traded goods; and
- The risks arising from additives, contaminants, toxins or disease-causing organisms in foods, beverages or feedstuffs.

Like the TBT Agreement, the SPS Agreement provides for certain strict standards of rule making, in this case related to sanitary and phytosanitary measures. It describes what conditions they must meet (such as notification, transparency in developing the rules, the use of international standards when appropriate, and so on). It requires that standards be based on scientific evidence and that a risk assessment be undertaken. Special provision is made for temporary measures when current scientific information is insufficient to adopt permanent measures, making the SPS Agreement one of the few WTO agreements to observe the precautionary approach.

The absolute standards set by the TBT and SPS Agreements have the potential to create problems. In some cases, the bar can be set high enough that it becomes difficult for developing countries, with limited technical and administrative resources, to clear it. As well, the standards set by the SPS Agreement in particular may differ from those established in domestic and international environmental regimes. For example, the SPS Agreement, while it does have provisions for temporary measures in the absence of certainty, does not go nearly so far as the Cartagena Protocol in allowing precautionary measures.

There is some uncertainty, then, about the exact nature of countries' obligations with respect to rules of these types, and some potential for trade rules to conflict with national and international environmental policies set outside the WTO.

3.6 Other agreements

Several other WTO agreements are relevant to the longer-term relationship between the trade regime, environment and sustainable development. Some are under negotiation as part of the Doha program of work (see Section 7.1), though the environmental implications of the talks are not generally being explicitly addressed. These include:

- The Agreement on Agriculture (see Section 5.8);
- The Agreement on Subsidies and Countervailing Measures (see Section 5.7);
- The General Agreement on Trade in Services (see Section 5.10); and
- The Agreement on Government Procurement (see Section 5.12).

3.7 Regional trade agreements

Although the WTO provides the central features of the global trade regime, there is also an increasing number of regional and bilateral trade agreements in force, in large part modelled on the multilateral system. Of the 273 regional trade agreements that had been notified to the WTO as of December 2003, only 120 pre-date 1995. If agreements conclude as planned under WTO notification, the end of 2005 will see almost 300 regional trade agreements in force. There are also some 2,200 bilateral investment treaties in force.

Under GATT Article XXIV and GATS Article V such free trade areas are allowed under WTO rules, provided they meet three criteria: trade barriers with non-signatories are not raised, the free trade area should be fully established within a reasonable transition period (generally interpreted as no more than ten years), and tariffs and regulations should be eliminated for "substantially all sectors." The latter has been subject to various interpretations, and many agreements arguably fail to clear this hurdle. Nonetheless, though all regional/bilateral agreements involving members must be notified to and approved by the WTO, none has ever been rejected. It may be that members are reluctant to censure practices in which they too engage.

Regional and bilateral agreements take a wide variety of approaches to environmental issues. These are described in greater detail in Chapter 6.

3.8 Dispute settlement

The WTO's dispute settlement mechanism, with its ability to deliver binding decisions, is one of the central elements of the Uruguay Round Agreements. The Dispute Settlement Understanding (DSU) introduced a more structured dispute settlement process with more clearly defined stages than that which existed under GATT since 1947. A fundamental difference between the two is that under GATT a positive consensus was needed to adopt reports, so any one party could prevent formally adopting a decision. Under the DSU, dispute settlement reports are automatically adopted, unless consensus is to the contrary. This is known as "reverse consensus" and makes the decisions very difficult to reject. The DSU did, however, add a mechanism for appealing rulings to a standing Appellate Body.

A dispute is brought to the WTO when a member believes that a fellow member is infringing its rights under one of the agreements governed by the WTO. This usually occurs when a company brings an alleged violation to the attention of its government, and the government decides that action before the WTO is warranted. The two parties to a dispute then follow a pre-defined set of procedures (see Box 3-3).

Box 3-3: Four phases of the dispute settlement mechanism

Consultations: Parties to a dispute are obliged to see if they can settle their differences. If consultations are not successful within 60 days, the complainant can ask the Dispute Settlement Body to establish a panel. The parties may also undertake good offices, conciliation, or mediation procedures.

The Panel: The three-member panel decides the case in a quasi-judicial process. Where the dispute involves a developing country, one panellist is from a developing country. The panel report, circulated to all WTO members within nine months of panel establishment, becomes the ruling of the DSB unless it is rejected by consensus or appealed.

Appeals: The possibility of appealing a panel ruling is a new feature in the DSM as compared with GATT. Either party can appeal the ruling of the panel based on points of law. Appeals are heard by three randomly selected members of the Appellate Body and may uphold, modify or reverse the legal findings and conclusions of the panel in a report issued within 60 to 90 days.

Surveillance of implementation. The violating member is required to state its intentions on implementation within 30 days of the report being adopted by the DSB. If the party fails to implement the report within a reasonable period (usually between eight and 15 months), the two countries enter negotiations to agree on appropriate compensation. If this fails, the prevailing party may ask the DSB for permission to retaliate, by imposing, for example, trade sanctions, the level of which is subject to arbitration.

The DSM cannot force a state to change its laws, even if they are found to contravene WTO rules. States intent on keeping such laws can either negotiate compensation for the complainant (for example, increasing the access to markets in another area), or failing that, be subjected to retaliatory trade sanctions.

Suggested readings

Structure and functions of the WTO

Understanding the WTO. A WTO primer. <http://www.wto.org/english/thewto_e/whatis_e/tif_e/tif_e.htm>.

Sutherland, Peter *et al.*, 2004. “The Future of the WTO: Addressing Institutional Challenges in the New Millenium.” Report by the Consultative Board to the Director General Supachai Panitchpakdi. Geneva: WTO. <http://www.wto.org/english/thewto_e/10anniv_e/future_wto_e.pdf>.

The key agreements

WTO Legal Texts. <http://www.wto.org/english/docs_e/legal_e/legal_e.htm>.

Dispute settlement

WTO Dispute Settlement. <http://www.wto.org/english/tratop_e/dispu_e/dispu_e.htm>.

4.

Physical and economic linkages

There is no simple pattern to the relationship between trade, environment and development. Depending on the sector, the country, the markets and prevailing policies, trade and trade liberalization may be good or bad for the environment and development. In fact, they will usually be both at once—good in some ways, bad in others.

This chapter illustrates the point by listing and explaining the complex physical and economic linkages that bind trade and sustainable development. For the most part, these consist of the impacts of trade on environment and development. The next chapter, on legal and policy linkages, widens the scope to also include the impacts of environmental concerns and environmental law on trade.

Trade flows and trade liberalization have at least four types of physical and economic impacts on environment and development: product effects, scale effects, structural effects and direct effects.¹ Each of these is examined in turn below.

4.1 Product effects

Product effects occur when the traded products themselves have an impact on the environment or development. On the positive side, trade may lead to spreading of new technologies for protecting the environment, such as microbial techniques for cleaning up oil spills. Or it may more rapidly spread goods or technologies that have less environmental impact—for example, solar power technology or more fuel-efficient automobiles—than those currently used. Openness to trade and investment can also help contribute to development objectives, by facilitating transfer of new and improved technologies and management systems.

On the negative side, trade can facilitate international movement of goods that, from an environmental perspective, would best never be traded. With hazardous wastes and toxic materials, the environmental risks increase the further the goods are transported, since spillage is always possible. As well, such “goods” may end up being dumped in countries without the technical or administrative capacity to properly dispose of them, or even assess whether they should be accepted. Trade also makes possible the over-exploitation of species to the point of extinction—there is rarely enough domestic demand to create such pressure.

1 This taxonomy is based on the work of the OECD. See *The Environmental Effects of Trade*, Paris: OECD, 1994.

A subset of product effects, sometimes termed “technology effects,” is associated with changes in the way products are made depending on the technology used. Technology effects stem from the way in which trade liberalization affects technology transfer and the production processes used to make traded goods. Positive technology effects result when the output of pollution per unit of economic product is reduced. Foreign producers may transfer cleaner technologies abroad when a trade measure or agreement results in a more open market and a business climate more conducive to investment. Trade-induced growth and competitive market pressures generated by liberalization can hasten processes of capital and technological modernization for all firms. Newly opened markets can provide the revenue and the income to allow firms to accelerate capital turnover, and invest in cleaner, more efficient plants, technologies and processes.

On the other hand, trade liberalization and an expanded marketplace may harm more environmentally-friendly and socially valuable traditional production methods. Trade liberalization can also promote the spread and use of harmful, less-environmentally-friendly technologies. Whether technology effects stemming from liberalization have an overall positive or negative effect on the environment will depend considerably on other conditions and policies in the marketplace that determine availability and choice of those technologies (for example, price and national environmental regulation). These effects are discussed under the heading “imported efficiency” in Box 4-1.

4.2 Scale effects

Trade and trade liberalization can expand the level of economic activity possible by making that activity more efficient. Box 4-1 explains the ways in which trade can increase efficiency, producing more goods with the same given set of natural resources, labour, machines and technology.

This expansion—essentially creating additional wealth—can have positive effects on the environment and development. It has obvious development benefits; although development is more than economic growth, such growth is essential for development in most Southern countries. We should note, however, three important qualifications to this positive link between trade and development:

- First, distribution matters. That is, if trade increases inequity by creating wealth that is mostly concentrated in the hands of the wealthy, then it works against important development objectives.
- Second, not everyone will benefit from trade liberalization; inherent in the wealth-creating process is destruction of inefficient firms and sectors.

- Third, the potential of trade to increase wealth is just that: potential. To enjoy trade's full potential countries may need to devote, for example, a large amount of resources to building capacity in their export sectors.

Where trade creates wealth, two types of environmental benefits may follow. First, increased efficiency can directly benefit the environment, since efficient firms need fewer natural resource inputs and pollute less. In this sense, the basis of comparative advantage—efficient use of resources—also underlies the goal of sustainable development.

Second, efficiency can benefit the environment indirectly by making people wealthier, and thus more likely to demand stronger environmental protection. This is not to say that the poor do not value the environment; indeed, their poverty may mean they depend on it more directly than do the rich. But it may be a lower priority than it would for those with stable employment and adequate income, food and housing. Much evidence suggests that richer economies will likely have lower levels of certain harmful emissions than poorer ones (this relationship does not hold for pollution and environmental degradation whose effects are felt far away in time or in space, such as greenhouse gas emissions). Where trade alleviates extreme poverty, it may save people from a vicious cycle whereby they are forced to degrade their environment to survive, in the process becoming increasingly impoverished.

An increased scale of economic activity can also have negative environmental effects. Most economic activity damages the environment in one way or another, whether in extracting raw materials, harvesting renewable resources, or in creating waste and pollution. Unless regulations are in place to ensure that the additional activities cause no harm—an unlikely scenario—increasing the scale of economic activity means increasing the levels of environmental damage. In fact, while the environment has benefited from steadily increasing economic efficiency over the years—a “decoupling” of growth from environmental impacts—those benefits have typically been overwhelmed by the impacts of increased production and consumption.

Another possible negative effect stems from the additional wealth created by trade—the same wealth that, as noted above, can benefit the environment and development. For some types of pollution, increased wealth may mean more, not less pollution. The richer countries of the world, for example, have far higher per capita emissions of all types of greenhouse gases than do developing countries, far higher per capita use of natural resources, and far higher per capita emissions of such toxins as PCBs, dioxins and furans. With enough wealth comes the opportunity to consume at levels and in ways that are worse for the environment.

Box 4-1. Improving efficiency: How trade can create wealth

Allocative efficiency. Liberalizing trade allows countries to specialize in producing those items at which they are relatively more efficient—at which they have a “comparative advantage.” This allows more goods and services to be produced by nations that engage in trade, and so increases GDP. The other side of this coin is that trade restrictions or distortions tend to decrease allocative efficiency. For example, if a Northern country put enough tariff protection or subsidies in place, and devoted enough greenhouses and energy, it could produce coffee for its own market. But this would be economically inefficient and environmentally damaging.

Efficiency from competition. Another way in which trade creates wealth is to expose domestic firms to foreign competition, and thereby force them to innovate to become more efficient. Sometimes, better provision of goods can directly serve development objectives, as in the case of telecommunications and other such infrastructure provision. Again, these efficiency benefits are missed where trade is restricted or distorted. Of course, even efficient domestic producers may suffer if exposed to competition from firms with international monopoly power.

Imported efficiency. A third way in which trade can create wealth is through openness to foreign investment, or imports of foreign technology, which can bring more efficient methods of process and production. These can be embodied in a piece of equipment, or in the management techniques brought by a foreign firm establishing itself in a host country. Some multinational firms adhere to a global standard, and bring the same level of technology and practice to all their locations worldwide. Others will diminish the imported efficiency effect by using outdated, less efficient technology in countries where health, safety and environmental protection is more lax.

4.3 Structural effects

Trade liberalization will lead to changes in the composition of a country's economy, causing it to produce more of the goods it makes well or has in abundance, to trade for those it does not. For example, a heavily forested country that did not trade would produce only enough forest products for its own people. Under a trading scenario it might produce enough for export as well, increasing the size of forestry's slice in the nation's economic pie. This

kind of structural effect can be either positive or negative for the environment and development.

On the positive side, if the composition of the economy changes so that less polluting sectors have a bigger share of the pie, then trade has resulted in environmental improvements (at least at the national level; the polluting firms may have simply moved to a different country). Similarly, trade liberalization would help foster development if the composition of the economy changed to include sectors or firms with stronger links to the domestic economy, increased employment prospects, or otherwise enhanced potential for creating income equity.

Trading with a country whose consumers demand green goods may also change the composition of the economy, if exporters respond by creating new products or sectors. A number of coffee producers in Mexico, for example, have collaborated on marketing organically grown coffee, which can be sold at premium prices. The potential environmental benefits are obvious. Usually, the impetus for a green shift in composition comes not from final buyers of goods, but from other firms buying inputs. For example, Ford and GM, two giants of U.S. automobile manufacturing, have declared that they will buy only from suppliers that are certified as following the ISO 14001 environmental management system. If ISO certification leads to environmental improvements, then Ford and GM will have forced such improvements down the supply chain to foreign and domestic suppliers.

Also on the positive side, trade liberalization may remove subsidies, quotas or other trade-restrictive measures that frustrate allocative efficiency. To use the fictitious example cited in Box 4-1, if trade liberalization forced a Northern country to stop protecting its own coffee industry, the resources that had been used for that industry could go to other more productive uses. This would have significant development benefits for the countries where coffee grows naturally, which could increase their exports. It would also have environmental benefits. For example, far less heat (or none) from fossil fuels would be needed to grow the same value of more traditional produce in the former coffee greenhouses.

On the negative side, if the goods that a country makes well are based on natural resources, or are pollution-intensive, then trade liberalization would increase the share of such industries in the national economy. Without appropriate environmental policies, this would mean increased pollution, or accelerated harvesting of natural resources such as fish or timber, perhaps at unsustainable levels. When liberalization creates opportunities for this type of trade, linking domestic natural resources to international demand, environmental degradation and resource depletion can be rapid, and the resulting scale of activity in the newly-expanded sectors can overwhelm existing domestic regulatory regimes.

Similarly, trade liberalization may change the mix of industries to attract those that do little to help advance development objectives. Agricultural liberalization, for example, can displace subsistence farmers for investors with the wherewithal to operate large-scale cash crop export businesses. While the size of the economy might increase under such a scenario, income distribution often suffers.

Another set of possible negative effects of economic openness is related to timing of liberalization, and the transitional process of economic restructuring. These result from openness not only to trade in goods and services, but also to flows of investment (for example, direct investment, portfolio investment and currency speculation). More and more research shows that timing is crucial in liberalizing regimes for trade and investment. Small developing economies in particular may be hamstrung by geographical, sectoral or institutional problems that cannot be quickly overcome. In the meantime, liberalization may produce a painful and protracted transition. In these economies, experience has shown that economic openness must be properly staged, and accompanied by policies specifically designed to ease the restructuring process. Otherwise, liberalization may, at least in the short and medium term, actually work against growth, employment, poverty alleviation, environmental protection and other components of sustainable development.

