Trade and environment in the World Trade Organization: a sustainable development perspective*

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Transition towards sustainable development in South Asia 329–345

Introduction

In recent years, trade and environment issues have become increasingly entwined, especially in the face of the fast pace of globalization and the integration of the world on account of trade in goods, services, and capital and the movement of people and information. This increase in trade is of critical importance to the developing countries.\(^1\) It offers them increasing market access opportunities, access to new technologies and ideas, and an improved allocation of resources according to the principle of comparative advantage. However, it is important that these gains in trade are integrated with the objectives of environmental protection, sustainable resource management, and poverty alleviation to achieve sustainable development, both at the local and global levels.

Sustainable development, meaning ‘meeting the present needs without compromising those of the future’ (WCED 1987), involves important inter-generational equity considerations, including those related to the environment. Environment is of importance not only because of its effects on the psychic and non-economic welfare, but also because of its impact on production over the long term (World Bank 2000). Most developing countries have a comparative advantage in the export of resource-intensive goods, which cause a high strain on the environment, and an increase in the export of these goods could lead to conflict between trade enhancement and environment conservation. The poor in these countries, who rely more heavily on environmental resources to meet their subsistence needs and in times of distress are faced with inadequate means of livelihood, tend to over-exploit the natural base. Hence, there is an intimate link between gains from trade,

* This paper is the outcome of the ongoing work on trade and environment issues in the World Trade Organization by the team at TERI.

\(^1\) In this context, it must be remembered that the share of developing countries in total world merchandise trade has increased from 23.4% in 1990 to 29.1% in 2001 (World Trade Organization 2002)
socio-economic development, and the environment for the developing countries, in particular.²

At the level of the global commons, high-income countries are the main contributors to global environmental degradation. The impact, however, is borne by all, with the low-income countries being hit the hardest due to their inadequate resilience and capacity to withstand and mitigate these impacts.

The emergence and growth of multilateral organizations, such as the WTO (World Trade Organization) and UN (United Nations)-based organizations, has brought about a transformation in governance with multilateral agreements, adding a global dimension to national governance. Global governance has emerged with an increasing authority over national governments and has lead to a reduction in their control over national policy.³ These international organizations are, however, still influenced by the pulls and economic-politico imperatives of the rich nations. In this context, it is important that the WTO meets its objectives of creating a commercial environment more conducive to the multilateral exchange of goods and services and in meeting the sustainable development concerns, especially of the developing countries.⁴

Environment-related provisions have been embodied in a number of WTO agreements.⁵ However, it was only during the Fourth WTO Ministerial Conference at Doha, 2001, that ‘environment’ was explicitly included in its negotiation agenda. It was agreed that there would be negotiations and deliberations on certain issues. These have been discussed in detail in various sections of this paper. Introduction of ‘environment’ in the negotiating agenda is significant, as trade measures are now increasingly viewed as appropriate tools for addressing global environmental problems. If they meet the concerns of environmental conservation in line with the promotion of trade concerns and are not used as non-tariff barriers, then win-win situations could be derived.

This paper is divided into five sections. The first section briefly illustrates the integration of the sustainable development notion within the WTO regime. The second section looks at environmental measures

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² A conservative estimate of environmental damage in India puts the figure at more than 10 billion dollars a year or 4.5% of the GDP in India. At a higher estimate this goes up to 13.8 billion dollars or 6% of the GDP of India. These estimates do not include the major environmental costs that arise out of biodiversity loss or pollution due to hazardous wastes (UNDP 1998).

³ Strong systems of multilateral agreement on trade, services, and intellectual property have reduced the scope for a national policy (UNDP 1999).

⁴ The total cost of denying market access opportunities to developing countries was estimated to be roughly 500 billion dollars a year, almost 10 times the amount they received in aid each year (UNDP 1992).

⁵ These include the GATT 1994, the GATS, agreements on TBT, Agreement on the application of SPS measures, AOA, Agreement on TRIPS, and Agreement on SCM.
affecting market access and the various concerns it raises for a developing country, in particular India. The third section highlights the importance of the current environmental goods and services negotiations. The fourth section covers the negotiations on the relationship between existing WTO rules and specific trade obligations set out in multilateral environmental agreements. The final section looks at the interaction between the agreement on Trade Related Aspects of Intellectual Property Rights, Convention on Biological Diversity, and Traditional Knowledge.

