

ICTSD Project on Environmental Goods and Services



Trade in Environmental Services: Assessing the Implications for Developing Countries in the GATS



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International Centre for Trade
and Sustainable Development

Issue Paper No. 3

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Published by

International Centre for Trade and Sustainable Development (ICTSD)

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Acknowledgements

We wish to thank the reviewers of the draft report and participants at the ICTSD seminar on the report. Special thanks also to Ron Steenblik, Mahesh Sugathan, Sarah Mohan, Heike Baumüller, Massimo Grosso, Markus Krajewski, Elisabeth Tuerk and Johannes Bernabe for detailed suggestions and comments on an earlier version of the paper. This project is made possible through the support of the Luxembourg Ministry of Foreign Affairs.

Citation: Kirkpatrick, C. (2006) *Trade in Environmental Services: Assessing the Implications for Developing Countries in the GATS*, ICTSD Trade and Environment Series Issue Paper No. 3 International Centre for Trade and Sustainable Development, Geneva, Switzerland.

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ISSN 1816-6970

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FOREWORD

Environmental goods and services (EGS) as a subset of goods and services were singled out for attention in the negotiating mandate adopted at the Fourth Ministerial Conference of the World Trade Organization (WTO) in November 2001. Increasing access to and use of EGS can contribute to reducing air and water-pollution, improving energy and resource-efficiency, and facilitating solid-waste disposal to name a few of the benefits. Trade in these sectors can also be a powerful tool for economic development by generating economic growth and employment and enabling the transfer of valuable skills, technology and know-how embedded in such goods and services. In short, trade in EGS can facilitate the achievement of sustainable development goals laid out in global mandates such as the Johannesburg Plan of Implementation, the UN Millennium Development Goals and various multilateral environmental agreements.

On the other hand, the negative impacts of liberalisation on vulnerable industries in developing countries, in particular fledgling small and medium-sized enterprises, and sections of populations without the purchasing power to access privately-delivered EGS, such as sanitation, has often been cited.

Environmental services are essentially exported by developed countries. As a result, many developing country policy makers argue that these negotiations would primarily benefit the economies of developed countries which are looking for new growing markets and might impact equitable access to services that in developing countries, primarily lie in the public domain such as water and waste-water treatment and sanitation. A number of developing countries as well as civil society groups have voiced their opposition to include 'water for human use' within the scope of environmental services. The uncertainty regarding the sustainable development impacts of EGS liberalisation has led to calls among some stakeholders that liberalisation should be gradual or carefully qualified and in certain cases that countries should be able to stop or roll back liberalisation that may have these negative impacts.

Developing countries are also unclear about where their export interests lie in environmental services although temporary movement of environmental consultants, at least for the more-advanced developing countries, could be an area of opportunity.

As a contribution to the discussion this paper examines the various options available within GATS to those WTO Members that wish to undertake commitments in environmental services. It points to the need for a clear assessment of the sustainable development impacts of liberalisation as well as effective mitigation measures, which may include a regulatory institutional framework which can safeguard the public interest.

Colin Kirkpatrick is Hallsworth Professor of Development Economics at the Institute for Development Policy and Management, University of Manchester and has published extensively, among others, on development economics and policy and environment and sustainable development including impact assessment. He has also had extensive consultancy experience with international and national organisations such as the Department of International Development (DFID), World Bank, Asian Development Bank, OECD, European Commission.

The study is part of a series of issue papers that address a range of cross-cutting, country specific and regional issues of relevance to the current EGS negotiations, commissioned in the context of ICTSD's Environmental Goods and Services Project. The project aims to enhance developing countries' capacity to understand trade and sustainable development issue linkages with respect to EGS and reflect regional perspectives and priorities in regional and multilateral trade negotiations. We hope you will find this paper to be stimulating and informative reading and useful for your work.

A handwritten signature in black ink, appearing to read 'R. Ortiz', with a horizontal line underneath.