4.4 Direct effects

Direct effects are environmental impacts caused by the very fact of trade, rather than caused indirectly by the economic or legal changes it brings about. One such impact is the pollution associated with the transport of traded goods. Whether by truck, by ship or by air, traded goods must somehow move from their place of production to their point of final sale, and so increased trade in goods will inevitably mean increased transport pollution. Studies of the environmental impacts of the European Union's internal market predicted that the increased pollution—mostly from truck transport—would dwarf all other environmental impacts, as well as outweigh any environmental benefits to be derived from integration.

Another direct impact comes from invasive species of plants and animals that are unintentionally transported with traded goods. These can be imported on the goods themselves (e.g., pests arriving on produce), or in the process of delivering the goods (e.g., in the packaging material, or on board the transport vehicles). The Asian long-horned beetle, poised to devastate the hardwood forests of Northeastern United States, probably arrived in wooden packaging crates from Asia. The annual economic damage done by one invasive species alone—the zebra mussel, brought the North American great lakes in the ballast of ships—is over a billion dollars. Because they play havoc with host ecosystems, crowding out native species, invasives are a major or contributing factor in the demise of roughly half the endangered species in North America.

Suggested readings

Physical and economic linkages

Nordstrom, Hakan and Scott Vaughan, 1999. "Trade and Environment," (special studies #4). Geneva: WTO. <http://www.wto.org/english/res_e/booksp_e/special_study_4_e.pdf>

Copeland, Brian R. and M. Scott Taylor, 2003. *Trade and the Environment: Theory and Evidence*. Princeton: Princeton University Press.

Gallagher, Kevin P. and Jake Werksman, 2002. *Earthscan Reader on International Trade and Sustainable Development*. London: Earthscan Publications Ltd.

5. Legal and policy linkages

The previous section described the ways in which trade, environment and development were related at a physical and economic level, mostly focusing on the impacts of trade on environment and development. This section looks at a different class of linkages—the interactions between trade law and environmental law. It was noted earlier that environmental law increasingly dictates how countries shall structure their economies (for example the Kyoto Protocol will, if successful, involve massive changes in investment and production decisions), and trade law increasingly defines how countries should structure their domestic laws and policies in areas such as environmental protection. It is inevitable, then, that the two systems of law and policy will interact.

These interactions occur at two levels—the national and the international. Nationally, the areas of policy we will treat include subsidies, environmental labelling, intellectual property rights, agriculture, investment and government procurement. We will also look at national-level environmental standards as they relate to three subjects: discrimination based on the use of process and production methods, the competitiveness effects of different levels of standards between countries, and policy-making under uncertainty. Internationally, we will look at the interaction of the multilateral system of trade with the multilateral regimes for environmental management.

5.1 Processes and production methods

Over the course of the 1990's, the acronym “PPM” (processes and production methods) became perhaps the most debated set of letters in trade law history. For many people, this debate came to lie at the heart of the trade and environment relationship. The vociferousness of the debate over PPMs has eased considerably in recent years, but its importance remains as high as ever.

A process or production method is the way in which a product is made. Many products go through a number of stages and, therefore, a number of PPMs, before they are ready for market. For example, traditional paper-making requires trees to be grown and harvested, the wood to be processed, the pulp often to be bleached, and so on. Other paper may be made from post-consumer waste, or without chlorine—processes arguably involving less environmental impact. The various processes will have different sorts of environmental impacts—on biodiversity, on forest-based streams and wildlife, on human health from chemical pollution of waterways, or in terms of air pollution and energy use.

Some pre-WTO trade law cases developed a technical distinction between a product-related PPM and a non-product-related PPM (see Box 5-1). Throughout this book, the term PPMs will refer to non-product-related PPMs, more or less the accepted shorthand in general discourse.

Box 5-1: Product- and non-product-related PPMs

The distinction between product-related PPMs and non-product-related PPMs may seem like nitpicking, but it is important to understand, since the two have been treated somewhat differently under trade law.

The distinction rests on how the PPM affects the final product. Consider two products—say two rolls of newsprint. One is produced using 50 per cent recycled content, and the other is produced from 100 per cent virgin fibre. These are two very different PPMs. But the key question is whether the final product has different qualities that would cause it to be treated differently in its use, handling or disposal. If the recycled newsprint performs in every sense the same as the virgin-content product, then the recycled-content process is a *non-product-related* PPM, since it has a negligible impact on the final product.

Take, for another example, two apples—one produced organically and one produced with the use of pesticides, some of which are still left on the product as a residue. Again we have two very different PPMs. But in this case, the difference will cause us to have to handle and use (but probably not dispose of) the products differently. Some people might want to peel the chemically treated apple, and border authorities will inspect the levels of pesticide residue to see that they meet health regulations. The organic apple may be subject to tighter border checks aimed at preventing the spread of invasive pests. The different PPMs in this case make a difference to the final product, and they would thus be treated as *product-related* PPMs.

Trade law does not question the right of countries to discriminate based on product-related PPMs. There are rules about the process and extent of discrimination, of course—the SPS Agreement, for example, has a preference for international standards when setting restrictions on pesticide residue levels—but the principle of discrimination within certain limits is accepted.

Non-product-related PPMs, on the other hand, had come to be seen in the late 1980s and early 1990s as a different matter. It was argued that how products were made (provided the finished products were indistinguishable) did not make

products different from one another. In trade law terms, they would be considered “like products” (see the in-depth discussion in Section 3.5.1). As such, countries could not treat them differently, and even trade law exceptions, such as GATT’s Article XX, might not excuse such discriminatory treatment.

From an environmental perspective, it makes little sense to ignore how a product is produced. The way a product is produced is one of the three central questions for an environmental manager: how is it made, how is it used and how is it disposed of? Domestic environmental regulations on PPMs abound—factories are told how much pollution they may emit, forest products companies are told how and where they may harvest trees, mining companies are told how they must treat their waste, and how they must restore their sites after mine closure. From this perspective, it makes sense to also be able to discriminate at the border between otherwise like goods that were produced in clean and dirty ways.

The state of trade law on this point appears to have changed. The last two pre-WTO GATT panels to rule on PPM-based discrimination upheld the idea that PPMs could not be used to distinguish among products. They ruled that the Article XX exceptions could not be used to save the measures in question, since those exceptions were, in their view, designed only to be used to protect the environment of the states taking the measures—not the environment of the exporting state where the environmental damage occurred. However, in the landmark WTO *U.S.-Shrimp-Turtle* case (see Box 3-2), the Appellate Body seems to have adopted a new approach, and ruled that measures addressed at a foreign PPM (i.e., how shrimp are produced) could be justified under Article XX. The Appellate Body did require that there be an “environmental nexus” between the state taking the measure and the issue the measure addressed. Migratory species protection, for example, might be a shared concern of the exporting and importing country, as might protection of shared air and water resources, climate stabilization, and so on. The Appellate Body also put in place the other controls and limits discussed in Section 3.5.1 above, on the use of GATT’s Article XX.

As a result of these developments, the product-non-product distinction has lost much, but not all, of its legal impact. It remains relevant, since PPM-based measures have to meet a number of criteria not applicable to product-based measures. But in the final analysis, PPM-based measures are not automatically considered inconsistent with trade law.

If this is the state of the law, what are the policy concerns behind the debate? There are a number of reasons for the controversy that dogs the PPMs issue.

In practice, discrimination based on PPMs presents some difficulties for the trading system. Regulating PPMs gives governments greater opportunity in

their struggle to protect their industries unfairly against foreign competition. Motivated not by environmental but by economic considerations, a government might conduct an inventory of the environmentally preferable PPMs used by its domestic industries, and make new regulations penalizing those producers (that is, foreigners) not using them. The available defence against such actions lies in the chapeau of Article XX, which tries to weed out protectionist discrimination, and in the absolute standards established by the TBT and SPS Agreements.

From a purely environmental perspective, a widespread use of measures to address foreign PPMs might result in environmental improvement, if only in certain selected industries. But there are two fears that argue against such widespread use. The first is that the standards thus imposed might be environmentally inappropriate for some foreign competitors. For example, a country where water scarcity is a major issue might enact laws discriminating against products produced in ways that waste water. But this would force exporters in water-rich countries to follow standards that are not relevant to their local environmental conditions, or risk losing market access.

The second is a related argument from some developing countries that argue that their social priorities differ from those of developed countries. They may, for example, be more concerned about clean water as an environmental issue than with global warming. Or they may be more concerned about infrastructure, education and health care than about any environmental issue. If so, the argument goes, it is unfair for developed countries to discriminate against the exports of developing countries based on environmental issues that are not high on these countries' agendas, forcing them to either adopt rich country environmental priorities or suffer a loss of wealth-creating exports. Many developing countries worry that if the WTO continues to allow PPM-based discrimination on environmental grounds, it will also be forced to allow it on social grounds, such as human rights, labour standards and so on, increasing the scope of the threat to their exports.

Another part of this argument is that the now-rich countries became wealthy by burning a lot of fossil fuels, cutting down most of their forests, and otherwise cashing in on national and global environmental resources. Now that the wealth they have gained allows them to maintain high environmental standards, it is hypocritical to forbid developing countries to follow the same path. It is argued that, at a minimum, demands to maintain high environmental standards should be accompanied by technical and financial assistance and other forms of capacity building. In the *U.S.-Shrimp-Turtle* case the Appellate Body agreed with this last point, making such assistance a condition for Article XX to "save" a U.S. measure covering PPMs in developing country exports. The ruling established other conditions as well, in effect placing the use of

PPM-based measures into a legal framework that recognizes the legitimate fears of developing country exporters.

Finally, there is a sovereignty argument. If the environmental damage in question is purely local, then it is really the purview of the exporting, not the importing, government. This argument weakens, however, if the environmental damage in question is not purely local—if it involves polluting shared waters or airstreams, depleting populations of species that migrate across borders, or damaging the atmosphere. Here, the need for international co-operation is obvious.

MEAs are one such form of co-operation, and are the most commonly recommended way to prevent PPM-based environment and trade conflicts. That is, countries should collectively agree to either harmonize standards or to live with a negotiated menu of different national standards. As we have seen, many such agreements are in force today. Such agreements, however, take many years to negotiate and even more to take full effect—a problem, if the environmental issue in question is urgent. As well, some subject areas may not be ripe for agreement; countries often disagree on the need to regulate or the mechanisms for doing so. These factors may make the international option unattractive for addressing issues of great importance to some countries. Nonetheless, the most current Appellate Body ruling on this issue makes good faith negotiations a prerequisite for the unilateral use of PPM-based trade measures—an obligation that binds both the demanding country (importer) and potential “target” countries (exporters).

5.2 Environmental standards and competitiveness

In developed countries, a key concern of the environmental community is the prospect of a “race to the bottom,” where countries try to lure investment by lowering or not enforcing their domestic environmental standards. This is one version of the “pollution haven” argument—that under free trade firms will migrate to places where environmental regulations are less stringent and where using “dirty” PPMs will give them a competitive edge.

Researchers have long searched for evidence of pollution havens, and have found little. When relocating, environmental costs are only one of a broad number of factors—including infrastructure, access to inputs, wage costs, labour productivity and political risk—a firm must take into account. Average environmental control costs run around two to three per cent of total costs, though in certain sectors (for example, aluminum smelting, intensive livestock operations or cement manufacturing) it can run much higher.

The threat of relocation by firms may be more of an issue than actual relocation. The threat, whether made explicitly or just anticipated, may create a “regulatory chill” effect—a climate where government regulators balk at strength-

ening their environmental laws for fear of driving away existing business, or losing potential business investment. If a number of governments simultaneously feel this sort of pressure, the global community may be, as one analyst puts it, “stuck in the mud”—unable to strengthen regulations at a rate that will ensure environmental sustainability.

By contrast, in some cases trade and competition may actually cause environmental standards to improve. If high standards are adopted by an important enough market, the effect can be to “export” those standards to countries and producers that are linked by trade to that market. This is sometimes called the “California effect,” after the large U.S. state that tends to lead national and global markets with tough environmental standards.

Developing countries have a different set of issues related to environmental standards and competitiveness. First, environmental standards in their export markets are not always known. The standard-setting country may not give enough details about the measures in question (e.g., what alternative methods are available and acceptable), or may not give enough advance warning to allow producers to change production methods, or the exporting country authorities may not effectively spread the word among exporting firms—a challenge for resource-strapped Ministries especially where there are many small-scale producers. Second, even where the standards are known, they may be unduly difficult to meet. They may be set at levels far above those internationally agreed. Or they may be reasonable, but the complex testing facilities to ensure compliance do not exist in the exporting country, meaning relying on expensive field trips from foreign verifiers (a particular problem for less developed countries). Or, where there are national verifiers, they may not be recognized by the importing country as adequate to do the job of verification. Getting such recognition, or accreditation, is often a prohibitively costly proposition, even where the verifier is technically up to the task. This constellation of problems as a whole means that for many developing country exporters environmental standards are in themselves a competitiveness issue; they can become an obstacle to accessing export markets.

That said, the standards in question are often legitimate standards, concerned with environmental protection rather than protectionism. The WTO’s TBT and SPS Agreements set out rules for standard-setting to try to prevent standards from being unduly burdensome for exporters (see Sections 3.5.2 and 3.5.3). For example, the TBT Agreement mandates advance notice and a comment period for new regulations. It also obliges developed countries to assist developing country exporters harmed by their regulations, though this provision has never been exercised.

Most environmental standards of concern to developing country exporters, though, are not covered by WTO rules, since they are set by purchasing firms

rather than by governments. While most purchasers will work with suppliers to help them meet new environmental standards, many will not, and they are under no legal obligation to do so.

Concerns about competitiveness also underlie the problems that many commodities exporters face in trying to implement appropriate environmental policies. Such policies would help internalize the external environmental costs of production and would, therefore, often raise the price of the final good. For most commodities, even a slight rise in price may be enough to send buyers to one of the many competitors. And commodities, unlike consumer goods or manufactures, usually cannot create niche markets for greener goods. Buyers of copper, for example, want the cheapest copper that meets their technical specifications, and they typically do not care about the pollution created in its manufacture. This is a serious problem, given the importance of commodity exports to many developing nation economies, and the wide-ranging environmental consequences of most commodity production.

5.3 Environmental standards, science and precaution

Science is the starting point of all environmental policy. Without science we have no way of knowing what is happening in the natural environment, beyond what our senses tell us. Science makes the environment speak, and all policy-making is based on interests that have voices. But the scientific method does not always generate precise information for policy-making—scientific knowledge is rarely either certain or complete. And even where science is quite certain—for example, in its assertion that certain gases in the atmosphere trap heat and can change the planet’s climate—the implications for policy can be obscure.

The tension between science and policy is a constant theme of environmental policy in general, and of international environmental regimes in particular. All of these regimes have some method of reviewing new scientific evidence, often through their Conference of Parties, sometimes through their own subsidiary bodies, or, in exceptional cases such as the climate regime, through specially created independent organizations such as the Intergovernmental Panel on Climate Change.

The precautionary approach, described in Chapter 3, counsels that environmental measures must sometimes be adopted even when scientific information is incomplete. It has proven difficult to implement since it requires that policy-makers exercise some discretion. For this reason, it is important to develop criteria governing its application. Among other things, these criteria would address a balance of two important considerations: the scale of possible damage, and the cost of action—or of inaction.

As the scale of possible damage increases, so does the need to act with precaution. Where the potential damage is obvious, as with stratospheric ozone depletion, the need for action becomes clearer and less contentious. Where the potential is less obvious, precautionary action can become extremely contentious, as affected stakeholders seek to protect their interests. Indeed, it is normal to expect controversy over action on such issues as genetically modified organisms, where the science is still unclear and is evolving rapidly.