Sustainable development within the WTO regime

The preamble to the 1947 GATT (General Agreement on Tariffs and Trade) agreement was altered to introduce the concept of sustainable development in the WTO Agreement. The text in this context says,

‘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, ...’ (emphasis added).

This terminology is important, because the preamble to an international treaty is taken into account when interpreting the treaty.

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6 The 1947 GATT Preamble reads as: ‘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, developing the full use of the resources of the world and expanding the production and exchange of goods, ...’

7 The Vienna Convention on the Law of Treaties, 1969, in its Article 31 on the ‘General Rule of Interpretation’ acknowledges the importance of the preamble in the interpretation process when stating (1) a treaty shall be interpreted in good faith in accordance with the ordinary meaning to be given to the terms of the treaty in their context and in the light of its object and purpose, (2) the context for the purpose of the interpretation of a treaty shall comprise, in addition to the text, including its preamble and annexes...’. (emphasis added). Article 3.2. of the WTO’s DSU (dispute settlement agreement) states that: ‘The dispute settlement system of the WTO is a central element in providing security and predictability to the multilateral trading system. The Members recognize that it serves to preserve the rights and obligations of Members under the covered agreements, and to clarify the existing provisions of those agreements in accordance with customary rules of interpretation of public international law’ (emphasis added).
although it is not binding on the parties. Inclusion of the sustainable development concept in the WTO preamble has thus facilitated its reference while interpreting the WTO agreements. For instance, the Appellate Body ruled in the ‘Shrimp-Turtle’ case that the preambular language ‘demonstrates a recognition by WTO negotiators that optimal use of the world’s resources should be made in accordance with the objective of sustainable development. As this preambular language reflects the intentions of negotiators of the WTO agreement, it adds colour, texture, and shading to our interpretation of the agreements annexed to the WTO agreement (in this case, the GATT 1994). Hence, the WTO Panels and Appellate Body will rely on the concept to offer interpretation guidance in the event of disputes.

The notion of sustainable development has been reinforced in the Doha ministerial declaration, which adds in paragraph 31 that

‘the Committee on Trade and Development and the Committee on Trade and Environment shall, each within their respective mandates, act as a forum to identify and debate developmental and environmental aspects of negotiations, in order to help achieve the objective of having sustainable development appropriately reflected.’

The Plan of Implementation, agreed at the WSSD (World Summit on Sustainable Development) held at Johannesburg in August 2002, recognized the major role that trade can play in achieving sustainable development and in eradicating poverty. A 10-year work programme was also adopted with the aim of promoting ‘social and economic development within the carrying capacity of ecosystems’ by addressing economic growth and environmental degradation through improved efficiency and sustainability in the use of resources, production processes, and in reducing degradation, pollution, and waste. It further encouraged members of the WTO to pursue the work programme agreed at Doha.

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9Ministerial Declaration adopted on 14 November 2001–WT/MIN(01)/DEC/1
10The WTO CTE (Committee on Trade Environment) was established in 1995 and its broad mandate consists of identifying the relationship between trade and environmental measures in order to promote sustainable development and to making appropriate recommendations on whether any modifications of the provisions of the multilateral trading system are required.
Market access issues

Market access concerns are crucial as trade liberalization and improved access to the world markets lie at the heart of the sustainable development paradigm. Improved market access invariably results in increased export earnings, thus generating additional resources, which can be utilized for reducing poverty and protecting the environment. Environmental measures, which are in effect used as non-tariff barriers for the purpose of restricting imports, impose significant constraints on market accessibility, and affect the growth and developmental processes. In this context, the Doha Ministerial Declaration instructs the CTE (Committee on Trade and Environment) to give particular attention to, ‘the effect of environmental measures on market access, especially in relation to developing countries, in particular the least developed among them, and in those situations where the elimination or reduction of trade restrictions and distortions would benefit trade, environment, and development’\(^\text{13}\) (emphasis added). Hence, there is a clear mandate to ensure that environmental measures meet sustainable development concerns, especially of the developing countries.

GATT includes three core obligations: (1) MFN (most-favoured-nation) principle;\(^\text{14}\) (2) NT (national treatment) principle;\(^\text{15}\) and (3) elimination of QRs (quantitative restrictions) principle.\(^\text{16}\) If a measure violates a core GATT obligation, a party may be able to justify it under any of the 10 paragraphs of the General Exceptions clause, Article XX.\(^\text{17}\) The Appellate Body of the WTO has developed a test for environmental measures, which has evolved from a stringent

\(^{13}\) Para 32(i) Doha Declaration.