Ricardo Meléndez-Ortiz
Chief Executive, ICTSD

EXECUTIVE SUMMARY

There is a growing recognition that increased trade in environmental services has considerable potential for contributing to sustainable development. The WTO Doha Ministerial Declaration calls for “the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services” (Para 31(iii)). But the pace of negotiations on liberalisation in environmental services has been slow.

The aim of this paper is to assist in the identification of options for developing countries who are looking for guidance on how to undertake, inscribe or prepare commitments in environmental services as part of the ongoing General Agreement on Trade in Services (GATS) negotiations at the WTO, particularly in the context of Paragraph 31 (iii) of the Doha Ministerial Declaration. It does so on the basis of an analysis of existing market structures and modes of supply in environmental services, the classification of environmental services from a sustainable development perspective and an analysis of relevant issues pertinent to two major issues of interest to developing countries in environmental services, namely issues relevant to developing country imports of environmental infrastructure services and developing country exports of commercial environmental services. The paper highlights the case for conducting a sustainable development impact assessment of the potential benefits and costs to developing countries of making environmental services commitments within the GATS framework, with the aim of ensuring that trade in environmental services contributes to poverty-reducing economic growth, while at the same time protecting the environmental resources on which sustainable development depends.

The importance of many environmental services to human wellbeing is reflected in their inclusion of their benefits in the Millennium Development Goals. For instance, the Millennium Development Goal 7, Target 10, aims to halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation.

Liberalisation of environmental services can contribute to the advancement of these international development goals, but to do so effectively requires greater policy coherence across a spectrum of trade liberalisation areas within the WTO negotiations framework and between the various international bodies with policy responsibilities in this area. Measures to liberalise trade in environmental services need to be designed in a way that is consistent with, and contributes to, the wider goals of poverty reduction and sustainable development.

Further clarification of the GATS rules as they affect environmental services is desirable to reduce the risk and uncertainty of making GATS commitments, particularly in environmental infrastructure services. Areas requiring greater clarity include the permissibility of cross-subsidies, price controls and universal service provisions; and the scope for undertaking commitments in services purchased for governmental purposes.

The size of the potential gains from environmental infrastructure services liberalisation, particularly in the establishment of commercial presence by foreign service suppliers, will depend on complementary domestic market and broader regulatory reforms being undertaken, which strengthen the economic environment for private investment and involvement, and support market competition. Regulation is in most cases required to ensure that the potential gains of services liberalisation are maximised. Where these institutional and policy frameworks are not in place, or where environmental services trade liberalisation is not structured in

relation to strengthening domestic regulatory capacity, the potential sustainable development gains are likely to be compromised. This suggests that there is a need for capacity building initiatives to support the establishment of an effective regulatory framework.

Progress in Mode 4 (temporary movement of individual service providers) liberalisation of environmental services is likely to be constrained by the political sensitivities of such trade. One way of advancing with meaningful Mode 4 negotiations may be to focus on areas where evidence of the potential gains to the 'exporting' and 'importing' countries can be clearly shown. The adoption of a detailed process to assess the potential benefits and costs of Mode 4 liberalisation in the particular sub-sectors of environmental services could provide a more solid platform from which to engage in meaningful discussions on Mode 4 liberalisation in environmental services.

1 INTRODUCTION

The importance of sustainable development to trade rules established by the World Trade Organisation is enshrined in the first paragraph of the Agreement that establishes the institution. Trade liberalisation in environmental services is seen by some observers as having the potential to contribute to sustainable development, particularly in developing countries. However, most developing countries have taken a defensive negotiating position on environmental services and progress in the negotiations on environmental services has been limited. As the WTO Director General has observed, "the pursuit of sustainable development is a difficult balancing act, requiring progress on all three of its pillars - the economic, the environmental and the social" (Lamy, 2005).