Cost is the other criterion to consider in applying the precautionary approach. Resources are limited so governments must make tough decisions about where to apply them. Clearly, precautionary actions that are without net economic cost should be taken. But since such actions may involve losses in one area, even though they are counterbalanced by gains in another, they may still attract vigorous opposition from the losers. Inaction may also incur costs—the costs of environmental damage unchecked—and these can be enormous. It is important that these be part of the calculations, where they will weigh against the costs of action.

While the precautionary approach is well established in domestic and international environmental regimes, it takes on new dimensions when it is used as the basis for domestic standards on traded goods. Exporters can at times be frustrated by what they see as an overly cautious approach by importing OECD countries—an approach that either raises their production costs or outright blocks their market access. There is tension between the trade regime, which seeks to limit discretion that might be unfairly used for protectionism, and a principle that grants a great deal of discretion to national-level regulators. The challenge is to find a way to limit the potential for protectionism without being so heavy-handed as to impede legitimate environmental rule-making.

The SPS Agreement has some basic allowances for precautionary action. It permits temporary measures where a risk is perceived but a member needs more time to derive greater certainty. Moreover, Appellate Body rulings have confirmed that scientific certainty—or even a majority view of the scientific community—is not a prerequisite to enacting precautionary measures. However, there are a number of stringent requirements for countries adopting such measures. In setting the standards, members must try to minimize negative trade impacts. The standards used should not distort trade by treating similar levels of risk differently without good cause. The burden of proof in a dispute lies for the most part with the regulating country. As well, the measures should be supported by a risk assessment—a formal scientific process that tries to tally the known and possible environmental risks. Unlike many guidelines for risk assessment, the SPS asks that it should among other things consider the economic costs of the measures in question.

The SPS description of the mandated risk assessment is rather rudimentary, but fortunately it has been supplemented in key areas by more detailed agreements at the international level. The Cartagena Protocol, for example, gives much more detailed guidance on what constitutes a good risk assessment for certain genetically modified organisms. And the international standard-setting body on food safety—the Codex Alimentarius—has also agreed to principles for risk assessments of genetically modified food. It is likely, but not certain, that these definitions of risk assessment will be used as guidance in WTO disputes over precautionary measures, particularly given the deference in the SPS to “risk assessment techniques developed by the relevant international organizations.”

5.4 Ecolabelling and environmental management certification programs

Voluntary environmental labels (or ecolabels) and environmental management (EM) certification programs are touted as a possible solution to some of the challenges associated with PPMs, discussed earlier. That is, rather than governments dictating by law which PPMs are acceptable, consumers can decide for themselves, informed by labels and certifications, and purchase accordingly. Unlike government laws and regulations, these are voluntary tools, providing information that helps consumers make informed choices. Ecolabels provide information about a specific product, whereas EM certification schemes communicate something about the companies (or parts thereof) that produce the products. This section first defines the two instruments, and then looks at how they might interact with the rules of international trade.

5.4.1 Ecolabels

Ecolabels tell us about the environmental impacts of producing or using a product or service. Most ecolabels are voluntary—products or services are not forced to use the label—but in some markets they are becoming an important competitive factor. There are many different labelling programs, run by governments, private companies and non-governmental organizations, but all boil down to three basic types of labels (see Box 5-2). The Geneva-based International Organization for Standardization (ISO) has established definitions and principles for developing each type.

Box 5-2: Ecolabels according to the ISO: The three types

Type I (ISO 14024) labels compare products with others within the same category, awarding labels to those that are environmentally preferable through their whole life cycle. The criteria are set by an independent body and monitored through a certification, or auditing, process. Ranking products in this way requires tough judgement calls: consider two otherwise identical products, one air polluting, another water polluting. Which is superior?

Type II (ISO 14021) labels are environmental claims made about goods by their manufacturers, importers or distributors. They are not independently verified, do not use pre-determined and accepted criteria for reference, and are arguably the least informative of the three types of environmental labels. A label claiming a product to be “biodegradable,” without defining the term, is a Type II label.

Type III (ISO 14025) labels list a menu of a product’s environmental impacts throughout its life cycle. They are similar to nutrition labels on food products that detail fat, sugar or vitamin contents. The information categories can be set by industrial sector or by independent bodies. Unlike Type I labels, they do not judge products, leaving that task to consumers. Critics question whether the average consumer has the time and knowledge to judge whether, for example, emissions of sulphur are more threatening than emissions of cadmium.

5.4.2 Environmental management certification

EM certification schemes assess a company’s overall handling of environmental issues. Unlike ecolabels, these schemes do not imply anything about the environmental impacts of companies’ products. Rather, they require companies to follow preset environmental principles and guidelines as they conduct business. Although some are more rigid than others, the requirements in such voluntary schemes are flexible and open to interpretation, and are generally less contentious than ecolabelling schemes.

The ISO 14001 environmental management system standard is one such scheme at the international level. ISO 14001 helps companies track, understand and improve their environmental management. Unlike sector-specific certifications, ISO 14001 is extremely flexible and does not require specific principles or guidelines to be followed. Companies set their own objectives and can “self-certify” compliance with the standard, but many seek independ-

ent verification. Critics maintain that ISO 14001 says nothing about a company's environmental performance, addressing only the effectiveness of its environmental management system. ISO 14001 can be useful, if properly implemented, in that it prompts companies to acknowledge and address environmental issues.

Somewhere between an ecolabel and EM certification is a new class of sector-specific environmental certifications, such as those that have been developed for sustainable practices in the forestry, fisheries, organic agriculture and tourism sectors. The Forest Stewardship Council (FSC), for example, has created a widely-used standard for sustainably harvested forestry products, and has persuaded several big buyers to source only FSC-certified stock.

Under such programs, a company typically obtains certification if an independent auditor finds that it satisfies principles and criteria set out in the scheme. An industry focus allows the scheme's guidance to be more specific than a generic system like ISO 14001. Certification typically allows the company to place what amounts to an ecolabel on its product, certifying compliance. Because consumers are not only interested in environmental issues, many certification programs have begun to integrate a broader range of sustainable development issues including labour standards and human rights. Many of these certification systems are now being spread through ethical public and private procurement policies or because of investor interest, rather than through end-consumer demand.

5.4.3 Ecolabels, EM certification and international trade

As consumers become more aware of environmental issues, and as governments and companies feel pressure to integrate sustainability criteria into their procurement and investment policies, the demand grows for green goods and green corporate behaviour. Ecolabels and EM certification programs help by providing the information needed to make environmentally-sound purchasing decisions. Voluntary ecolabels are frequently cited as a less trade-restrictive way to achieve environmental objectives as compared to mandatory standards (technical regulations) or bans. To the extent that they are widely used, both ecolabels and EM should create environmental benefits. But they may also create problems, both of principle and of process, at the international level.

The problem of principle is the same as that described earlier for PPMs and applies mostly to ecolabels or EM certification programs that grant an ecolabel, since they are often a means for buyers to discriminate between products on the basis of how they are produced. Most ecolabelling schemes are national programs, developed for domestic economic and environmental realities, and consider domestic environmental preferences. The criteria developed by this process may be irrelevant to the priorities of other countries. For example, for-

est conservation is a priority for some countries—particularly those where regrowth is slow—and consumers may, therefore, want an ecolabel to be awarded for the recycled content in paper. But this will disqualify paper from other countries where the climate allows for profitable sustainably managed forest plantations, whose product content is 100 per cent virgin pulp. Of course, this problem is less vexing than in the case of mandatory standards, since most ecolabels and EM schemes are voluntary.

The problem of process relates to the procedures that foreign producers must follow to get awarded an ecolabel or a certification. Testing procedures may require technologies, infrastructure and expertise that are not available in some countries, particularly in least-developed countries. Even if such testing can be done, it will involve much higher costs than those incurred by developed country producers, or producers in larger developing countries. For example, the technology needed to test for genetically modified organisms in food products is very expensive. The market opportunities offered by an ecolabel that notes a product is GMO-free might, therefore, be more limited for exporters from countries with no testing facilities.

Another process concern relates to setting international standards for certification and developing ecolabels by bodies such as the ISO. Although these efforts are acknowledged as helping make the processes more open, and as fostering mutual recognition of claims among countries, they are also extremely expensive and time-consuming for those delegates involved. This leads to few developing countries and civil society actors being represented. As well, the process frequently lacks transparency. As a result, some fear that international standardizing bodies may be just more fora where developed countries will act strategically to protect their dominant market positions. One reaction to this has been the establishment of non-governmental bodies to develop ecolabels and certification programs that are more sensitive to civil society and developing country priorities. The International Social and Environmental Labelling (ISEAL) Alliance is an association of some of the main non-governmental bodies developing certification programs. The Global Ecolabelling Network is an association of the main national ecolabelling programs.

Taking up an issue that has long been discussed in the CTE, but on which there has been little action to date, the Doha Round of WTO Negotiations included an agenda item on ecolabels. But many experts question the WTO's capacity for positive contribution, since many ecolabels and EM certification schemes are developed by non-governmental bodies and are being used by private corporate buyers rather than by government regulators. Many argue that the WTO has no jurisdiction over either group, though whether its rules cover non-governmental labels is a matter of ongoing debate.

5.5 WTO and MEAs

MEAs have long been held out as a concrete solution to potential trade and environment conflicts. For example, as trade in genetically modified organisms may have environmental consequences, the ideal path is for the affected countries (both importers and exporters) to come together to negotiate how such trade may be handled: what measures may be taken at the national level for environmental protection, what measures should be taken by exporters to help in those efforts, and so on. The Cartagena Protocol, to continue with this example, is a multilateral solution to a multilateral problem, and avoids unilateral approaches that might be unbalanced in the interests of either trade or environmental concerns.

Given the value of MEAs in this respect, it has also long been understood that the multilateral system of trade rules will need to find some accommodation with MEAs—a separate body of international law that sometimes addresses the same issues. According to Agenda 21, the WSSD Plan of Implementation, and numerous WTO declarations, the multilateral trading system and multilateral environmental agreements (MEAs) should be mutually supportive. The weight of those declarations stands in contrast to the slight progress actually made by trade negotiators in examining the issue; it has been on the agenda of the Committee on Trade and Environment since its inception in 1995 with no clear result. The 2001 Doha Declaration mandated work on this issue (but only on a narrowly-defined slice of the whole).

The trade-MEA relationship has three distinct components. One is the impact MEAs may have on trade, directly or indirectly. For example, the Montreal Protocol on Ozone Depleting Substances directly stops trade in certain types of products. It also has forced changes in production processes that previously used ozone-depleting substances, in effect excluding from trade products produced in the old ways. This type of trade-impact, discussed in Section 2.4.4, is a natural result of banning or restricting environmentally damaging products or processes and is, in fact, the central purpose of those measures.

Another component to the relationship is the potential for trade liberalization to affect the subject matter of MEAs. For example, liberalizing trade in computer chips might have repercussions for the objectives of the Montreal Protocol, if it increases the production of chips in countries using ozone-depleting substances as cleaning solvents in chip production.

This section, however, is concerned with a third type of relationship: the legal and policy relationship between the body of law represented in the MEAs and the body of law represented in trade and investment agreements.

Of the 200 or so MEAs currently in existence, some 20 incorporate trade-related measures to help achieve their goals. Although this is a relatively small

number of MEAs, they are some of the most prominent (see Section 2.4.2), and trade-related provisions are an integral part of the range of options negotiators consider in addressing global environmental issues. Section 2.4.4 discusses in detail why such measures are used, but one of the major uses is to control trade itself, where trade is perceived to contribute directly to the environmental damage that the convention seeks to address, and where such measures would be more effective than policing domestic environmental measures. CITES, which controls trade in endangered species trade, and the Basel Convention, controlling trade in hazardous waste, are good examples.

Another use is to improve the effectiveness of an agreement. They can provide an additional incentive to join and adhere to the MEA by restricting (often barring) non-parties from trading in restricted goods with parties (though there are usually exceptions for non-Parties with legislation that meets the MEA standards of protection). The Montreal Protocol, for example, bans trade with non-parties in ozone-depleting substances and products containing them, a provision that many observers agree was crucial to the wide international support the Protocol has achieved. Without such measures, the agreement would be easily scuttled by non-parties increasing production of the restricted goods and shipping them to the parties that have restricted their own production—a perverse result both environmentally and economically.

The problem is that WTO rules may conflict with such measures. Chapter 3 describes the obligations of WTO members to observe the most-favoured nation and national-treatment principles, as well as provisions on eliminating quantitative restrictions (Articles I, III and XI). An environmental agreement that says parties can use trade restrictions against some countries (non-parties) but not against others (parties) could be seen as potentially violating all three articles. It discriminates between otherwise “like” products based on their country of origin, it imposes quantitative restrictions, and it may treat imported goods differently from “like” domestic goods.

Such trade-restricting measures might be used in two ways. First, a party could use them against another party (for example, the prior informed consent system of the Rotterdam Convention is used just among parties to the Convention). Most analysts argue that this is not a problem, since both countries have voluntarily agreed to be bound by the MEA’s rules, including the use of trade-related provisions. This may be true where the trade-related provisions in question are explicitly mandated in the agreement, but problems may arise where the agreement just spells out objectives, and leaves it to the parties to make domestic laws to achieve them. Parties to the Kyoto Protocol, for example, may fulfill their obligations (spelled out in the Protocol) to lower greenhouse gas emissions by any number of trade-restrictive measures (not spelled out). Although WTO members have expressed hope that disputes between

parties might be settled within the MEAs themselves, a party complaining about the use of such trade-related provisions could choose to take its case to the WTO.

Second, a party could use trade-related provisions against a non-party, where both are WTO members. Here, the non-party has *not* voluntarily agreed to be subjected to the MEA's trade-related provisions. As with party-to-party measures the trade-restricting party may in principle be violating the non-party's rights under WTO rules, but here the non-party might take the matter to the WTO even if the measures are spelled out specifically in the MEA.

No trade measure associated with an MEA has ever been subject to a trade law challenge. But many observers continue to be concerned this may happen, with highly undesirable results. Two factors helped increase the concerns in this area during the Uruguay Round negotiations. The first was some GATT (unadopted) panel decisions (Tuna-Dolphin I and II in particular) that ruled trade law had to be interpreted and applied strictly within the language of trade treaties, rejecting the need to reference other norms of international law, such as MEAs.

These cases fueled the second underlying dynamic: the true sense of conflict between *proponents* of a strong trade regime on the one hand and a strong environmental regime on the other. The debate often manifested as a choice of supremacy of one regime over the other. Together, these two elements generated a conflict-based dynamic at a crucial time in the debate on environment and trade.

These decade-old dynamics have, however, since changed. Most importantly, the Appellate Body, in a series of decisions, has unequivocally rejected the inward-looking approach of the pre-WTO GATT panels, and held that trade law must be interpreted in the light of public international law more broadly. On more than one occasion the Appellate Body has used international environmental agreements and declarations to help it understand and interpret the various rights and obligations found in the trade agreements. In doing so, the Appellate Body has expressly sought mutually supportive interpretations and applications, in practice, of both sources of international law, putting into practice the widely-issued calls for mutual supportiveness.

As well, a number of agreements of specific concern to developing countries have emerged in the last fifteen years that use trade-related provisions to protect their environmental interests. Combined with the growing sense of the capacity to generate mutually supportive agreements, this has eased some of the concern over MEAs being a new form of green protectionism.