\(^{14}\) The MFN (most favoured nation) principle of Article I of GATT, according to which a member must provide any advantage given to one WTO member, to all other members with ‘like products’

\(^{15}\) The national treatment principle embedded in Article III of GATT, according to which members must treat foreign products in the same way ‘like domestic products’

\(^{16}\) The elimination of quantitative restrictions enshrined in Article XI of GATT, which requires members to remove all trade barriers including quotas, import and export licences, etc., but not customs duties (tariffs)

\(^{17}\) The headnote or ‘chapeau’ of GATT Article XX provides the following.

‘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... Three such exceptions of Article XX are relevant in environmental cases

1 necessary to protect human, animal, or plant life, or health;
2 necessary to secure compliance with laws or regulations, which are not inconsistent with the provisions of this Agreement, including those relating to... the protection of patents, trade marks, and copyrights; and
3 relating to the conservation of exhaustible natural resources, if such measures are made effective in conjunction with restrictions on domestic production or consumption.
‘least-trade-restrictive’ test (where the least GATT-inconsistent measure must always be preferred) to a more flexible ‘proportionality’ test (where various factors will be taken into account and measures may be upheld, despite the availability of a lesser trade-restrictive option). Out of the 10 ‘environmental’ disputes\(^{18}\) that involved GATT Article XX,\(^{19}\) only one case was upheld where a member successfully relied on Article XX as a justification for infringement of core WTO obligations.\(^{20}\)

However, there have been various instances of these environmental measures being used as unilateral non-tariff barriers, especially by the developed countries. The imposition of, for instance, a trade ban based on an environmental rationale is, to a certain extent, an attempt to impose foreign environmental standards and regulations on the industries of exporting countries.

Typically, the stance taken by most of the developed countries at the WTO, notably the EU (European Union), Australia, Norway, and others supported the usage of trade as a means to address environmental issues,\(^{21}\) while others, such as, Japan, Indonesia, Thailand, and Brazil along with India recognized the need to address the issues relating to environment, but did not fully agree with the notion of using trade as an instrument to achieve environmental goals. India’s position at the WTO has been that environmental requirements should be developed and applied in a manner that will minimize the adverse effects on market access for developing countries.

In India, there have been instances of adverse impact on market access of various export-oriented industries. Agro-products, textiles, marine products, leather, etc., have, on various occasions, faced bans on environmental grounds. Although most of these bans were subsequently revoked, they nevertheless led to a considerable loss in income and market for Indian exporters. However, in certain cases, as that of in the Tamil Nadu leather industry, these environmental stipulations were met by the Indian industry, leading to both an increase in market access and a reduction in pollution levels in India.

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\(^{18}\) This, therefore, excludes health cases brought under the Agreement on the application of SPS (sanitary and phytosanitary) measures such as the ‘EC Measures Concerning Meat and Meat Products (Hormones)’ case, WT/D48/AB/R, 16 January, 1998.

\(^{19}\) Six cases were brought under the GATT mechanism and four cases under the WTO dispute settlement system. Under the GATT system, about 300 complaints had been notified, whereas by March 2002, 248 complaints had already been notified under the WTO dispute settlement mechanism. The WTO dispute mechanism introduced more stringent procedural deadlines and, most importantly, made it more difficult for a losing party in a dispute to veto the adoption of the reports by the Panels and Appellate Body.


\(^{21}\) WT/CTE/W/67; Environmental benefits of removing trade restrictions and distortions, Note by Secretariat, 7 November 1997
A few examples of the impact of the bans on the marine and the leather industries are given here. In 1997, the EU banned imports of fishery originating in India, which did not meet certain health and environmental standards set by them. Adhering to these standards, in many cases, it seemed unrealistic and costly, especially for the small and medium enterprises.\textsuperscript{22} In 1989/90, Germany banned the import and use of leather and leather products containing more than 5 mg per kg of PCP (pentachlorophenol). This particular ban led to a loss of a few million rupees for the leather industry.\textsuperscript{23} In 1994, Germany imposed a ban on import of leather and leather products treated with azo dyes. Although these bans have had a negative impact on Indian exports, they were countered relatively soon by the industry.