The Doha Ministerial Declaration calls for "the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services" (Para 31(iii)). The Doha Ministerial Conference set a deadline for concluding the Doha Round of negotiations by 2005, along with deadlines for submitting requests (June 2002) and offers (March 2003) for services liberalisation. The 2005 Hong Kong Ministerial Declaration expresses the intent to intensify negotiations in services, notwithstanding the missed deadlines, with a view to expanding sectoral and modal coverage of commitments and improving their quality, with particular attention to sectors and modes of supply of export interest to developing countries. In particular, Annex C of the Declaration recognises new methods of negotiations on services, including a plurilateral approach as proposed by the 'Friends of Services' (these Groups exist for 19 sub-sectors). In a recognition of sustainable development concerns, the Annex notes that negotiations "shall have regard to the size of economies of individual Members, both overall and in individual sectors. We recognise the particular economic situation of LDCs, including the difficulties they face, and acknowledge that they are not expected to undertake new commitments." On GATS rules, the Declaration calls for the continuation of on-going negotiations on procurement, safeguards and subsidies on the basis of the existing mandates.

The objective of this paper is to assist in the identification of options for those developing countries who wish to consider scheduling commitments in environmental services as part of the ongoing General Agreement on Trade in Services (GATS) negotiations in the WTO particularly in the context of Para 31 (iii) of the Doha Ministerial Declaration. It does so on the basis of an analysis of existing market structures and modes of supply in environmental services; the classification of environmental services from a sustainable development perspective; and an analysis of relevant issues pertinent to two major issues of interest to developing countries in environmental services, namely imports of environmental infrastructure services and Mode 4 exports of commercial environmental services. The paper highlights the case for assessing the potential benefits and costs to developing countries of making environmental services commitments within the GATS framework, with the aim of ensuring that trade in environmental services contributes to poverty-reducing economic growth, while at the same time protecting the environmental resources on which sustainable development depends.

The paper consists of eight sections. This introductory section is followed by a discussion of services trade liberalisation in the WTO General Agreement on Trade in Services (GATS), focusing on environmental services. Section 3 reviews the ongoing discussions on the classification of different types of environmental services. Section 4 examines the potential contribution of trade liberalisation in environmental services to sustainable development. Section 5 describes the structure of global markets for environmental services. In Section 6 we examine environmental infrastructure services and trade liberalisation, focusing on water and wastewater management services. The links between domestic regulatory capacity and Mode 3 liberalisation are discussed in detail. Section 7 discusses developing countries' exports of environmental services, focusing on Mode 4 movement of natural persons. The final section provides a summary of the main findings and conclusions of the paper.

2 ENVIRONMENTAL SERVICES IN THE WTO SERVICES NEGOTIATIONS

The environmental services sector is difficult to delineate with certainty. There are often important differences in the services provided within the same sub-sector. In addition, there are some environment-related services such as engineering and research and development that are not classified as environmental under the GATS (Steenblik et al 2005). Traditionally, environmental services have been understood in terms of infrastructure that provides water and waste treatment services, often by the public sector. More recently, however, the definition of environmental services has been expanded to include other 'non-infrastructure' environmental services (e.g. air pollution control) and environment-related support services (e.g. environmental consultancy) (Grosso, 2005).

The principles and rules of the WTO's General Agreement on Trade and Services (GATS) apply to environmental services. As part of the Uruguay Round, the GATS came into force on 1 January 1995 with a set of binding rules and disciplines to promote liberalisation of services trade and investment. In accordance with Para 31 (iii) of the WTO Ministerial declaration signed in Doha in November 2001, Members agreed to negotiate the reduction or, as appropriate, elimination of tariff and non-tariff barriers for environmental goods and services.

The GATS aims to promote trade liberalisation in services and applies to measures taken by WTO members that affect trade in services. There are two main components: (a) a framework agreement covering general provisions, rules and principles and (b) national schedules listing specific commitments made by individual countries on access to their domestic market by foreign suppliers. All services are covered except those supplied in 'the exercise of governmental authority', that is, services which are neither supplied on a commercial basis nor in competition with other service suppliers. This has been interpreted to mean that only services

that are supplied on a non-profit basis by a public monopoly supplier are excluded from the scope of GATS (Krajewski, 2004). This exclusion is of particular importance in the context of 'services of general interest', such as publicly provided environmental services (for example, water services).