Finally, there have been a number of successful demonstrations that mutual supportiveness *can* be achieved in international negotiations. Although a num-

ber of MEAs over the 1990s had heated negotiations centred on the old dynamic of conflict and supremacy, in some recent cases the trade and environment communities seem to have worked out a way forward. A good example is the Cartagena Protocol on Biosafety, which describes the steps states may take to regulate trade in genetically modified organisms—a “hot” trade law issue. The preamble to the Protocol contains three paragraphs that have a compelling result: neither trade law nor the Protocol has a hierarchical position above the other *and*, where there is overlap, the interpretation of each should be done in a manner striving to find consistency between both. While some complain that this result is inconclusive, others argue that it may cause the Appellate Body in the event of a dispute to use the Cartagena Protocol to help interpret trade law—a truly mutually supportive result.

Another negotiated approach to finding mutual supportiveness is to “carve out” certain MEAs in trade law. In NAFTA, for example, there is a provision whereby the rights under certain specified MEAs will prevail over the NAFTA obligations, as long as the NAFTA parties are party to the MEA, and the measures taken are the least trade-restrictive available. Only three subsequent bilateral trade agreements (Canada-Chile, Canada-Costa Rica and Mexico-Chile) follow this example.

Both of these approaches show that negotiators have viable options to address the trade law-MEA relationship. Still, some argue that the current balance and synergy over-relies on the arguments of the WTO Appellate Body, the opinions of which are powerful guides to, but not bidding on, future panels.

This concern motivated the inclusion of the relationship between the WTO Agreements and MEAs as an element of the Doha negotiating agenda. However, the Doha mandate on MEAs is viewed by some as hamstrung by its narrow scope; it is only concerned with the use of what the WTO has termed “specific trade obligations” in a currently unspecified set of MEAs and, even then, only between parties to the MEA. In other words, only the least controversial (some would say *uncontroversial*) aspects of the relationship are being discussed. The negotiating mandate, in a passage that even further limits prospects for progress in these discussions, requires that the negotiations do not result in changes to the existing balance of rights and responsibilities of the WTO members.

Ironically, there is concern that Doha’s narrow mandate on this issue might actually have *damaging* impacts on the integrity of the international environmental regimes in at least two ways. It might involve the renegotiation of carefully balanced sets of measures, including trade measures, in MEAs by WTO Members that may not even be party to the MEA in question, perhaps to the detriment of MEA Parties that are not Members of the WTO. More fundamentally, it might conclude by blessing specified types of trade measures only for a narrowly-defined set of MEAs, which would prejudice the GATT-legal-

ity of all other trade measures in present and future MEAs. Recognizing the risks, some countries have begun suggesting that the status quo—considering developments from the Appellate Body—may be sufficient to deal with the problems of potential conflict.

The end result of the Doha MEA negotiation is difficult to predict. However, it is clear that this negotiation, and other debates on this issue, are being impacted by the changed underlying dynamics that have generated practical and legal approaches to operationalizing the much-lauded concept of mutual supportiveness.

5.6 Intellectual property rights

Classical economics talks about three factors of production: land, labor and capital. In recent decades, however, another factor has become increasingly important: knowledge. Knowledge is fundamental for assuring competitiveness, technological advancement, and provision of goods and services needed by society. But knowledge is not a static factor; it is constantly developed and improved through innovation and creativity.

Intellectual property rights (IPRs) have traditionally been a means to foster that sort of innovation and creativity. They grant an innovator or creator the exclusive ability to control the use of their innovation and creation for a fixed period of time. During that time, the intellectual property rights holder will usually try to market and sell the idea, seeking to recoup his or her investment in research and development and reward his or her innovative efforts.

Intellectual property rights strike a balance between the welfare of the innovator or creator, whose efforts deserve compensation, and the welfare of society at large, which would benefit by having unlimited access to the innovation or creation. For sustainable development, finding the proper balance point is crucial. Innovations, whether in energy efficiency, new medicines or improved agricultural varieties, are at the heart of sustainable development, but they do little good unless they are widely disseminated.

The WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an international treaty that sets minimum standards on the laws used by national governments to protect IPRs. The TRIPS Agreement covers a number of types of IPRs (see Box 5-3). Of these, patents are the most important from an environmental perspective. Its objectives, as laid out in Article 7, reaffirm that the purpose of IPRs is the kind of balance suggested above. It states that IPRs should contribute to:

- Technological innovation;
- Transfer and dissemination of technology; and

- The mutual advantage of technology users and producers in a manner that fosters social and economic welfare.

Box 5-3: Types of intellectual property rights

IPRs are legally granted at the national level, and each country has its own definitions of the various types of rights. The following are rough indicators of the types of IPRs found in most national legislation.

Patents: inventions of new products/processes

Copyrights: creations/works

Geographical indications: marks that identify goods as originating in a particular territory

Trademarks: commercial signs

Industrial designs: aesthetic features of a product

Integrated circuits: layout designs of integrated circuits

Undisclosed information: classified information of commercial value

The TRIPS Agreement is unique among the WTO rules in that it is *positively proscriptive*. That is, most other WTO rules describe what countries should not do, whereas the TRIPS Agreement describes what countries *should* do. As a result, implementing it requires extensive legislative and administrative reforms at the national level. The Agreement is also unique in that it deals with private rights—the rights of innovators and creators. Other WTO law deals with the rights and obligations of *governments*.

The Agreement reflects a high level of standards for protecting intellectual property. It was, in fact, aimed at globally enforcing the types of high standards that existed in most developed countries at the time, but in few developing countries.

How do strong IPRs, such as embodied in the TRIPS Agreement, affect the balance between private and public interests? On the plus side, they may help ensure that more innovation and investment will take place. Without the guarantee of such protection, who would spend millions developing, for example, new software, drugs, or environmentally-friendly technologies which could then be copied by others and distributed at minimal costs? (Intellectual property tends to have very high costs of development, but low costs of reproduction once developed.)

Strong intellectual property rights may also help new technologies—the products of innovation—get disseminated. Technology transfer is usually a commercial venture, and happens through a number of means:

- Direct investment (for example, building a factory);
- Joint ventures with domestic firms;
- Wholly owned subsidiaries;
- Licensing (selling the rights to use the technology);
- Training and information exchanges; and
- Sales and management contracts.

Innovators will be more comfortable using these mechanisms in countries that are obliged to enforce strong protection of intellectual property rights. That obligation assures them that their innovations will not be freely pirated. So strong intellectual property rights can also increase the willingness of firms to disseminate their technologies in countries that adopt them.

On the negative side, TRIPS-style protection of IPRs can have a number of undesirable effects. First, if it is too strong, it tilts the balance too far toward the innovator, by making access difficult, raising prices, limiting follow-on innovation, and impeding access to information necessary to reproduce inventions. Many developing countries, and environment and development NGOs, argue that TRIPS' long terms of protection—i.e., 20 years for patents—over-reward the IPR holders, and punish the public by keeping the protected innovation or creation too expensive for too long. Overly strong protection may thus slow down the spread of new technologies. Improperly applied, it may also stifle innovation, in part by impeding research and development that seeks to use the patented material as the basis for new innovations. Section 5.6.2 on TRIPS and agriculture gives examples of how this might work. Finally, TRIPS-style protection may work against sustainable development objectives by making goods such as pharmaceuticals more costly and less accessible to the poor. Several developing countries, when implementing TRIPS, have had to dismantle domestic industries based on cheap copying of foreign-patented drugs, forcing up prices dramatically.

Recognizing the potential negative effects of granting IPRs, the TRIPS Agreement contains important exceptions and mechanisms to address public policy objectives. For example, TRIPS contains an exception whereby WTO members are not obliged to grant patents for products or processes where “the prevention within [national] territory of [their] commercial exploitation... is necessary to protect *ordre public* [law and order] or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the

environment.” Also, countries may exclude plants and animals from patentability (though in the case of plant varieties there must be some other system of protection in place—see the discussion in Section 5.6.2). There is also provision for governments granting the rights to use the subject matter of a patent without the patent holder’s authorization, though only in specific circumstances.

Perhaps the most important recognition of the tensions between broader policy goals and commercial protection plays out in the area of patents on pharmaceuticals. A long battle by developing countries produced, in an agreement that probably salvaged the Doha work program launch, the 2001 WTO Declaration on the TRIPS Agreement and Public Health. This agreement, specifically aimed at developing and least-developed countries, affirms that the TRIPS Agreement allows governments the flexibility to grant licenses to non-patent holders in event of public health crises and other national emergencies—an action known as compulsory licensing. Brazil has used the threat of compulsory licensing to force pharmaceutical manufacturers to lower prices for drugs used by its national program to combat HIV/AIDS.

But many least-developed countries have no domestic pharmaceutical manufacturers to which they could grant such licenses. A subsequent WTO agreement in 2003 offers a limited possibility for such countries to import drugs cheaply manufactured under compulsory license in third countries.

Many of these exceptions and mechanisms are being steadily eroded by bilateral and regional trade agreements that explicitly strengthen IPR protection. So while there may be flexibility at the multilateral level, free trade agreement partners have agreed among themselves to pursue a less flexible path. These negotiations are often the most fractious of the entire agreement and typically pit developed country *demandeurs* against reluctant developing country partners.

Some bilateral and regional agreements since the mid-1990s have gone further to incorporate new “WTO-plus” provisions that strengthen IPRs over and above the standards of the TRIPS Agreement. The most worrying, from a sustainable development perspective, incorporate provisions such as data exclusivity (withholding the test data used in drug approvals so that it cannot be used by generic manufacturers after the patent expires), and allow “evergreening” (the re-registering of a patent if a new use for the drug is found). And they fail to include TRIPS-type flexibilities such as the ability to exclude plants and animals from patentability.

5.6.1 TRIPS, CBD and traditional knowledge

The relationship between the Convention on Biological Diversity (CBD) and the TRIPS Agreement has been the subject of passionate debate in the WTO. The Doha Declaration includes a mandate to examine the relationship

between the two agreements. Discussions have also been held in the CBD and the World Intellectual Property Organization (WIPO).

The CBD requires Parties to co-operate to ensure that patents and other IPRs “are supportive of and do not run counter to” its objectives, implicitly recognizing the potential space for conflict with certain features of the IPR system. The main potential problems stem from the CBD’s starting point: that Parties have sovereign control over their own genetic resources. As such, the CBD grants states the right to regulate and control access to genetic resources within their borders.

Those resources have immense and growing value, and are keenly sought after by a range of commercial interests. They provide the foundation for new products such as pharmaceuticals and herbal medicines, and for technological applications in biotechnology, agriculture, medicine and other areas. They can also provide new genetic material for plant breeders, allowing them to confer desired traits such as pest and drought resistance to crop plants. In one case alone, incorporating disease resistance from a Latin American corn variety spared U.S. corn crops from devastation by corn blight, saving the industry an estimated \$6 billion.

Genetic resources may be in the form of plant varieties with valuable genetic codes, or they may be traditional knowledge and “informal” innovations. An example of traditional knowledge is the oral history held by an indigenous community of the herbs and plants that have medicinal properties—information of great value to pharmaceutical researchers searching for new drugs.

Among the basic “rules of engagement” spelled out by the CBD is that any access to genetic resources should be on mutually agreeable terms, and subject to prior informed consent of the host state. As well, each Party is to set up rules to ensure that a country providing genetic resources gets an equitable share of any benefits such as, for example, revenues from commercialization of a new drug. This would mean ensuring that patent applications are not made on the basis of “pirated” genetic material—material obtained in violation of the rules of engagement. As such, a number of developing countries have argued in the TRIPS negotiations for a new provision in the Agreement requiring patent applicants to disclose the origin of any genetic resources or traditional knowledge used in the subject matter, and/or to demonstrate that their appropriation of the resources or knowledge were done with the kind of prior informed consent and benefit-sharing required in the CBD. This would improve integration of the objectives of the two bodies of law. But key developed countries have opposed such provisions.

TRIPS, however, does not require national intellectual property rights regimes to be identical. Individual countries have the right to adopt higher standards

than TRIPS requires, and they can address concerns related to the CBD by imposing requirements such as certification of origin. Countries can also create mechanisms within intellectual property rights law to achieve specific objectives, such as benefit-sharing. This type of legislation has been pro-pounded in different ways by countries such as the Philippines, the Andean Community (Bolivia, Colombia, Ecuador, Peru and Venezuela), Costa Rica, Panama, India, Brazil and Thailand. Of course, these sorts of higher standards will be ineffective if third countries, without such protection, grant patents based on pirated materials.

5.6.2 TRIPS and agriculture

There are a number of ways in which the TRIPS Agreement affects agriculture and sustainable development. One set of impacts arises from the economic incentives that are created by strong IPRs. Strengthening any system of intellectual property rights means, for the protected subject matter, greater potential profits from investments in research and development. In agriculture, this dynamic creates two troubling side-effects from a sustainable development perspective.

The first is that the increasing returns on investment have helped shape an industry structure where bigger is better. It is not unusual for companies to invest tens of millions of dollars to bring new products to market, but this magnitude of investment could not be made without the protection of some sort of IPRs. And since such investments are profitable, those firms capable of making them will prosper. This reality has led to a significant concentration of ownership in the seed industry, with those firms capable of very large investments increasingly buying out smaller firms to consolidate their market positions. One risk of such market concentration is higher prices for products based on intellectual property such as seeds, since there will be less price competition between the few remaining firms.

A second concern is the rapidly shrinking genetic diversity of cultivated species, as farmers switch from traditional varieties to new high-yield strains developed by professional breeders. Beginning decades ago in the Green Revolution, farmers began to turn away from traditional varieties and to adopt modern strains that promised better yields and better resistance to pests and disease. The result is a loss of an estimated 75 per cent of the diversity of planted crops in the last century, meaning a smaller pool to draw on when new forms of resistance are needed.

TRIPS-style intellectual property rights have been said to contribute to this decline—though they are only one of a host of factors—by giving better treatment to formal innovation than to informal innovation. Formal innovation is the type that is carried out in laboratories and test plots, with results that are

reproducible on a consistent basis. This type of innovation is covered by patents and, therefore, benefits from economic incentives for research and development. Informal innovation is innovation that is carried out by the actual user of the product or system. For example, farmers have traditionally created innovative new plant varieties by saving seed from previous crops, selecting and planting, generation after generation, those that perform best under their local conditions. The products of informal innovation are not protected under the TRIPS Agreement, which emphasizes conventional forms of intellectual property. By granting protection to formal innovators and not to informal innovators, TRIPS-style IPR protection can contribute to the abandonment of the diverse mix of planted crops in favour of modern strains, and contribute to a loss of biodiversity.

In Article 27.3(b), the TRIPS Agreement contains an exemption that allows WTO members to refuse to grant patents for plants and animals (other than micro-organisms). But if members wish to deny patents to plant varieties, they must protect them by some “effective *sui generis* regime”—a system specially designed for a certain type of intellectual property—or a combination of the two systems.

Using patents to protect plant varieties can have different effects. In some cases, they may spur innovation. But in others they may stifle it. Traditionally, innovation has been based on existing varieties which scientists used for improvements, and for which a breeders’ exemption (i.e., the right to use protected varieties in their research and claim ownership of the results) has been granted. Patents, however, do not provide for a breeders’ exemption, and researchers will have to pay for access to patented materials used in their research, if they are allowed access at all. Also, many firms engage in “patent stacking”—taking out patents for different aspects of a single innovation, forcing several royalty applications and payments. Finally, trends in patent applications allowing for broadly-defined patents based on plant characteristics, rather than on the genes that produced those characteristics, may discourage further research. Patents have been granted, for example, for such broad categories as sunflower seeds with high oleic acid content. To the extent that such a patent stifles innovative research into improved ways of producing high oleic acid sunflowers, strong intellectual property rights protection might even defeat one of its main avowed goals. The lesson is that balance is required in how intellectual property rights are formulated and applied.