That the Indian government did not challenge the ban on the use of azo dye ban stems from the fact that the Indian leather industry was highly polluting and the ban was based on genuine environmental concerns. The leather industry, particularly in Tamil Nadu, has integrated these environmental standards, which, in turn, has led to enhanced exports.\textsuperscript{24} This is, thus, an example of a win-win situation where improvement in the local environmental standards led to an increase in the market access. It was made possible with appropriate interventions and efforts by the industry, the government, and the development agencies, and such measures need to be replicated elsewhere.

With greater momentum at the WTO regarding SPS (sanitary and phytosanitary) measures and the agreements on TBT (technical barriers to trade), by way of harmonizing and developing the system of standards, accompanied by universal conformity testing and risk assessment techniques, the moves made by the Indian industry, the government, and other development agencies towards sustainable development will only be strengthened.

\textsuperscript{22} According to exporters, and confirmed by the MPEDA (Marine Products Export Development Authority), Government of India, the compliance costs for meeting these norms was 15\%-40\% of the FOB value, with the cost being higher for existing units. According to the MPEDA, about two-third of the units will ultimately upgrade themselves to the norms, whilst the rest will perish. These will ultimately lead to unavoidable financial and social costs on the marine sector in India with the small players being the hardest hit (95\% of the units are in the small-scale sector)—as given by Atul Kaushik and Mohammed Saqib, RGICS (Rajiv Gandhi Institute for Contemporary Studies) working paper series No. 25, 2001, ‘Environment Requirements and India’s Exports: An Impact Analysis’

\textsuperscript{23} A Sahasranaman, UNIDO

\textsuperscript{24} Meenu Tewari, CID (Center for International Development), Harvard University, and the Government of Tamil Nadu, June 2001 have presented that the leather industry in Tamil Nadu has been ahead of the national levels in meeting the international standards (it is also the largest producer and exporter in India, having a share of 41\% in total exports of this sector from India). In Tamil Nadu, within three years of the PCP (pentachlorophenol) ban, only 7\% of all leather samples listed more than 5 mg/kg of PCP. Similarly, after one year of the ban on the use of azo dyes, only 1 in 129 samples failed the azo dye test.
It is noteworthy that at the recently held WSSD, the developing world tried to bargain for reduction in subsidies and for increasing market access opportunities.\textsuperscript{25} If such trade barriers are removed then enough resources can be generated for meeting the sustainable development goals of most countries—a means to cushioning the declining aid flows from the developed world.

\textit{Environmental goods and services}

The role of environmental goods and services, including environmentally sustainable technologies, in trade and in achieving environmental objectives and supporting sustainable development, has been the increasing focus of discussion and analysis since the Rio Declaration on Environment and Development, 1992.\textsuperscript{26} While there is an emerging consensus that stimulating trade in environmental goods and services can benefit the environment, discussions continue on how the trade benefits can be shared among the developed and developing countries.\textsuperscript{27}

As per OECD’s (Organization for Economic Co-operation and Development) estimates, the global market in these goods and services is approximately to the tune of 320 billion dollars.\textsuperscript{28} The US is the world’s biggest producer and consumer of pollution-control equipment and services, and is also the second largest net exporter, after Germany and Japan. The US, Japan, and the EU put together control 85\% of the trade in this industry. Although traditionally the market for environmental goods and services has been confined to developed countries, with increasingly stricter environmental standards and regulations, the developing countries are catching up fast.\textsuperscript{29}

This issue was raised at the Doha ministerial conference of the WTO. The Doha Declaration mandated negotiations on the ‘reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services’.\textsuperscript{30}

\textsuperscript{25} See para 20(q) of the Johannesburg Plan of Implementation.
\textsuperscript{27} ‘Environmental Services’, Background Note by the Secretariat, S/C/W/46, 6 July 1998, at para 22 and Table 3—The Global Environmental Market, citing studies by the OECD (1996) and the Environmental Business International, Inc. (1997)
\textsuperscript{29} ‘Environmental Services’, Background Note by the Secretariat, S/C/W/46, 6 July 1998, at para 22 and Table 3 — The Global Environmental Market, citing studies by the OECD (1996) and the Environmental Business International, Inc. (1997)
\textsuperscript{30} See para 31(iii) of the Doha Ministerial Declaration.
For international trade purposes, at present, there is no agreement as to what could be classified as an ‘environmental good’; however, on ‘environmental services’\(^{31}\) there is an earlier GATS (General Agreement on Trade in Services) classification.\(^{32}\) Different shades of opinion have been expressed on definitional aspects ranging from a narrower definition to a broader one. According to the narrower definition, environmental goods are the ones whose use results in a beneficial environmental impact, that is capital goods or technologies required for ‘end-of-the-pipe’ pollution abatement. The broader definition takes into account environmental characteristics of the goods themselves and/or their production processes.