In contrast with trade in goods, where essentially all tariffs must be bound by WTO Members, commitments in services only cover those sectors and 'modes of supply' that are explicitly listed and subjected to liberalisation by Members in their schedules of commitments. GATS defines four categories of supply of services, known as modes of supply (Article I:2):

- cross-border supply (Mode 1), for example, business services outsourcing;
- consumption abroad (Mode 2), for example, tourism services;
- commercial presence (Mode 3), for example, services supplied by a subsidiary or branch in a host country;
- presence of natural persons (Mode 4), for example, services supplied by professionals temporarily working abroad.

Members have been using the request-offer approach as the main method of negotiating new "specific commitments" (i.e. market access) in services. According to this process, the requesting party can simply send the request in the form of a letter either as a bilateral (addressed to one party) or plurilateral (addressed to a number of parties) demand. Subsequently both requesting and receiving parties may start consulting with one another. The country receiving requests may submit an offer in response to all the requests that it had received, but would not necessarily have to offer to liberalise in each and every sector and mode of supply requested in its initial offer. Unlike a request, which is usually presented in the form

of a letter, an offer is normally presented in the form of a draft schedule of commitments and is circulated multilaterally to all WTO Members. It is also open to all Members for negotiation and consultation. An offer could trigger a further request and a succession of requests and offers could follow. The final legally binding schedule of commitments is then extended to all Members on a most-favoured nation basis (WTO, 2002).

Requests and offers could relate to (i) the addition of new sectors; (ii) the removal of existing limitations or the introduction of bindings in modes which have so far been unbound; (iii) the undertaking of additional commitments under Article XVIII; and finally (iv) the termination of MFN Exemptions. It may be noted that Paragraph 6 of the Annex on MFN Exemptions to the GATS foresees that existing exemptions will be subject to negotiations in successive rounds of negotiations (WTO, 2002).

The GATS also specifies that the request-offer process should be conducted with due respect for national policy objectives and the level of development of individual members, both overall and in individual sectors. According to Article XIX.2 of the GATS and paragraph I.2 of the Guidelines and Procedures for the Negotiations on Trade in Services (S/L/93) adopted by the Special Session of the Council for Trade in Services on 28 March 2001, there should be appropriate flexibility for individual developing country Members to open fewer sectors, liberalise fewer types of transactions and progressively extend market access in accordance with their development situation.

WTO Members' commitments are specified in the country schedules, which cover at least 161 service activities across 12 classified sectors. The commitments made by a Member country relate to market access and national treatment. Market access is a commitment to guarantee a certain level of access in specified sectors. A national treatment commitment implies that the Member will not adopt discriminatory measures that benefit domestic service suppliers. Members may choose not to make any commitment (with the relevant entry in the schedule being 'unbound') or they may

commit to guaranteed market access and/or national treatment without limitations ('none'). The intermediate case of 'limited bindings' refers to commitments to liberalise that are conditional on limitations or regulations (South Centre, 2005). Since market access and national treatment each apply to the four modes of supply, commitments are defined in the form of eight entries for a given sector or sub-sector.

There is no compulsion for Member countries to open up a particular sector or mode of supply if there are regulatory and public policy concerns about the potential impact. Since several of the GATS provisions only apply to a sub-sector once Members have made a commitment to open it in their schedules, individual countries have considerable flexibility to pursue national policy goals. However, once a Member does commit to limited bindings, the bindings become subject to WTO disciplines. Article XVII restricts the ability of Members to treat foreign service suppliers and domestic providers differently, subject to exceptions listed by a Member country in its schedule (Krajewski, 2004:110). Similarly, Article XVI details rules on quantitative restrictions affecting services trade, including prohibitions on public monopolies or exclusive service suppliers unless they are described in a country's schedule of commitments. Article XIV contains general exceptions for security or public health reasons and allows for the application of measures which are necessary to protect national security or human, animal or plant life provided such measures do not amount to 'arbitrary or unjustifiable discrimination between countries'. There are additional provisions on subsidies (Article XV) and on government procurement (Article XIII).