A number of *sui generis* systems of protection are possible under Article 27.3(b). One of them, of which a number of countries are already members, is the *International Convention for the Protection of New Varieties of Plants* (UPOV Convention). Adopted in 1961 to protect breeders’ rights, and last amended in 1991, the UPOV Convention marked a philosophical shift away

from national sovereignty over biological materials as common heritage towards private ownership by the developer of a new variety. The thrust of the treaty was to offer strong protection to breeders of new plant varieties, giving them greater incentive to invest and innovate. Several developing countries have raised concerns over the Convention, arguing that:

- It has limited scope for the “breeders’ exemption”—the traditional free access of breeders to protected material for research purposes. And if the new variety is “essentially derived” from the original variety, the intellectual property rights must be shared with the original innovator.
- It has strong protection of breeders’ rights—the intellectual property rights of formal innovators—but no protection of farmers’ rights—the intellectual property rights of informal (typically poor) innovators.
- It places strict limitations on the farmers’ right to re-use, sell and exchange seeds. For poor farmers in developing countries accustomed to saving part of each crop to use as next year’s seed, these limitations can be a serious hardship.

As a result, some countries have developed or are developing their own *sui generis* systems in an effort to balance the breeders’ rights embodied in the patent system and UPOV with the rights of farmers to re-use, sell and exchange plant genetic resources as part of the common heritage of humankind.

This recognition is also embodied in the recently adopted *International Treaty for Plant Genetic Resources for Food and Agriculture* (2001), which includes explicit references to “farmers’ rights” to re-use, sell and exchange farm-saved seeds. The farmers’ rights concept also includes recognition that farmers conserve and enhance plant genetic resources, but the treaty stops short of granting IPRs to informal innovations. The Treaty establishes a multilateral system (MLS) of access and benefit-sharing for 64 of the world’s most important food and forage crops. Genetic material from these crops is freely available to all researchers, who must in turn provide a share of the benefits of any innovations they commercialize. While the details are not yet clear, the shared funds are supposed go toward such things as technology transfer and capacity building, primarily aimed at small farmers in developing countries.

5.7 Subsidies

Subsidies are one of the clearest areas of shared interest for the trade and environment communities. Both oppose so-called perverse subsidies—subsidies that are harmful to the environment and the economy. And both may be able to co-operate in order to bring about subsidies that benefit the environment without unduly distorting trade.

Depending on the definition (defining what is a subsidy is often the greatest challenge), perverse subsidies worldwide range from \$500 billion to \$1.5 trillion a year. They are a powerful force for environmental damage and economic inefficiency. At the environment-trade nexus, a number of sectors are of interest, with agriculture, forestry, energy, transportation and fisheries being the most obvious.

Environmentalists and advocates of free trade dislike perverse subsidies because they distort prices. From an environmental perspective, they artificially lower the costs of environmentally unsustainable business practices.

Subsidies in the fisheries sector, for example, lower the cost of fishing and lead to overexploitation of the resource—too many fishermen and too many boats chasing too few fish. In other sectors the story follows the same basic plot. Agriculture, energy production and transportation are all hard on the environment, and most of the environmental damage they entail is not built into the market price of the goods they produce. The consumer buying clothing, for example, is not paying for any of the environmental costs incurred in growing the cotton used. Subsidizing cotton growers may, therefore, increase environmental damage by increasing their scale of operations.

As well, subsidizing polluting sectors or technologies hampers the development of greener alternatives. The \$145 billion a year given in subsidies to the fossil fuel and nuclear energy sectors worldwide, for example, artificially raises the return on investing in those sectors as compared to the relatively capital-starved renewable energy sectors.

From an economic perspective, distorted prices reduce one of the main potential gains from trade—increased efficiency (see Chapter 4). If Iceland, for example, devoted enough subsidies to the production of coffee in greenhouses it could become a competitive exporter. But most people would agree that this would be a staggering waste of resources for the Icelandic economy.

Finally, even well-intentioned subsidies are often poorly targeted. The lion's share of U.S. agricultural subsidies, touted as supporting small family farms, ends up going to large agro industrial firms. For example, the top one per cent of U.S. corn subsidy recipients in 2003 got 18 per cent of all payments, averaging over US\$465,000 each.

It is important to remember that not all subsidies are perverse. Some can be used to correct current market failures. A subsidy that pays for previously unrewarded environmental benefits, for example, brings prices more closely into line with true social costs. For example, it may make sense for governments to subsidize developing and disseminating solar technologies as alternatives to fossil fuels since it could lower emissions of greenhouse gases. If environmental costs are factored in, such subsidies actually move prices closer to

their proper level. The WTO at one time recognized that some sorts of subsidies are desirable, and provided exceptions in the Agreement on Subsidies and Countervailing Measures, including for certain subsidies to help firms to meet new environmental regulations (up to 20 per cent of the costs of a one-time expenditure). But this exception lapsed in 1999 and has not been renewed.

Even those subsidies that are perverse deserve careful analysis. Dismantling them can cause hardship in the short run to those least able to absorb the shock. Cutting fossil fuel subsidies in cold climates, for example, may hurt the poor who depend on such subsidies to heat their homes. Cutting fisheries subsidies may mean an initial loss of needed revenue for countries that sell the rights to fish their territorial waters. These types of considerations argue for impact analysis to precede any sort of subsidy reform and, in some cases, for flanking policies or bridging measures to cushion the blow of reform.

It remains to be seen whether the WTO can play a major role in dismantling perverse subsidies. Certainly, environmental concerns are informing the WTO debate over appropriate agricultural subsidies (see Section 5.8). And it has been proposed that perverse energy subsidies be addressed in trade law. But perhaps the greatest prospect for progress is in the area of fisheries subsidies, reform of which has been called the greatest contribution the Doha talks could make to sustainable development.

The Doha Ministerial Declaration commits members to “clarify and improve WTO disciplines on fisheries subsidies.” This reference, which marks a first foray for the WTO into the area of perverse subsidies, was due to the efforts of NGOs and a core group of countries christened the “Friends of Fish,” that wanted to see the relevant WTO disciplines improved.

The stakes are high. Government subsidies have been estimated at some 20 per cent of the value of the worldwide fish catch, and have contributed to declining fish stocks and marine environmental damage, particularly in the developing countries where the surplus capacity is often exported. As noted in Chapter 1, some three quarters of the world’s fish stocks are being fished at or beyond their biological limits. But the fact of high stakes means that opposition to reform is also strong, and the negotiations in the Doha talks, while they are progressing, are doing so with difficulty. The central and enduring message of subsidy reform, whether inside or outside the WTO, is that building consensus will not be an easy task—for every perverse subsidy there is a host of beneficiaries keen to see things stay as they are.

5.8 Agriculture

Agriculture has significant environmental impacts. Irrigation is the largest single use of water in most countries. Agricultural runoff and seepage of fertiliz-

ers and pesticides are major sources of groundwater pollution. Changing patterns of land use, for example from forest to agriculture, can destroy habitat for plant and animal species. Intensive livestock operations in many countries have grown so large that they pose major problems of waste management and disposal, and are sources of air and water pollution. At the same time, agriculture can play a positive role in ecosystem management. Over centuries, agriculture has come to play an essential role in maintaining particular landscapes and the biological diversity they shelter.

Agriculture is also intimately related to development. This is most obvious in developing countries, where some 70 per cent of the population live and depend directly or indirectly on agriculture. As well, food insecurity and malnutrition are among the most critical of development concerns.

As such, international trade rules in the area of agriculture have major and complex implications for sustainable development, with an impact well beyond the 10 per cent of global agricultural production that is actually traded. In fact, trade concerns have dominated the debate on domestic agricultural policy all around the world for the past twenty years or more: developed countries have faced increasing problems with surpluses that they seek to export, while developing countries have sought (and been encouraged to seek) increased production of export commodities so as to generate foreign exchange to service their debts. The result has been too much production and low commodity prices, at a significant environmental cost.

The globalized market for agricultural products has a number of complex environment and development impacts. For instance, access to world markets can provide access to food when local harvests fail. Imported food can also provide a more sustainable alternative to farming marginal land, allowing better management of natural resources. Revenues from exported crops can be superior to the profits available through sales on local markets, providing much-needed capital to rural communities. That said, most agricultural commodity prices have been in more or less steady decline in real terms for several decades. Moreover, developing country farmers have seldom been able to capture much of the benefit of overseas sales, with the lion's share of rents being captured by others in the value chain: brokers, government marketing boards and multinational buyers with significant market power.

Given its importance to domestic well-being, it is not surprising that agricultural trade was the most contentious subject of negotiation of the Uruguay Round. Previously, agriculture had been accorded special status under multilateral trade rules that allowed countries to protect their domestic production in ways not permitted in other sectors. The Uruguay Round's Agreement on Agriculture (AoA) was a first step to bringing agriculture under GATT disciplines.

5.8.1 Agriculture, subsidies and domestic support

The Agreement called for caps and reductions on the use of agricultural export subsidies, domestic support programs and tariffs. When they signed the AoA in 1994, WTO Member States agreed to review implementation of the agreement five years after its coming into effect (in 2000). Agriculture is thus a central element of the Doha negotiations, and continues to be a contentious topic. The lack of agreement over agriculture was the principle reason for the inconclusive outcome of the fifth WTO Ministerial Conference, held in Cancun in September 2003. This failure effectively nullified the January 2005 deadline set in Doha for conclusion of the overall negotiations. To the extent the talks are proceeding at this point, it is due to a hard-fought agreement on how to proceed with the agricultural issues.

Much of the public debate over agriculture turns on the question of support for domestic producers, such as export subsidies (the EU's tool of choice), export credits (a preferred measure in the U.S.) and the raft of price support and other programs that both maintain. Such measures are almost exclusively used by developed countries—they are the only countries that can afford them.

In the WTO context, great importance is attached to the distinction between those measures that distort production decisions and those that do not. A subsidy paid for each hectare under cultivation, for example, affects production by encouraging more land to be cultivated. Farm income insurance, on the other hand, is a form of support that has no such undesirable incentives (though some economists argue that any payment to farmers distorts production decisions—even income insurance reduces risks and thus increases expected returns). This type of non-distorting support is termed “decoupled,” and is given preferential treatment under WTO rules; trade-distorting subsidies are for the most part prohibited, while those that are non-, or minimally, trade-distorting are allowed under certain circumstances (see Box 5-4).

Why the concern with production-linked support? Actual impacts will vary from scheme to scheme, but too often such support encourages over-production, and over-use of chemical inputs. This intensifies all the environmental problems discussed above. Sometimes it also leads to abandoning traditional sustainable practices such as rotating crops and fallowing fields. Other forms of agricultural subsidies artificially lower the prices of inputs, such as water, fertilizers and pesticides, encouraging their overuse.

Agricultural support is also a key development issue. Many developing countries have an advantage in agricultural products compared with their developed country trading partners, but are unable to harness this potential engine for growth. Subsidized exports of surpluses from developed countries depress prices on the international markets, making agriculture a less profitable propo-

sition for those whose governments cannot afford to subsidize. In many developing countries—even those where agriculture is not a large component of gross domestic product—agriculture is a vital basis of employment for a significant part of the population.

Box 5-4: The three WTO agricultural boxes

Agricultural support is classified into three types in the WTO: amber box, blue box and green box.

- **Amber box** support is deemed to be trade-distorting—as with support linked to exports, or to production levels—and is subject to reduction commitments.
- **Blue box** support may be linked to production levels, but is aimed at reducing production. It is, therefore, considered less trade-distorting than amber box support. While total blue box spending is limited, the limits are generous.
- **Green box** support is supposed to be non- or minimally trade-distorting. It must be de-coupled from production levels. Annex 2 of the AoA defines a number of types of green box support, including research and development, marketing support, food aid spending and environmental conservation programs. There are no limits on the levels of green box support.

For these reasons, the AoA's attempt to limit production-linked support programs won widespread support from the environmental and development communities, and the Doha round of talks promises to reduce them even further.

However, this promise may turn out to be hollow. For one thing, there is a risk that any reductions in support will not be real. Amber box measures may be moved to a re-defined blue box, or to a vaguely-defined green box, in a move that looks like reduction, but which results in the same overall spending. As well, most countries are well below the amounts they are actually allowed to spend on domestic support, and so have room to negotiate down the allowances without reducing actual spending. Given this, there is potential for a “successful” conclusion to the Doha talks which actually changes very little. Moreover, it is not clear that replacing price support policies with decoupled payments will in fact achieve the supposed benefits. Experience has shown that production may not decrease, since farmers with millions of dollars sunk into land and specialized equipment are loathe to simply quit, and cannot easily switch crops, in response to lower prices.

The AoA allows support for certain policies determined by WTO Member States to be both desirable and non-trade-distorting (or minimally trade-distorting). These are the green box types of support (described in Annex 2 of the Agreement), including agro-environmental policies with insignificant impacts on production or trade, such as support for research, disaster payments and structural adjustment programs. The scope of these exceptions is the subject of some controversy in the current negotiations, particularly given the fact that it is up to members themselves to declare—on the basis of vague criteria—whether their own measures fall into the green box. Thus the fear, noted above, that some forms of amber box and blue box support will be only marginally altered and then shifted to the green box.

Some countries argue agriculture is “multifunctional”—that agriculture produces food, but also protects biodiversity, conserves soil, ensures national food security and more. Proponents of multifunctional agriculture argue that these non-productive benefits should be paid for by the state (since the market will not pay for them), and that the resulting support payments should not be subject to spending limits under WTO rules. Critics charge that the multifunctionality argument is simply a new justification for old programs, and that the effect—overproduction—is the same.

5.8.2 Agriculture and GMOs

In some countries (primarily the U.S. and Argentina), producers have been authorized to cultivate genetically modified organisms (GMOs) in agriculture. World market shares of GM cotton, soybeans, canola, and maize have become significant, and proponents claim that, properly used, GM products can reduce the use of harmful pesticides and boost yields. Environmental concerns over the use of GMOs include the possibility that the insect- or herbicide-resistant traits of GMOs will generate “super” weeds and parasites that will be resistant to conventional protective interventions. They also include the risk of crossbreeding with traditional relatives of the modified plants, raising the risk of reducing the variety available in the gene pool.

Predictions that GMO technology would become a trade issue have already been borne out; there have been two cases before the WTO dispute settlement body. In one, the U.S. and others complained that the EU suspended efforts to approve GMO imports and, in the other, Thailand complained about Egypt’s ban on tuna canned in GM soy oil. These cases, and the GMOs debate more broadly, highlight a number of the key trade-environment issues discussed above. For example, are genetically modified commodities “like” traditional agricultural commodities and, if so, will treating them differently result in discrimination contrary to GATT requirements (see Section 3.5.1)? What kinds of precautionary measures can be taken in restricting their import with-

out contravening the SPS Agreement (see Section 3.5.3)? What strength does the Cartagena Protocol have in the face of WTO rules, when it authorizes a precautionary approach? What do TBT rules requiring measures to be “not more trade restrictive than necessary” mean for labelling schemes that require producers to declare genetically modified content in foods (see Section 3.5.2)?

The disruption of trade flows in agriculture due to fears over GMO technologies causes problems beyond these two cases. In 2002, the governments of Zambia and some other African countries cited the fear of cross-contamination as their justification for refusing offers of U.S. food aid in the form of unmilled GM corn, despite facing famine. The African governments argued the corn might contaminate their native species, which could disrupt their exports to the EU, their principle market and home of tough restrictions on GMO imports.

The February 2004 Meeting of the Parties to the Biosafety Protocol agreed that countries should be able to demand clear documentation of GM imports at the border, including details on levels of GM contents and their origin (ensuring traceability, in case liability issues arise). Major GM commodity exporters unsuccessfully resisted this outcome, arguing it would impose unnecessary costs and stigmatize their export shipments. The issue has proved difficult, and the subsequent Meeting of the Parties in 2005 was unable to agree to the details of the labelling scheme, though it was charged with doing so.

5.9 Investment

Investment is important for sustainable development, which involves fundamentally changing how we produce, distribute and dispose of goods. This kind of change will necessarily come mainly through investment. In developing countries, where domestic sources of capital are scarce, foreign direct investment (FDI) will necessarily play a significant role.