However, recognizing the cross-sectoral nature of the issue, many WTO members suggested that the negotiations on tariff reduction should take place with a list approach rather than a definitional approach. The APEC (Asia-Pacific Economic Co-operation) prepared such a list, which includes capital equipment used for air-pollution control, waste management, renewable energy, and so forth. Preliminarily, the trade data analysis reveals that India is a net importer of items mentioned in the APEC list.\(^{33}\) Developing countries will probably strive, during the current negotiations, to agree on a list that also includes products of interest to them in a fair proportion. For instance, India has shown interest for the inclusion of environment-friendly natural products such as jute, coir, rattan, and bamboo in the list of environmental goods.

This indicates that while there is an emerging consensus that stimulating trade in environmental goods and services can benefit the environment and enhance market-access opportunities for developing countries. The discussions within the WTO must, therefore, fine-tune how this might be achieved.\(^{34}\) The Plan of Implementation adopted at the WSSD reinforced this mandate with a call for voluntary, market-based initiatives to create and expand markets for environment-friendly goods and services.\(^{35}\)

\(^{31}\) The issue of services is being discussed in the CTS, where not much progress has been made since the Doha Ministerial Declaration. While the liberalization of trade in environmental services is likely to lead to increased availability of advanced know-how and environmental technologies at lower cost, to what extent it will actually happen is perhaps not easy to answer and it remains to be seen how the ongoing negotiations deal this aspect.

\(^{32}\) GATS covers four environmental services: sewage services, refuse disposal services, sanitation and similar services, and ‘other’ environmental services.

\(^{33}\) Note by WTO Secretariat (TN/M A/S/6), 7 October 2002


\(^{35}\) See para 99 (b) of the Johannesburg Plan of Implementation.
Multilateral environmental agreements

The twentieth century has seen an impressive evolution in bringing environmental protection to the international forefront. Today, more than 500 MEAs (multilateral environmental agreements) have been adopted and about 900 international legal instruments containing one or more environmental provisions exist. The Secretariat of the CTE within the WTO identified only 32 MEAs that either contain explicit trade-related measures, or whose parties have adopted trade provisions in resolutions within the set-up of the MEAs, or contain provisions that may have possible trade consequences during the implementation by parties.

When WTO members adopted the Doha mandate and undertook to negotiate on ‘the relationship between existing WTO rules and specific trade obligations set out in MEAs,’ they actually agreed to attempt to find a solution to the potential conflict between a particular type of trade measure contained in MEAs and those of WTO agreements, which are all equal bodies of international law. Considering that many of the post-Rio MEAs do refer to sustainability concepts, the notion of sustainable development itself could indirectly be strengthened within the WTO regime, if the members were to agree on the ipso facto WTO-conformity of these ‘specific trade obligations’ set out in MEAs.

This debate has proved to be largely theoretical and hypothetical given that there has never been any direct dispute between WTO members based on contradicting provisions of an MEA and a WTO agreement. As of now, none of these international agreements would automatically prevail over the other in the event of a conflict. More precisely, the general principles of treaty interpretation, such as those contained in the Vienna Convention on the Law of Treaties, 1969, may, at times, prove insufficient to solve some of the more tenacious issues, particularly with regard to ‘continuing treaties’ (which are continuously being implemented, adapted, and expanded through judicial decisions, interpretations, new norms, accession of new parties, etc.). For instance, with respect to successive treaties between exactly the same states, the lex posterior rule of the Vienna Convention (Article 30.3) will apply, that is the most recent treaty shall prevail. The later-in-time rule may lead to absurd results in some instances. Consider, for Country A, which ratified the Basel Convention in 1992 and subsequently acceded to the WTO, the WTO rules prevail; whereas, for country B, an original GATT member (1947), which ratified the Basel Convention in 1992, the latter would prevail.


Prior to the adoption of the Doha Declaration, the CTE had addressed a comparable issue where various approaches were suggested. On the one hand, many WTO members believed that there was no need to alter the text of any of the WTO agreements, given the absence of any real-life conflicts between MEAs and WTO rules, and that the dispute-settlement mechanism was well-equipped to handle such a conflict, if it were to occur. On the other hand, other WTO members favoured increasing the predictability by acknowledging the WTO-compatibility of trade measures taken pursuant to MEAs by, for instance, amending the GATT text, designing a coherence clause, temporarily waiving certain WTO obligations, adopting an interpretative decision, or reversing the burden of proof within the dispute-settlement mechanism.