An area which could lead to possible complications is the treatment of new regulations introduced by a WTO Member, which are perceived by its trading partners as modifying or withdrawing its services trade commitments. Art. XXI of the GATS requires such Members to enter into negotiations with affected trading partners with a view to reaching agreement on any necessary compensatory adjustment. If mutually acceptable compensation is not agreed upon,

a dispute may be brought against the Member applying the measure under the WTO's dispute settlement mechanism.

Even if the new regulations are not seen to have the effect of modifying or withdrawing pre-existing commitments, the GATS nonetheless imposes the obligation on Members to apply regulations on the basis of objective and transparent criteria and in a manner which is not more burdensome than necessary to ensure the quality of the service. The rules also require that the regulations are implemented in a way that is consistent with the commitments the Member has made in the relevant sector, where consistency consists of applying rules in a way which could have reasonably been expected. Failing these criteria, a regulation may be susceptible to dispute settlement proceedings.

Taken together, these conditions may make it difficult for WTO Members to strengthen regulatory measures after commitments have been made, which in turn discourages post-liberalisation regulation.

The voluntary nature of GATS may be seen as a necessary *quid quo pro* for the acceptance of the broad reach of the GATS in terms of sectoral application and modal coverage (Adlung, 2004). This is reflected in the wide variation in commitments across Members and sectors. The number of sectors inscribed in schedules provides an initial indication of Members' propensity to bind access conditions under the GATS. Most Members confined themselves to locking in status quo conditions at the time of negotiations (Hoekman, 1996). Developing countries have, on average, scheduled far fewer sectors than developed countries with an average of 20 sub-sectors being committed, as compared to an average of 108 per developed country Member (Adlung, 2004:7). The sectoral pattern of commitments shows that tourism has drawn the highest number of commitments by developing countries, where 92 per cent of developing and least developed members have made commitments on tourism services.

At the time of writing, 70 Members have submitted initial offers (counting EC-25 as one),

of which 21 Members have offered to make new or improved commitments in environmental services, including 13 developing Members. For instance, El Salvador has made commitments in the sub-sector of "cleaning services for exhaust gases, noise abatement, nature and landscape protection services and other environmental protection services". The United States (US) has opened up its noise/vibration abatement services in all four modes of supply, while the European Union (EU) has offered horizontal commitments to environmental services in Mode 4. Guatemala has opened up environmental services in Mode 1, 2 and 3. The opening has been confined to the sub-sector "nature and landscape protection services". Mode 4 commitments are subject to horizontal limitations. However Guatemala has made the offer subject to the condition that the provision of these services is consistent with "national policies on the development and maintenance of natural resources and biodiversity".

There is no comprehensive WTO documentation of the requests between Members. Developed countries appear to have submitted requests to almost all Members, with the result that almost all developing countries will be involved in bilateral negotiations with at least one major trading partner. The European Union, for example, has submitted requests to 109 WTO Members based on its proposed new classification of environmental services (EC, 2003).

The European Union's initial offer of 10 June 2003 provides for full commitments in all sub-sectors with the notable exception of water collection, purification and distribution services. The United States offered full commitment in environmental services using its own classification which does not include water delivery services as environmental services.

On 28 February 2006, Australia, Canada, the European Communities, Japan, Korea, Norway, Switzerland, the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu, and the United States circulated a collective (or plurilateral) request for a number of large developing countries to open their environmental services markets to foreign services providers.