But not all investment leads to sustainable development, particularly where domestic institutions for managing investment are weak. And some forms of investment agreements may actually undermine the ability of governments to regulate in the public interest in areas such as public health and the environment.

At the multilateral level, two WTO agreements contain disciplines on investment, but neither is particularly extensive in coverage or protection. The General Agreement on Trade in Services (GATS) provides some basic rights to investors seeking to set up shop as service suppliers in a host country. The agreement on Trade-Related Investment Measures (TRIMs) prohibits certain demands that countries might put on foreign investors as a condition of establishment or operation. These “performance requirements” include require-

ments that investors limit imports, that they source from local suppliers or that they export a certain percentage of their production.

Broadly speaking, though, the governance of FDI at the global level falls outside the WTO system. Despite a long-standing effort on the part of some governments to negotiate a stronger WTO agreement on investment, there has been little progress made to date. Though investment is part of the Doha Declaration (see Section 7.1), at the 2003 Cancun Ministerial Conference a majority of the WTO's membership opposed launching investment negotiations. Earlier efforts at the OECD to negotiate a Multilateral Agreement on Investment also failed. The near-term prospects for a multilateral pact are slim.

Instead, investment is governed largely by a patchwork of bilateral and regional agreements. Many of these agreements are purpose-built bilateral investment treaties (BITs)—of which there are more than 2,200 worldwide—while others are broader free trade agreements containing investment provisions. The World Bank also plays an important role in investment promotion, financing and dispute resolution.

The overwhelming proportion of BITs does not purport to deal with environmental concerns; rather, they are narrowly aimed at providing rights and protections to foreign investors. Common investment treaty protections include:

- A right to repatriate investment returns and profits;
- Guarantees of non-discriminatory treatment (national treatment and MFN);
- Compensation in the event of nationalization, expropriation and indirect forms of expropriation;
- Certain minimum standards of fair treatment; and
- A right for foreign investors to directly compel host states into binding arbitration in the event of treaty disputes (investor-state dispute settlement).

The treaties typically cover a broad array of types of investment, including FDI, portfolio investment and various forms of debt.

Although investment treaties rarely contain environmental provisions, they may have implications for environmental protection and other public welfare regulation such as health and safety. A number of disputes have seen investors use investment treaty protections to challenge government measures in areas such as waste management, land-use planning or the regulation of pollutants. The most worrying of these arguments from an environmental perspective hold that government regulation in these areas can amount to expropriation, with the investor due compensation.

The last few years have seen a surge in investor interest in investment treaties, but the phenomenon is so new that the impact on domestic policy-making is still unclear. It is clear, however, that arbitration tribunals are being tasked with balancing investor rights against the broader public welfare as they review a wide range of government policies and measures.

This prospect has led to considerable interest by governments and non-governmental groups in tracking and monitoring the disputes and their rulings. This is not easy; the treaties typically delegate arbitral duties to the care of ad-hoc tribunals operating in-camera, without public scrutiny or any need for disclosure of materials and pleadings.

Some efforts have been undertaken by the U.S. and Canada in particular to draft model BITs, or template agreements, that will mean future treaties have more open dispute settlement processes, and at least one investor-state dispute has now opened its hearings to the public. As well, the model BITs of both countries state that non-discriminatory regulation in the public interest—for example, to protect the environment, public health and safety—will only rarely be considered expropriation. Nevertheless, the vast majority of investment agreements lack such procedural and substantive provisions.

5.10 Services

Commonly defined as “anything you can’t drop on your foot,” services might initially appear so intangible as to not raise environmental concerns. In truth, the production, distribution and consumption of many services have large ecological footprints, and other services by their nature involve environmental remediation or protection. As such, regulating services in the public interest is fundamental to sustainable development.

Transportation services—everything from trucking food to shipping steel—are important sources of greenhouse gases and other air pollution. Uncontrolled tourist development threatens some of the world’s most sensitive ecosystems. Waste management and disposal services must be carefully regulated to avoid significant environmental impacts, while other “environmental services” such as water distribution, sewage and sanitation are critical to human health.

Until the mid-1990s, there were few rules governing how national and local governments regulated services. Outside the European Community, international trade rules dealt almost exclusively with goods. This changed when rules governing trade in services were negotiated in the NAFTA (1994), the WTO’s General Agreement on Trade in Services (GATS) (1995) and a number of subsequent regional trade agreements.

The scope of these services treaties is immense. They apply to all government measures (national and sub-national) affecting “trade in services,” which is

defined to include all the different ways (or “modes”) that a service can be delivered internationally. These include: “cross-border” (e.g., international consulting services); “consumption abroad” (e.g., tourism); “commercial presence” (i.e., foreign direct investment) and “natural persons” (e.g., engineers working abroad).

The rules governing services trade are broadly similar across the various agreements. There are *non-discrimination* rules to ensure that government measures treat foreign services and suppliers no less favourably than local ones. Some treaties ban certain *performance requirements*: conditions requiring foreign service suppliers to purchase locally, transfer technology or train locals. There are also *market access* rules prohibiting numerical limits on service transactions or service suppliers in committed sectors. Other rules prohibit *monopolies* in committed sectors.

Each of these rules potentially conflicts with certain environmental protection measures. There may be legitimate environmental reasons for governments to favour local suppliers. In Denmark, special taxes and subsidies favouring wind energy produced by local cooperatives helped overcome political opposition to wind energy and resulted in rapid growth in this sector. Government measures *requiring* foreign investors to transfer state-of-the-art environmental technology, or train locals to use it, can accelerate the uptake of such technology in developing countries. Numerical limits on service activity can be environmentally essential where ecosystems are under stress, but are discouraged as market access barriers. Finally, public monopolies can play an important role in providing public interest environmental services. For example, establishing waste collection monopolies can allow municipal governments to consolidate the waste stream, reduce waste and increase recycling.

Proponents of services trade treaties stress the rules’ flexibility and the ability of governments to phase-in coverage and exempt certain non-conforming measures, thereby preserving legitimate policy measures. They also point out that the treaties’ general exceptions allow otherwise inconsistent environmental protection measures if governments can demonstrate that they are *necessary* to protect “human, animal or plant life and health.”

Governments do have a one-time opportunity to protect non-conforming measures when they make services commitments, by compiling a list of carve-outs. This, however, requires an unrealistic amount of foresight into exactly what measures may be needed to respond to future environmental challenges. In practice, it is also very difficult to successfully invoke general exceptions. Trade dispute settlement panels are able to second-guess regulators by arguing that they could have used less-trade-restrictive measures. Critics contend that the restrictions and legal uncertainty stemming from the new services rules may together result in chilling environmental policy-making and regulation.

A number of post-NAFTA regional and bilateral trade negotiations, particularly those concluded with the U.S. and the EU, have broadened the reach of services treaties by addressing services.

GATS mandates successive rounds of negotiations to expand the treaty. These talks are part of the WTO Doha Round negotiations. The “built-in” GATS agenda includes creating rules on subsidies, safeguards, and government procurement in services. Significant negotiations are also underway to flesh out the meaning and scope of GATS obligations on *non-discriminatory domestic regulation*. GATS Article VI.4 commits members to negotiating a necessity test requiring domestic regulations to be “no more burdensome than necessary” to achieve their objectives. Future rules along these lines could affect important environmental measures such as licensing (e.g., waste disposal permits) and standards (in everything from water quality and silviculture to pipeline safety standards).

The Doha negotiations also involve special talks on liberalizing trade in environmental goods and services (environmental goods are discussed in Section 5.11). If the results make environmental protection and remediation technologies available more widely and cheaply, then the benefits could be substantial. The challenge, both in this area and in wider services negotiations, is to craft agreements and the respective commitments that foster the potential benefits of services liberalization, while at the same time preserving the flexibility for governments to regulate effectively in the public interest.

5.11 Environmental goods

As noted in the previous section, the WTO’s Doha work program (see Section 7.1) includes a commitment to lower or eliminate tariffs and non-tariff barriers on trade in environmental goods and services. This, on its face, sounds good from an environmental perspective; the more easily environmental technologies and goods are traded, the better for the environment worldwide.

However, as the negotiators have found, defining what constitutes an environmental good can be challenging. There are many types of candidates:

- Goods destined to be used in environmental remediation or clean up (e.g., oil spill remediation equipment), prevention of environmental damage in industrial processes (e.g., air pollution control, waste management, energy-savings), or equipment for environmental monitoring or analysis.
- Technologies and products that, in their use, are more environmentally-friendly than the norm. This includes consumer goods such as electric cars, and producer goods such as wind turbines and technology for cleaner burning of coal.

- Goods that have been manufactured in environmentally-friendly ways (e.g., organic produce, recycled paper).

All of these seem, on their face, to be reasonable candidates for inclusion in the negotiations. But there are three main problems that have stalled progress.

In the first category of goods above: while a thermostat, for example, is an essential good for heat/energy savings and management and, therefore, could be considered an environmental good, it has other uses not related to environmental management. There are a number of such “dual use” goods, meaning liberalization in environmental goods also entails liberalization of other goods—goods for which some countries may not have an interest in freer trade.

In the second category: it is easy to see that an electric car is a different good than a conventional car, and may deserve special treatment. But, if the principle is to reward those goods that perform better, where do we stop? Is a fuel-efficient car an environmental good? It does perform better than a gas guzzler. Making such distinctions would put the WTO in the position of setting (and continually updating) environmental standards, in effect designing a sort of ecolabel scheme—a task for which the organization has little appetite, mandate or expertise. A pragmatic solution might be to refer to the tariff schedules through which any preferences would ultimately be expressed. There is a separate tariff heading for electric cars, but not for fuel-efficient ones.

In the third category: here—particularly in the area of organic agricultural products—there is tremendous potential to benefit developing country exporters—a potential that is markedly absent in the other categories, which are dominated by developed country technologies. But this type of preference would involve discriminating on the basis of process and production methods (PPMs; see Section 5.1). Some of the key beneficiaries of liberalizing trade in this type of environmental good are also those who most staunchly oppose the prospect of discrimination on the basis of PPMs, fearing that it will be used to unfairly block their exports. Many countries have not yet resolved this conundrum.

5.12 Government procurement

Government procurement is government purchases of goods and services—everything from office supplies to jet fighters to consultants. Government expenditures typically make up a large portion of GDP—10 to 25 per cent in OECD countries—and what governments decide to buy or not buy can have an enormous influence on the economy and environment. This fact has led many governments to begin thinking about how to green their procurement, making it a force for environmental protection, or at least reduced environmental damage.

Most such schemes to date have involved either a price preference for goods that meet certain criteria (for example, recycled paper can be up to 10 per cent more costly and will still be bought), or a specification of the product's attributes (for example, all government fleet automobiles must have a certain fuel efficiency). Because they are administratively simple (though not for the purchasing agents), they can make a real difference, and because they portray the government favourably in the public eye, such schemes will undoubtedly be increasingly popular.

The greening of government procurement may have trade implications. Many of the issues are the same as those posed by labelling and certification schemes (see Section 5.4). The purchasing requirements may be based on process and production method standards—for example, governments may give preference to goods made that release little carbon into the atmosphere. Or they may simply require a domestic-level ecolabel or environmental management certification, saving purchasing officers the trouble of verification and auditing. But, as with labelling, the PPM criteria set in one country may not always be relevant in another. And the specifications may be, intentionally or unintentionally, set up in ways that favour domestic producers. Labelling and certification deal with voluntary standards, and it was noted above that there is some debate over whether they are in fact covered by the existing trade rules. In the absence of a clear answer, it would seem that governments are free to rely on, and strengthen, PPM-based voluntary labels through their purchases. But if a government requires, for example, that all the paper it buys be certified by a domestic ecolabel, we enter the grey area between voluntary standards and mandatory technical regulations.

Government procurement typically has special treatment under trade law. Most bilateral and regional agreements carve it out of their coverage, or say very little about it. In the WTO, it is covered by the Agreement on Government Procurement (GPA), but this is distinct from most WTO agreements in that it is plurilateral. This means that countries do not have to subscribe to it as a prerequisite to WTO membership and, in fact, only a few have actually done so. GPA signatories at present are the EU countries and roughly a dozen other countries, mostly from the OECD. The focus of the Agreement is to require governments to tender bids for their purchases transparently and fairly.

Unlike GATT, the GPA does not prohibit discrimination among like products, but rather focuses on discrimination between foreign and domestic suppliers. It does demand, though, that any requirements should not be “prepared, adopted or applied with a view to, or with the effect of, creating unnecessary obstacles to international trade”—a requirement that has yet to be interpreted. It also mandates that technical specifications should be “based on international stan-

dards, where such exist; otherwise, on national technical regulations, recognized national standards, or building codes.” A technical regulation, according to the footnote that modifies this text, is any standard set by a recognized body. ISO 14001 presumably fits this bill, and, arguably, so would most national-level ecolabelling programs.

Government procurement was one of the four “Singapore issues” (also including investment, competition policy and trade facilitation) which some hoped would be negotiated as part of the Doha negotiation’s single undertaking (see Section 7.1). This would probably have meant an evolution from plurilateral to multilateral commitments. But many developing countries were not ready to negotiate, and the state of play has reverted to further talks on transparency in government procurement in a working group that has been meeting since 1996.

For now, the environmental issues in government procurement are on the horizon. The greening of government procurement is a recent, though potentially important, phenomenon. Talks in the WTO working group, as narrowly focused as they are, are a long way from meaningful negotiated commitments. And the existing Agreement has yet to be interpreted by a dispute settlement Panel or the Appellate Body in a way that would clarify how it might treat PPM-based discrimination.

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6.

Regional and bilateral trade agreements

Section 3.7 described the exponential growth of regional and bilateral free trade agreements. These agreements vary widely in their approach to environmental and sustainable development issues, ranging from narrow economic agreements that do not directly address any environmental issues to broad agreements that include economic, environmental and development issues all woven together in a single text. By their sheer numbers, their varied scopes and objectives, and their ability to go beyond what can be agreed in a larger negotiating setting, regional and bilateral trade agreements offer an interesting “laboratory” of different approaches to these issues. The key elements of those approaches are surveyed below.

6.1 Environment and sustainable development as objectives of the agreement

A number of agreements—particularly modern ones, and including all modern agreements signed with Northern partners—explicitly list environment or sustainable development in their preambles as worthy of concern. While this type of language does not have the same force as operative provisions within the treaties, preambular language does guide dispute settlement bodies in interpreting the intent of treaty language. One watershed WTO case (*U.S.-Shrimp-Turtle*—see Box 3-2) relied heavily on such language.

The most progressive treaties include environmental protection or sustainable development as explicit objectives in the body of the treaty itself—somewhat stronger language than the preambular type, and still useful in discerning treaty intent in the event of disputes, but also more powerful in guiding the ongoing implementation of the treaty.

6.2 Environmental exceptions

Section 3.5.1 described GATT’s Article XX, which features exceptions to the obligations contained in the rest of the treaty. These exceptions, which include two related to environmental measures, are reproduced in most regional and bilateral trade agreements with relatively little variation. A few agreements—such as the Canada and U.S. post-NAFTA treaties—specify that the exceptions cover environmental measures, something that is not explicit, and was formerly contentious, in the GATT formulation.

6.3 Relationship to MEAs

NAFTA broke new ground by having specific language on its relationship to various multilateral environmental agreements (MEAs). Where there is conflict between NAFTA law and the obligations of certain trade-related MEAs (Basel Convention, CITES and the Montreal Protocol), the latter shall prevail, provided that the measure chosen is the least inconsistent with NAFTA obligations.

This particular innovation has not been taken up in many other agreements. Two agreements subsequently signed by Canada (with Chile and Cost Rica), and Mexico's subsequent agreement with Chile are the only ones to follow NAFTA's lead. A number of modern U.S. treaties agree to wait on the results of the WTO Doha Round negotiations on the relationship between trade and MEA rules (see Section 5.5).