Post-Doha, eight WTO members submitted their initial positions. It was not surprising that the European communities, which are the main pushers of the trade-environment linkage within the WTO, tabled the first submission. Together with Switzerland they favoured an explicit acknowledgement of WTO-conformity of these MEAs, whereas the US was conspicuous by its silence. However, it is too early in the negotiation process to gauge what the outcome will be, particularly since the negotiations form part of a ‘single undertaking’ during which important trade-offs will take place between all negotiating topics.

Let us, for a moment, imagine that any of the pre-Doha suggestions favouring some degree of WTO-conformity of STOs (specific trade obligations) set out in MEAs would be taken up as a negotiating outcome. Accepting WTO-conformity of STOs set out in MEAs would necessarily strengthen the status of MEAs. This would also have significant, albeit indirect, consequences for the concept of sustainable development, particularly since many of the MEAs, adopted after the Rio Declaration on Environment and Development, 1992, explicitly refer to sustainable development. For instance, the CBD (convention on biological diversity), 1992, aims to promote the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the utilization of genetic resources (and it also serves as a mother agreement to the Cartagena Protocol, 2000). The Rotterdam Convention on the PIC (prior informed...
consent),\textsuperscript{39} 1998, aims to facilitate information exchange on certain hazardous chemicals, with a view to achieving sustainable development.\textsuperscript{40}

To sum up, although there has been no dispute until now on provisions of the MEAs and WTO rules, which are equal international instruments, the Doha mandate does direct the WTO members to negotiate on the relationship between STOs set out in MEAs and the WTO rules. If the WTO members were to agree on an outcome that guarantees the WTO-consistency of such measures, the concept of sustainable development would be integrated in an indirect manner. In other words, national measures qualifying as STOs set out in an MEA (such as an obligation to ban the import or export of certain hazardous goods), which may be based on a sustainable development rationale, would be very difficult to challenge within the WTO regime. Considering that many of the post-Rio MEAs do refer to sustainability concepts, the notion of sustainable development itself would be strengthened indirectly and acknowledged within the WTO regime.

\textit{Intellectual property rights and biological diversity}

While the previous section described the potential conflict between WTO rules and particular provisions of MEAs, this section will address the more acute tension between the agreement on TRIPS (trade related aspects of intellectual property rights), seeking to promote protection of research and development of multinational companies, and the CBD, with sustainability as its core objective.

The supplanting of global institutions on local legislation has led to very serious implications for the sustainable development of developing nations in the context of IPRs (intellectual property rights) derived from genetic resources and traditional knowledge.

Much of this power imbalance arises from the uneven geographical distribution of biological diversity. While most of the plant germplasms and the associated traditional knowledge lie in the developing world, the technologies for the utilization of biodiversity is concentrated in the hands of the developed world, particularly the US, followed by the EU and Japan. Due to lack of resources, developing countries are unable to transform their rich biological wealth into biotechnological advancements. As a consequence, the developing countries have to pay large sums of royalty money to foreign biotechnological companies for patented products derived from their own genetic resources. The

\textsuperscript{39} Rotterdam Convention on the PIC Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, 1998; not yet put into force

\textsuperscript{40} The reference to sustainable development can be found in the Preamble of the PIC Convention; the remainder of the referred objectives are stated in Article 1.
contribution of southern biodiversity to northern pharmaceutical industry has been conservatively valued at 32 billion dollars per year (IUCN 2002).

Such inequitable sharing of resources and its benefits raises a number of economic and governance questions on the way gene-rich, developing countries are subsidizing the biotechnological developments of gene-poor, industrialized countries. This also leads to the question as to why these genetic resources are not traded through the market as economic goods. As Reid, Laird, Meyer et al. (1993) puts it, ‘Since these are raw materials used in agricultural breeding and pharmaceutical development, should companies not pay for them just as they would pay for, say, coal or oil?’