Specifically, the request asks them to open up their sewage; refuse disposal; sanitation; cleaning of exhaust gases; noise abatement; nature and landscape protection; and other environmental protection services in specific ways. However, it explicitly excludes any request for water for human use (i.e. the collection, purification and distribution of natural water). The EU at one point had asked several developing countries to open their water provision sectors to foreign investment, a request that they later took back after a backlash from civil society and several developing countries. (ICTSD,2006a). South Africa on 8 June 2006 presented an environmental services liberalisation offer, as a first response to this collective request. In its offer, South Africa commits to liberalise its

regulations on the cross-boundary temporary movement of people providing consultant services in the sewage, refuse disposal, sanitation, noise and vibration abatement and landscape protection services. In addition, it also offers to open up its soil remediation and noise and vibration abatement services sectors to cross-border supply, where only the service crosses the border, and the commercial presence of a company providing these services. The company would only be allowed to set up in the country, though, if it established a joint venture with a local service provider with a maximum of 51 percent foreign ownership. In addition, South Africa's proposal explicitly points out that the proposal does not include services related to the collection, purification and distribution of water for human use. (ICTSD,2006b)

3 CLASSIFICATION OF ENVIRONMENTAL SERVICES FROM A SUSTAINABLE DEVELOPMENT PERSPECTIVE

The ongoing discussions on the classification of environmental services are confronted by the problem of inter-sectoral services. Many environmental services fall within the scope of other GATS classification sectors, such as business, construction and engineering, education and tourism services. However, the GATS classification system is such that each sector is mutually exclusive so that services under one category should not be covered by another category. This makes it difficult to deal with services that cover several sectors particularly in the area of environmental protection.

Discussions have taken place on the classification of environmental services in the WTO Council for Trade in Services-Special Session (CTS-SS) and the Council's subsidiary body, the Committee on Specific Commitments. The narrow GATS classification framework defines environmental services as end-of-pipe public infrastructure services that largely focus on waste management and pollution control. The main instrument used in the WTO is the Services Sectoral Classification List (MTN.GNS/W/120), which is based on the Provisional United Nations Central Product Classification (Provisional CPC). According to this classification system, the environmental services sector comprises (a) sewage services (b) refuse disposal services (c) sanitation and similar services and (d) other (cleaning services for exhaust gases, noise abatement services, nature and landscape protection services, and other environmental services not elsewhere classified). However, no classification is obligatory and WTO Members are free to use any classification they prefer or to develop a classification of their own, so long as they provide a sufficiently detailed definition to avoid any ambiguity as to the scope of the commitment. Most of the negotiating proposals

take the view that the W/120 list is outdated and fails to reflect the current market and policy characteristics of the environmental services sector (WTO, 2003).

The limitations of the W/120 classification are the result of several developments in the characteristic features of the environmental services sector. These developments comprise a combination of new regulatory requirements for the emergence of private sector involvement in the supply of environmental services, growing public sensitivities to environmental problems, and the shift in environmental regulatory approaches from 'end of pipe' pollution control to pollution prevention through the adoption of technologies for cleaner production and products (OECD, 2000).

An informal working group of experts meeting under the auspices of the OECD and the Statistical Office of the European Community (Eurostat) has developed a more comprehensive classification of environmental services. The OECD/Eurostat definition includes services provided to "measure, prevent, minimise or correct environmental damage to water, air, soil, as well as problems related to waste, noise and eco-systems. The classification system encompasses services relating to: (i) to pollution management, including those related to the construction and installation of facilities for such purposes (ii) cleaner technologies and products, and (iii) technologies and products which reduce environmental risk and minimise pollution and resource use" (OECD/Eurostat, 1999).

Table 1 provides a comparison between the W/120 classification and the OECD/Eurostat classification.