6.4 Environmental impact assessment

Section 7.3 discusses the value of environmental assessments of trade agreements, both those conducted before or during the negotiations (*ex ante*) and those conducted after the agreement has been concluded and some experience gained (*ex post*). A few countries now conduct *ex ante* assessments of all their trade negotiations: the U.S., the EU countries as a group, and Canada. Canada also assesses its investment negotiations. In some cases, these countries encourage and fund their negotiating partners to do their own exercises, though those countries have not yet seen fit to repeat the exercise in subsequent negotiations with other partners. The EU's assessments go beyond those conducted by Canada and the U.S. to explicitly consider social impacts as well as environmental, and to consider in depth any impacts occurring in partner countries. This is an important distinction, since many of the potential environmental problems arising from changes in trade flows will manifest in the smaller countries signing any agreement—any changes in trade flows being proportionately more significant to them.

NAFTA's environmental side agreement, the North American Agreement on Environmental Cooperation, has a mandate to monitor NAFTA's environmental effects on an ongoing basis—a form of environmental assessment that is unique to that agreement.

By far, the norm for regional and bilateral agreements is not to perform any formal assessment of the treaty's environmental impacts.

6.5 Environmental governance

Environmental governance in the context of regional and bilateral treaties refers to the mechanisms used to deal with environment-related disputes, to ensure enforcement of environmental laws and to foster environmental coop-

eration and capacity building on matters of shared concern. Many agreements have none of these features beyond general commitments to strengthen cooperation, but those that do offer a wide spectrum of approaches.

On enforcement and environmental disputes, the NAFTA approach allows citizens to allege that the governments are failing to enforce environmental laws. The NAAEC Secretariat, if the allegations are solid enough, may investigate the allegations and, in some cases, can issue a report that names and shames the Party in question. There is no requirement for the offending Party to change its practice, but negative public exposure may have some positive results. This approach has only been copied in two subsequent treaties: Canada-Chile, and the U.S.-Central America/Dominican Republic free trade agreement.

Almost all the U.S. regional and bilateral agreements since NAFTA involve a state-to-state mechanism whereby Parties can allege a persistent failure to enforce environmental law in a manner that affects trade. If the complaint is upheld, payment is made into a fund to be used for environmental initiatives. Even more than ten years after the first one was established, these state-to-state environmental dispute settlement mechanisms have yet to be actually used.

Environmental cooperation and capacity building is a more widespread feature of bilateral and regional trade agreements. Capacity building tends to be a feature of North-South agreements and is usually aimed at increasing the capacity of the Southern partner to enforce and improve its existing environmental laws and policies. The U.S. and the EU in particular have large budgets for this sort of effort accompanying their bilateral and regional agreements.

Environmental cooperation is often present in agreements among states that share borders and ecosystems. Some agreements that had no such mechanisms at the outset have developed them over time (e.g., Mercosur, ASEAN). Others have included them from the start (e.g., NAFTA, various EU agreements). They usually involve formal bodies charged with identifying problems and making recommendations. As such, their effectiveness is closely linked to the importance policy-makers attach to the problems in question.

In many cases, the cooperation in question is purely on environmental matters, having limited direct relevance to trade or to trade-environment issues. ASEAN, for example, has a strong program of cooperation on combating regional haze pollution. Of course, a stronger environmental regime makes trade-environment frictions less likely, so there is potential for substantial indirect effects.

6.6 Openness

Section 7.2 argues for openness in the making of trade policy, including in the process of negotiations. But openness is not standard practice in most regional and bilateral agreements. There are a few national processes for formally gar-

nering input on negotiating issues, and only one agreement—the Free Trade Area of the Americas, still under negotiation—has made it policy to publicly release negotiating drafts on which that input can be based.

As to openness in dispute settlement, bilateral and regional agreements follow the WTO practice of closed adjudication and arbitral hearings, and restriction of the submissions of the Parties to such hearings. The notable exception is in the area of investment, where practice in the NAFTA has recently been dramatically improved. While they do not have the final say on such matters, NAFTA governments have pledged to try to open up all investor-state arbitrations to the public, and have worked to facilitate the possibility of *amicus curiae*—“friends of the court”—submissions from non-Parties. The U.S. and Canadian model bilateral investment treaties—the template used by negotiators for future agreements—also incorporate these changes. These agreements are a slim piece of the whole pie, though; there are over 2,200 bilateral investment agreements and trade agreements with investment rules.

6.7 Conclusions

The discussion above shows that regional and bilateral agreements can act as breeding grounds for innovative solutions to trade and environment issues where the WTO has made meagre progress. And it highlights an important recent phenomenon: trade agreements serving as the foundation for international cooperation on non-trade issues such as environment and development concerns.

Not all the regional and bilateral approaches, however, can be considered improvements on the multilateral approach. Section 5.9 highlights a number of problems with the investment provisions in most bilateral and regional agreements. And Section 5.6 cautions that these agreements may be undermining the progress made in the WTO on TRIPS and sustainable development. As well, Section 5.10 warns that some elements of the services agenda, which, like TRIPS, is pursued more strongly in bilaterals and regionals, may have negative environmental results. The general concern from a sustainable development perspective—though it is certainly not an inevitable result—is that negotiations at the bilateral and regional level more often tend to enact restrictions on domestic policies to support environmental and sustainable development goals.

There is also a broader discussion on the relationship between the multilateral system of trade rules and the explosion of regional and bilateral trade agreements. Some analysts argue that the “rush to regionalism” is damaging to developing countries, as it erodes the strength of the multilateral system where they have greater negotiating strength. Others argue that advances in liberalization at the regional and bilateral level only benefit efforts to advance liberalization at the multilateral level.

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7. Cross-cutting issues

This chapter begins by addressing a topical issue of a cross-cutting nature: the talks ongoing as part of the Doha program of work. The Doha mandate covers many of the issues examined in previous chapters, and the section that follows gives an overview of how they are being addressed in the talks, and the prospects for outcomes that will support environmental and sustainable development objectives.

The chapter then turns to two other cross-cutting issues. While previous chapters analyzed the linkages between environment and trade from a physical and economic as well as a legal and policy perspective, a number of institutional questions also arise when we attempt to address the relationship between trade and the environment. Two important institutions central to the trade-environment relationship are openness in trade policy-making at the national and multilateral levels, and assessment as a key tool for policy makers in the development and review of trade liberalization policies.

7.1 The WTO Doha negotiations

Environmental issues have made slow but steady progress on the WTO agenda. Section 3.2.1 describes the mandate of the Committee on Trade and Environment (CTE), which was established with the WTO itself. The WTO's first Ministerial meeting (Singapore, 1996) left environment as part of the continuing agenda while taking a less active approach on the so-called "Singapore issues" (investment, competition, trade facilitation and government procurement) and on labour. At the dramatic Seattle Ministerial Conference in 1999, where the launch of a new round of negotiations was scuttled, environmental matters were seen to be one of the most contentious issues. In parallel, the dispute settlement system—the Appellate Body in particular—continued to address disputes with environmental implications and to shape the understanding of WTO rules.

All of these activities, with the exception of dispute settlement, were essentially analytical and preparatory in nature. It was not until the fourth Ministerial Conference in Doha that the environment explicitly became a negotiating issue. That Conference adopted the Doha Ministerial Declaration: the blueprint for the Doha program of work that includes negotiations, analysis and work to implement existing agreements.

The Doha Declaration includes two references to sustainable development in the preamble, including the powerful statement: “We strongly reaffirm our commitment to the objective of sustainable development,” (para. 6). But it also includes a number of explicit references to environmental items as part of the broader negotiations. As Chapter 5 has shown, a number of traditional items on the WTO negotiating agenda also have significant environmental dimensions. Taken together, there are as many as twelve items in the Doha Declaration that address the trade and environment linkage.

Environmental issues for negotiation. Paragraph 31 of the Doha Declaration lists three issues for negotiation. These are part of the single undertaking, meaning they are part of the list of elements on which there must be agreement before the entire package of Doha negotiating results is final.

1. *The relationship between WTO rules and “specific trade obligations” (STOs) set out in MEAs.* The term STO is undefined, but most take it to mean measures specifically authorized by MEAs (many MEAs only set objectives, allowing countries to decide on their own what measures might best achieve them). The mandate for negotiation is narrow, only covering frictions between parties to an MEA, whereas there is much greater potential for party-non-party conflicts.
2. *Procedures for regular information exchange between MEA Secretariats and relevant WTO committees, and the criteria for granting observer status to MEAs.* It would seem intuitively obvious, for example, that the CBD Secretariat should be involved or in the room when the WTO discusses certain TRIPS issues. But progress on this item has been difficult. This issue is part of a broader challenge for the WTO: to find more constructive ways to interact with other international regimes.
3. *The reduction or elimination of trade barriers to environmental goods and services.* There is potential for environmental and economic benefits here, but the challenge is in defining “environmental goods and services.” For example, is an energy-efficient car—or any good that is preferable to others in its class—an environmental good? If so, who sets the standards and manages them over time? Is a good manufactured in an environmentally-friendly way an environmental good? Here we get into issues of PPM-based distinctions (see Section 5.1 on PPMs, and 5.11 on environmental goods),

These three items represent a challenging agenda. Yet, none of them presents the kind of conflict of economic interests that typically dominate trade negotiations, and are now dominating the Doha Round. It is, therefore, likely that solutions to these environmental issues will only emerge as the more conflictual matters are settled. Negotiations on paragraph 31 are being conducted by

the CTE meeting in Special Session (CTESS), marking an important transition of the Committee from talk shop to negotiating forum.

Environmental issues for discussion. Paragraph 32 of the Doha Declaration lists three further items for discussion, taken from the CTE's original mandate. Unless there are unexpected developments, these will not become part of any agreement concluding the Doha Round.

- *The effect of environmental measures on market access, and the environmental benefits of removing trade distortions.* These issues have been on the CTE agenda from its inception, and it is difficult to see how they could ever become negotiating items. They reflect a deep-seated suspicion on the part of many developing countries that environmental measures are being used as barriers to trade, and the conviction that removing barriers to their exports may yield both economic and environmental benefits.
- *The “relevant provisions” of the TRIPS Agreement.* This might include work on exceptions for patenting of life forms. The relationship between TRIPS and the Convention on Biological Diversity (CBD) is covered elsewhere in the Declaration.
- *Labeling requirements for environmental purposes.* The discussion to date has focused on the ways in which environmental labelling requirements might constitute unfair barriers to market access. This set of issues is discussed in some depth in Section 5.4.

Environmental issues mentioned in other areas of negotiation. Two areas of negotiation (part of the single undertaking) include explicit reference to environmental issues.

- Under the heading of “WTO Rules” (paragraph 28) the Doha Declaration addresses non-agricultural subsidies, asking for clarification and improvement of WTO disciplines on fisheries subsidies. This issue has obvious environmental significance, and in fact environmental interests were instrumental in putting it on the agenda. See Section 5.7.
- In the context of negotiations on TRIPS (paragraph 19), the Doha Declaration calls for an examination of the relationship between the TRIPS Agreement and the Convention on Biological Diversity, over and above any discussion under the paragraph 31 WTO-MEAs negotiations. See Section 5.6.1.

Environmental issues implicit in other areas of negotiation. As outlined in Chapter 5, there are environmental issues in many areas of trade negotiations even when these are not explicitly identified as part of the agenda. Two in particular stand out:

- *Agriculture.* Agricultural trade is arguably the central issue for negotiation in the Doha Round. The environmental dimension has become increasingly important in the debate about agricultural subsidies, for at least two reasons. First, agricultural subsidies can have damaging effects from an environmental perspective if they result in unsustainable over-production. Second, some countries use agricultural subsidies to help protect the rural environment, and there is controversy over whether such subsidies have protectionist effects. See Section 5.8.
- *Investment.* At the first WTO Ministerial Conference in Singapore, investment was among the “Singapore issues” on which there was no consensus for negotiation. Since then, investment negotiations have become much more controversial, with the environmental dimension acting as one of the principal catalysts for critical analysis. The Doha Declaration seemed to move towards formal negotiations on investment, using identical formulations for all four Singapore issues (see below for subsequent developments).

Sustainable development. The Doha Declaration contained several other provisions that are significant from the broader perspective of sustainable development.

- As noted above, the Preamble strongly reaffirmed the commitment of WTO members to the objective of sustainable development. While preambular statements do not have much impact on the course of negotiations, they have played a key role in guiding dispute settlement panels addressing trade-environment issues.
- The Preamble also takes note of efforts by some countries to undertake environmental assessments of trade policies.
- The Preamble reaffirms such cooperation as exists between the WTO, UNEP and other inter-governmental environmental organizations.
- Paragraph 33 underlines the importance of technical assistance and capacity building in the field of trade and environment and calls for an exchange of experience with countries wishing to perform environmental reviews at the national level.
- Paragraph 51 calls on the Committee on Trade and Development and the CTE to identify and debate developmental and environmental aspects of the negotiations, in order to help achieve the objective of having sustainable development appropriately reflected. There is potential in this provision for strong integration of environmental and development objectives in the negotiations, but discussions on paragraph 51 have been limited.

7.1.1 The Doha agenda after the Cancun Ministerial

The Fifth WTO Ministerial Conference took place in Cancun, Mexico in September 2003. It was supposed to have laid out a roadmap for completing the Doha round negotiations. But it ended prematurely, faltering on such issues as investment and agriculture, with the chair declaring that consensus could not be reached. This left the entire Doha mandate in a state of abeyance, and resulted in the dropping of investment, competition policy and government procurement from the negotiating agenda. A July 2004 meeting in Geneva got the negotiations back on track to some extent, but agriculture and non-agricultural market access remain tough issues to resolve, with no realistic hope of meeting the end of 2005 deadline for Doha talks.

The position of trade and environment in this complex and uncertain setting is largely unchanged. Agreement on the three major items scheduled for negotiation still appears far off, but it also appears likely that once agreement has been reached on other issues—agriculture in particular—the pressure to find solutions for the open issues on the environmental agenda will yield some results. The question is whether these will be based on thoughtful consideration of the issues involved, or the pressure politics of negotiating end-games. The latter is more likely given the slow pace of negotiations, and the results are therefore uncertain.

7.2 Openness

Openness consists of two basic elements: first, timely, easy and full access to information for all those affected; and second, public participation in the decision-making process. Openness is widely recognized as being valuable to government, since it makes bureaucracies more responsive and accountable, and can bring more and better information to the decision-making process. Particularly in areas such as environment and development, where key impacts are felt locally and are difficult to predict, policy-makers need the input of those affected as key ingredients to good decision-making. In a nutshell, the result of open practice is better decisions.

Openness in making trade policy is important for environmental concerns on at least two levels. The first is at the domestic level. The ideal scenario would be for all concerned stakeholders to be informed and consulted as governments seek to define their national interests. The results of these deliberations would inform the positions taken by the country's trade negotiators, by its representatives in international standard-setting bodies and by its makers of domestic trade-related environmental policies.

At the international level two major areas of interest are the document derestriction policies and the dispute settlement mechanisms of the various inter-

national trade and investment agreements. The WTO has constructed an exceptional Web site featuring all derestricted documents, as well as all decisions of the dispute settlement bodies and guides to WTO law. But a number of restrictions still remain in effect (see Box 7-1).

Box 7-1: Document derestriction in the WTO

All WTO documents are generally derestricted and are posted to the Web site after translation. Exceptions to this policy are:

- Any document submitted by a member who requests that it be restricted, in which case it is restricted for 60–90 days (some types of documents are legally required to be published, and this right of restriction does not apply to them).
- Minutes of meetings (including records, reports and notes), which are automatically derestricted 45 days after being circulated.
- Documents relating to modification or renegotiation of Member commitments under GATS and GATT are restricted until the changes are certified.
- Documents relating to working parties on accession of new members are restricted, until the working party adopts the relevant report.
- The arguments that members submit to dispute resolution panels.