The other issue relates to TK (traditional knowledge), defined as ‘the knowledge derived and transmitted outside the boundaries of formal scientific/technical discourse, which is based on practical experience and experimentation involving trial and error that is codified to varying degrees.’ TK has enormous potential for the development of commercially viable products and processes and yet has frequently failed to bring any benefits to the creators, innovators, and holders of this knowledge. India has had bitter experiences resulting from the misappropriation and patenting of its TK, such as the patents on the wound healing properties of turmeric and the hypoglycaemic properties of bitter gourd and brinjal. Thus, India’s concerns stem from the need to both protect and promote the use of TK in a way that benefits its creators and holders, as well as the country as a whole.

The CBD – the overarching international policy regime for biodiversity – to an extent, sought to redress these inequalities in power by recognizing the sovereign rights of the states over their biological resources. The CBD acknowledges the authority of states to determine access to genetic resources subject to their national legislation and emphasizes that where access is granted, it must be ‘on mutually agreed’ terms and subject to the ‘prior informed consent’ of the contracting party providing the resources. The CBD also recognizes the need to provide biodiversity-rich countries with economic and other incentives to ensure the continued conservation and sustainable use of their genetic resources that will ultimately benefit global intellectual endeavour and technology development. The incentives can take a number of forms including joint research and the enhancement of research capability, access to and transfer of technology on fair and favourable terms, access to genetic resources on mutually acceptable terms, and prior informed consent. Furthermore, Article 8(j) deals with TK and ‘seeks their wider application with the approval and involvement of the holders of this knowledge, and in conjunction with the equitable sharing of benefits.’
The TRIPs agreement adopted in the WTO meeting imposes minimum standards of IPR protection. The TRIPs agreement does not acknowledge that the providers of the genetic resources or knowledge must be rewarded for their contribution, but only concerns itself with the patentability criteria. Under Article 27, virtually all inventions are to be patented as long as they meet the patentability criteria of being new, involve an inventive step, and are capable of industrial application.

This limited wording of the TRIPs agreement vis-à-vis genetic resources, TK, and the subject matter of patents has led to the grant of IPRs even when the source material is obtained in contravention of a country's legislation. This raises serious concerns for resource-rich countries, who fear that unless provisions are inserted into the TRIPs agreement that safeguard their concerns, biopiracy, misappropriation of resources, and the absence of benefit-sharing mechanism will continue.

Given the concerns of developing countries, the Doha Declaration asked for an examination of the relationship between the TRIPs agreement and the CBD, as well as the protection of traditional knowledge and folklore, and other relevant new developments raised by members, as a matter of priority.41

Several countries have submitted proposals for the inclusion of a ‘prior informed consent’ obligation and a ‘source of origin’ disclosure of the genetic resource or traditional knowledge. Other countries have also asked for evidence of fair and equitable benefit-sharing under the national regime of the country of origin.42 Developed nations, however, oppose these proposals on several grounds.43 They argue that the TRIPs agreement does not prohibit patentees from disclosing the

41 Para 19 of the Doha mandate reads: ‘We instruct the Council for TRIP, in pursuing its work programme including under the review of Article 27.3(b), the review of the implementation of the TRIP agreement under Article 71.1 and the work foreseen pursuant to paragraph 12 of this declaration, to examine, inter alia, the relationship between the TRIP agreement and the Convention on Biological Diversity, the protection of traditional knowledge and folklore, and other relevant new developments raised by members, pursuant to Article 71.1. ‘... Those implementation issues where there is no mandate to negotiate, would be taken up as ‘a matter of priority’ by relevant WTO councils and committees. These bodies are to report on their progress to the Trade Negotiations Committee by the end of 2002 for ‘appropriate action’.

42 See IP/C/W/356. The relationship between the TRIP agreement and the Convention on Biological Diversity and the Protection of Traditional Knowledge, dated 24 June 2002 and representing the viewpoints of Brazil, China, Cuba, Dominican Republic, Ecuador, India, Pakistan, Thailand, Venezuela, Zambia, and Zimbabwe. See also WT/GC/W/282 OF 6 August, 1999 by Venezuela; WT/GC/W/362 12 October 1999 by Bolivia, Colombia, Ecuador, Nicaragua and Peru; IP/C/W/166 of 5 November 1999 by Cuba, the Dominican Republic, Honduras and Nicaragua; IP/C/W/195 of 12 July, 2000 by India; IP/C/W/206 of 20 September 2000 by the African Group; and IP/C/W/228 of 24 November 2000 by Brazil.

43 EC, IP/C/M/30, para 143, IP/C/W/254; Japan, IP/C/M/26, para. 77, IP/C/M/25, para. 93, IP/C/W/236; Norway, IP/C/M/32, para. 125, IP/C/W/293; United States, IP/C/W/209, IP/C/W/162; 43 EC, IP/C/W/254, IP/C/M/30, para. 143; United States, IP/C/W/162, IP/C/M/29, para. 181.
source of origin nor from entering into various benefit-sharing ar-
rangements. They, therefore, point out that the incorporation of such
provisions, besides being burdensome, would deviate considerably
from the intent of the TRIPs agreement and that, instead, domestic
legislation would be in a better position to address such concerns. An-
other view is that while such concerns may be legitimate, the solution
lies outside the ambit of patent law and in the form of a stand-alone
multilateral system.\footnote{44}

As emphasized by the UNCTAD (United Nations Council on Trade
and Development) Expert Meeting on Systems and National Experi-
ences for Protecting Traditional Knowledge, Innovations and Prac-
tices, `exclusion from patentability of TK-based products in one
country, for instance, would not exclude others from granting it a pat-
ent.' Therefore, given this `loophole' in the TRIPs agreement, develop-
ing countries have had to spend extensive amounts of time, money, and
effort in the revocation of such patents. Such countries not only face
the brunt of misappropriation of their resources in the form of the loss
of substantial revenues, but are also penalized for it by way of extensive
legal fees.

These efforts by developing countries to incorporate disclosure re-
quirements are being buttressed by various efforts at the domestic
level, such as developing databases, as the basis for demonstrating
prior art. Several countries have also gone ahead and strengthened
their domestic legislation (such as India's recently passed Biodiversity
Act, 2002 and the Patents [Second Amendment] Act, 2002) to regulate
access to genetic resources and associated TK. At various international
fora, such as at the WIPO (World Intellectual Property Organization),
work is ongoing on developing international mechanisms for the
recognition of TK, contractual agreements, and access and benefit-
sharing arrangements.\footnote{45}

Conclusion

This paper brings forth important aspects of the ongoing negotiations
and deliberations in the WTO pertaining to the trade and environment
linkage. At the same time, the paper indicates how the notion of sus-
tainable development will increasingly be integrated within the WTO
regime. Hence, it is indicative that the preamble of the WTO agree-
ment – an umbrella agreement for the other agreements adopted

\footnote{44}See EC submission IP/C/W/383 dated 17 October, 2002 and earlier submission EC, IP/C/W/254
\footnote{45}For views of these organizations, see WIPO IP/C/W/242 dated 6 Feb. 2001; FAO IP/C/W/347;
CBD IP/C/W/347 Add.1 and UNCTAD IP/C/W/347 Add.2 all dated 7 June 2002.
within the WTO – explicitly absorbs ‘sustainable development’ as an overarching objective. This would encompass not only the trade-environment interface, but also the growth-distribution debate associated with income gains from trade.

The paper also illustrates how there is an increasing use of unilateral trade measures based on environmental priorities of the importing countries. There is a growing fear that the entry of environment in the WTO could be used as a convenient tool by the developed countries to restrict market access to the developing countries. This would be compounded by the fact that the WTO would weaken the authority of national governments considerably and, hence, leave them at the mercy of international dynamics, which are predominantly steered by the developed nations.

The ongoing negotiations pertaining to liberalization in environmental goods and services aim at assisting WTO members to take measures to improve their environment while aiding their development by way of promotion of trade of inherently environment-friendly products, as well as of environment-friendly technologies, in a more cost-effective way.

The negotiations on the relationship between WTO rules and a particular category of trade measures, namely STOs, set out in MEAs, may lead to the WTO members explicitly recognizing the WTO-conformity of national measures taken pursuant to MEAs. This would not only strengthen the status of MEAs vis-à-vis the WTO agreements in general, but would also lead to further integration, albeit indirectly, of measures to achieve sustainable development contained within these MEAs.

The Doha Declaration instructed the WTO members to examine the interaction between the TRIPs agreement, the CBD, and TK — an interesting example of a sustainable development crossroad, and the need to adopt an intellectual property rights regime to stimulate research and development by international companies, while finding a much-needed solution to the protection of biodiversity and traditional knowledge within national boundaries.

There is a need to understand the interlinkages between trade, environment, and sustainable development within the WTO, and to analyse the various socio-economic aspects, backed by quantitative and qualitative data and case studies. This would be imperative if developing countries, India in particular, desire to safeguard their position in the ongoing negotiations in the WTO and meet their sustainable development needs.
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