Of key interest at the international level are negotiating texts: the draft texts of agreements under negotiation. Access to these would allow for informed input by civil society on the various rights and responsibilities as they are being negotiated. This is particularly important in the areas of agreement that go beyond mere tariff reductions to matters of domestic regulatory policy, such as environmental management. Allowing comments on text *after* it has been negotiated—the current standard—is a somewhat empty exercise, given how hard it is to change agreed text. The governments involved in the Free Trade Area of the Americas negotiations have pioneered a more participatory approach, agreeing to release the draft text at various intervals, but for now this stands as the only exception to an otherwise poor record of openness in trade negotiation at the multilateral, regional and bilateral levels.

The dispute settlement procedures are an area of special interest since a number of disputes deal with trade-related environmental measures. In the WTO, the rules are restrictive by the normal standards of international law: The arguments that the parties submit to the panels are restricted, in effect closing the process to public scrutiny until a judgment has been rendered. In a development that may herald a more open approach to come, the WTO Appellate Body in 2005 allowed the first public viewing of the Parties' arguments in a case that pitted the U.S. and Canada against the EU over its trade ban on beef produced with the use of certain hormones.

Another limited channel for openness has been available since the landmark *U.S.-Shrimp-Turtle* case (see Box 3-2): the WTO Appellate Body and a few panels have accepted unsolicited briefs submitted by non-parties to the dispute (usually non-governmental organizations or individuals). In a few cases the Parties have even commented on the so-called *amicus curiae* briefs, which often give voice to environmental concerns that would not be expressed by governments. Critics have argued, though, that the usefulness of such briefs is compromised if the intervenors are not allowed to read the arguments of the parties to the dispute.

In the NAFTA context, an arbitral panel in an investment case (*Methanex v. the USA*) broke new ground in giving *amicus curiae* status to two NGOs (the International Institute for Sustainable Development and the U.S.-based EarthJustice), and in that case the arguments of the disputants were available to the *amici*. Further, the NAFTA Parties undertook in 2003 to make all arguments in all investment cases available via the web, and have set out (non-binding) criteria to guide panels in accepting petitions for *amicus curiae* status. The U.S. and Canada (not Mexico) also pledged to try to make all such arbitral hearings open to the public. Unfortunately, none of the other thousands of existing investment agreements has chosen to follow suit.

The two levels at which openness is discussed above—the domestic and the international levels—are linked in two ways. First, policies at the international level that restrict documents may impair the ability of the public to make meaningful contributions to the debates at the national level. Second, the resistance to openness at the international level by some states has occurred in part because their domestic-level processes are relatively closed, and they are wary of granting more rights to the public at the international level than they grant their own nationals.

7.3 Environmental and integrated assessment of trade-related policies and agreements

Before countries send their negotiators into trade talks or develop domestic trade policies, they first do their best to understand how different trade scenarios will

play out in their domestic economies. In which sectors should they be fighting hard for liberalized trade and in which should they be striving to maintain protection? Without an idea of where their interests lie, based on an assessment of potential economic impacts, these countries would be operating in the dark.

The same logic underlies the idea behind environmental and integrated assessments of trade-related policies and agreements. A country's well-being is not only affected by the economic impacts of such policies and agreements, but also by how they affect the environment and social structures. The importance of such assessments were recognized by the Doha Ministerial Declaration, which noted "efforts by members to conduct national environmental assessments of trade policies on a voluntary basis" and encouraged the sharing of expertise and experience between Members to support the performance of environmental reviews. As noted below, several governments routinely perform such assessments as a prerequisite to any new trade negotiations.

Environmental assessments grow out of legal regimes, established in many countries, which require environmental reviews of certain types of projects and policies. In some countries the procedures to be followed in such reviews are spelled out in great detail. In recent years there has been increasing interest in the development and application of assessment methodologies that take a more strategic, holistic and inter-sector approach. While these approaches vary in name and terminology (e.g., integrated assessment, sustainability impact assessment, and strategic impact assessment) they all attempt to ensure that the three objectives of sustainable development—environmental protection, social equity and economic development—are fully considered and incorporated into planning and policymaking processes.

Assessments can be applied at a number of stages in the policy-making process. Undertaken before a policy change, *ex-ante* assessments provide policy-makers with information that can feed into the design a coherent set of policies, increasing the likelihood that such policies will maximize their contribution to sustainable development. *Ex-post* assessments, by contrast, are undertaken *after* an event or policy change, and provide a retrospective look at the environmental, social and economic impacts of a given event or policy, and help to identify effects that need to be mitigated or enhanced. They also provide lessons for the making of similar policies in the future. Very few *ex-post* assessments have been carried out on trade agreements.

Perhaps the greatest value in assessments is that can bring a wide variety of perspectives to the analysis, including those of non-trade governmental ministries, non-governmental organizations with expertise in environmental and social issues and, most importantly, those communities most likely to be impacted. The scope of such assessments, however, can vary widely and is determined by individual countries based on their priorities and capacities.

Despite the interest by governments in environmental and integrated assessment, and the value of the results, the practice of assessment offers significant challenges. Very few, if any, countries have adequate environmental or development data. And even when such data is available, analysts then have the daunting task of modeling how trade liberalization impacts the economy and how environmental and development effects flow from those economic changes. Despite these complexities, environmental and integrated assessments will continue to be undertaken and refined given the growing international recognition of their importance and the simple fact that some understanding of the impacts of trade policies on sustainable development is better than none at all.

7.3.1 IA/EA of trade related policies in practice

A number of governments and international organisations have undertaken environmental and integrated assessments of trade-related policies and agreements. As noted in Section 6.4., only three countries regularly perform assessments of their free trade agreements: the U.S., the EU and Canada.

The U.S. conducted environmental reviews of the Uruguay Round Agreements and NAFTA. These were institutionalized by Executive Order in November 1999, and reviews have been carried out for all the U.S. regional and bilateral trade agreements since then. The European Commission developed the *Sustainability Impact Assessment (SIA) Methodology*, initially to assess the impacts of WTO negotiations. This methodology has also been used to carry out assessments of the EU-Chile and EU-Mercosur trade agreements and the Euro-Mediterranean Free Trade Area. Canada's *Framework for Conducting Environmental Assessments of Trade Negotiations* has been applied to all its bilateral and regional trade negotiations since 2001. As of 2005, it is also being applied to investment agreements.

Environmental and integrated assessments of trade and trade-related policies have also been conducted in a number of developing countries by national policy research institutions and government ministries. These have taken place in Latin America, Africa, Asia, and Eastern and Central Europe. Both Singapore and Thailand conducted environmental assessments of their trade agreements with the U.S. (though the Thai study is not yet public). The following represent some sector specific examples of integrated assessment and environmental assessment conducted through UNEP-facilitated projects:

- In Bangladesh, an assessment of the shrimp aquaculture sector showed that to overcome market, policy and institutional failures in shrimp cultivation there is a need for a judicious mix of market-based and non-market-based measures.

- In Senegal, an assessment of the fisheries sector concluded that some species are becoming seriously depleted, particularly coastal demersal species (deep-lying fish) with high market value.
- In Ecuador, an assessment carried out in the bananas sector found environmental impacts such as loss of biodiversity, alteration of water, soil, and air quality, accumulation of toxic waste and non-degradable material.

These sorts of assessments offer concrete evidence of the importance of evaluating the economic, environmental and social changes triggered by trade expansion and liberalisation. They show that failing to mitigate negative environmental effects can substantially reduce net economic and welfare gains from trade.

7.4 Capacity building

It is no small challenge to understand the economic, social and environmental impacts of trade liberalization, and to determine what sorts of complementary policies might be desirable. Putting those policies into effect offers even more layers of difficulties for most countries. In the trade and environment discourse, capacity building refers to strengthening countries' ability to meet those challenges and difficulties.

This need to build capacity was recognised in the Doha Ministerial Declaration, and increasingly in regional and bilateral trade liberalisation processes. While these statements represent a significant step forward, they must be translated into concrete actions in order to address environmental deterioration, reduce poverty and promote sustainable development.

Specifically, any effective capacity building effort needs to begin by answering the following questions: "What capacities should be built, for whom, on what topics, and to what end?" The many international statements of support for capacity building (see Box 7-2) are short on these kinds of detail. But that may be a necessary fault, given that effective efforts to build capacity must be genuinely country-driven, and tailored to the particulars of each case.

7-2: Statements on capacity building

A number of international conferences, declarations and recommendations have highlighted the importance of capacity building for sustainable development, as well as the need for integrated policy design and implementation, including:

Agenda 21 (1992) states: “Governments, in cooperation ... with international organizations, should strengthen national institutional capability and capacity to integrate social, economic, developmental and environmental issues at all levels of development decision-making and implementation. Attention should be given to moving away from narrow sectoral approaches, progressing towards full cross-sectoral coordination and cooperation” (Paragraph 8.12).

The UN General Assembly in the Rio+5 Resolution (1997) states: “International cooperation and support for capacity-building in trade, environment and development policy formation should be strengthened through renewed system-wide efforts and with enhanced responsiveness to sustainable development objectives by the United Nations, the World Trade Organization, the Bretton Woods institutions, and national Governments” (Decision 8/6, paragraph 29).

The WTO Doha Ministerial Declaration (2001) recognizes “the importance of technical assistance and capacity building in the field of trade and environment to developing countries, in particular the least-developed among them,” while encouraging “that expertise and experience be shared with Members wishing to perform environmental reviews at the national level” (Paragraph 33).

UNEP’s Governing Council requested UNEP (2001) to “assist countries, particularly developing countries and countries with economies in transition, to enhance their capacities to develop and implement mutually supportive trade and environmental policies”, in a manner that is “geared to reflect the socio-economic and development priorities, as well as the needs and capacities of individual countries” (GC 21/14).

WSSD Plan of Implementation (2002) emphasizes the need for “urgent action ... to enhance the delivery of coordinated, effective and targeted trade-related technical assistance and capacity-building programmes, including to take advantage of existing and future market access opportunities, and to examine the relationship between trade, environment and development” (paragraph 45(e)).

The United Nations Conference on Financing for Development (2002), recognized that “to benefit fully from trade, which in many cases is the single most important external source of development financing, the establishment or enhancement of appropriate institutions and policies in developing countries, as well as in countries with economies in transition, is needed” (Paragraph 27).

Generally speaking, capacity building on trade and environment issues has at least three dimensions: building awareness, building analytical capacity and building decision-making capacity. Each one is important, but may involve different stakeholder groups and involve different strategies and delivery mechanisms:

- *Training* can enhance capacity, particularly if it is focused on the specific requirements of target groups, appropriately funded, and contributes as part of longer-term capacity building efforts.
- *Country projects* on specific issues can help to build individual and institutional capacities, particularly if they are country-driven, involve national and local experts, and emanate from real needs and policy priorities.
- *Thematic research* can strengthen knowledge and working relationships around specific issues of trade, economics and environment—issues on which developing and transition countries may have common concerns.
- *National workshops* can bring together a variety of actors to promote mutual understanding of the issues, exchange experience and knowledge and provide recommendations for follow-up actions.

Experience has shown that for capacity building to be effective it should consist of more than a one-off event, and incorporate adequate follow-up, evaluation and ongoing needs assessments. Moreover, any individual capacity building activity will be more effective if developed with an understanding of how it supports and complements other such activities, and furthers the goal of long-term sustainable development objectives.

It is also important to dispel the notion that capacity building has only government agencies as its audience. Given the need to involve the wider policy community in the trade policy making process (see Section 7.2), it is obviously necessary for capacity-building efforts to include a broad array of stakeholders: research institutes, academics, media and social justice, environment and development NGOs.

Both the U.S. and the EU routinely engage in capacity building efforts to accompany their regional and bilateral trade agreements. In some cases, these exercises focus specifically on trade-related environmental capacity, such as training workshops on environmental assessment of trade agreements. In other cases, the capacity building is more broadly aimed at capacity for environmental regulation, such as helping design national systems to track toxic releases and transfers from industry.

At the end of the day, effective capacity building that strengthens environmental regimes may be one of the key ways to avoid trade-environment frictions. A functioning environmental management regime is able to anticipate, identify and address problems that might arise as a result of trade liberalization.

Suggested readings

WTO Doha negotiations

ICTSD/IISD. *The Doha Briefing Series*. Updated series of 13 issue briefings. Various dates. <http://www.iisd.org/trade/wto/doha_briefing.asp>.

WTO Web page on Doha negotiations. <http://www.wto.org/english/thewto_e/minist_e/min01_e/min01_e.htm>.

Openness in trade policy-making

Enders, Alice, 1998. "Openness in the WTO." Winnipeg: IISD. <<http://iisd.ca/trade/knopen.htm>>.

Wolfe, Robert. "Transparency and Public Participation in the Canadian Trade Policy Process." Queen's University. <<http://post.queensu.ca/~wolfer/Papers/Consultations.pdf>>.

Environmental assessment of trade agreements

Commission for Environmental Cooperation, 1999. *Assessing Environmental Effects of the NAFTA: An Analytic Framework (Phase II) and Issue Studies*. Montreal: CEC. <<http://www.cec.org/english/resources/publications/eandt6.cfm?format=2>>.

OECD, 1999. *Methodologies for Environmental Assessment of Trade Liberalisation Agreements* (COM/TD/ENV(99)92/FINAL). Paris: OECD. <<http://www.oecd.org/ech/26-27oct/docs/report.pdf>>.

Sustainability Impact Assessment of Proposed WTO Multilateral Trade Negotiations (Portal site). Institute for Development Policy and Management, University of Manchester, U.K. <<http://www.sia-trade.org/wto/index.htm>>.

UNEP, 2004. *Environmental Impact Assessment and Strategic Environmental Assessment: Towards an Integrated Approach*. Geneva: UNEP. <<http://www.unep.ch/etb/publications/EnvImpAss/textONUBr.pdf>>.

UNEP, 2005. *Handbook on Integrated Assessment of Trade Related Measures: The Agriculture Sector*. Geneva: UNEP. <<http://www.unep.ch/etu/etp/TradeLiberRiceStu/HanBookAgriSector.pdf>>.

UNEP, 2005. *Integrated Assessment of the Impact of Trade Liberalization on the Rice Sector: UNEP Country Projects Round III (A Synthesis Report)*. Geneva: UNEP. <<http://www.unep.ch/etb/publications/intAssessment/RapSynRice.pdf>>.

8. Conclusion

The main goal of this handbook is to make the complex relationship between the environment and international trade more understandable and accessible to policy-makers, non-governmental organizations and the interested public. The book also aims to dispel the idea that the relationship between trade, the environment and development can easily be described as either negative or positive. It is an immensely complex interaction that varies from country to country, sector to sector, and firm to firm. There are both threats and opportunities in this relationship for countries, local communities and firms pursuing economic development and environmental protection.

The challenge, for all these stakeholders, is to exploit the opportunities and reduce the threats, and in so doing to maximize the net positive contribution that trade can make to sustainable development. A broader and clearer understanding of the linkages between trade, environment and development is a prerequisite for seizing those opportunities, reducing those threats and in the end helping ensure that trade, environment and development can be mutually supportive.

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The global community has been for some time debating the linkages between trade and environment. It has come to the conclusion that integrating environmental considerations into the trading system is a prerequisite for sustainable development. Decision-makers at all levels need to fully understand how to do this if they are to develop balanced policies that promote development, allivate poverty and help achieve sustainable use of natural resources. This handbook meets this need. It takes complex subjects and presents them in clear and simple language. This approach enhances its usefulness as both a practical resource and a reference guide.

— *Mostafa Tolba, Former Executive Director,
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