Table 1: *Environmental Services: A Preliminary Comparison between the MTN.GNS/W/120 Classification and the Pollution Management Group of the OECD/EUROSTAT Classification*

MTN.GNS/W/120 Classification (with the "other" category elaborated using the CPC)	OECD/Eurostat Manual classifications Pollution Management Group
A. Sewage services (CPC 9401)	Waste water management
<p>Sewage removal, treatment and disposal services</p> <p>Excludes collection, purification and distribution services of water (in CPC 18000)</p> <p>Excludes construction, repair and alteration of sewers (in CPC 51330) (GATS 3B civil engineering construction services)</p>	<p>Design, operation of systems or provision of other services for the collection, treatment and transport of waste water and cooling water. It includes design, management or other services for sewage treatment systems, waste water reuse systems, water handling systems</p>
B. Refuse disposal services (CPC 9402) C. Sanitation & similar services (CPC 9403)	Solid waste management
<p>Refuse disposal services:</p> <p>Refuse collection and disposal services; collection services of garbage, trash rubbish and waste (household, commercial and industrial); transport services and disposal services; waste reduction services.</p> <p>Excludes dealing and wholesale in waste and scrap (in CPC 62118 and 62278; GATS 4 distribution services)</p> <p>Excludes R&D services on environment issues (CPC 85; GATS 1C Business services (R&D))</p> <p>Sanitation and similar services:</p> <p>Sanitation and similar services including outdoor sweeping, snow and ice clearing.</p> <p>Excludes disinfecting/exterminating services for buildings (in CPC 87401; GATS (1F)(o) - Other Business Building Cleaning Services.)</p> <p>Excludes pest control for agriculture (CPC 88110; GATS 1F(f) services incidental to agriculture, hunting and forestry.</p>	<p>Design, operation of systems or provision of other services for the collection, treatment, management, transport, storage and recovery of hazardous and non-hazardous solid waste. It includes design, management or other services for waste handling (including collection of waste and scrap), operation of recycling plants. It includes services for outdoor sweeping and watering of streets, paths, parking lots, etc. Services for treatment of low level nuclear waste are included.</p> <p>Excludes high level nuclear waste.</p> <p>Excludes services for manufacture of new materials or products from recovered waste or scrap and subsequent use of these materials or products.</p>
D. Other services Cleaning services of exhaust gases (CPC 9404)	Air pollution control
<p>Emission monitoring and control services of pollutants into the air, whether from mobile or stationary sources; concentration monitoring, control and reduction services of pollutants in ambient air.</p>	<p>Design, managing systems or providing other services for treatment and/or removal of exhaust gases and particulate matter from both stationary and mobile sources</p>

MTN.GNS/W/120 Classification (with the "other" category elaborated using the CPC)	OECD/Eurostat Manual classifications Pollution Management Group
<p>Noise abatement services (CPC 9405)</p> <p>Noise pollution monitoring, control and abatement services, e.g. traffic-related noise abatement in urban areas.</p>	<p>Noise and vibration abatement</p> <p>Design, managing systems or providing other services to reduce or eliminate the emission of noise and vibration both at source and dispersed. Includes designing, management or other services for acoustic and sound-proof screens and street covering.</p>
<p>Nature and landscape protection services (CPC 9406)</p> <p>Ecological system protection services, e.g. of lakes, coastlines and coastal waters, dry land, etc. including their respective fauna, flora and habitats.</p> <p>Services consisting in studies on the interrelationship between environment and climate (e.g. greenhouse effect), including natural disaster assessment and abatement services. Landscape protection services n.e.c.</p> <p>Excludes forest and damage assessment and abatement services (in CPC 881, GATS 1F(f). Services incidental to agriculture, hunting and foresting)</p> <p>Other environmental protection services n.e.c. (CPC 9409)</p> <p>E.g. acidifying deposition ("acid rain"), monitoring, controlling and damage assessment services</p>	<p>Remediation and cleanup of soil, surface water and groundwater.</p> <p>Design, operation of systems or provision of other services to reduce the quantity of polluting materials in soil and water, including surface water, groundwater and sea water. Includes cleaning-up systems either in situ or in appropriate installations, emergency response and spills cleanup systems. Treatment of water and dredging residues are included.</p> <p>Analytical services, data collection, analysis and assessment</p> <p>Design, manage systems or provision of other services to sample, measure, and record various characteristics of environmental media. Includes monitoring sites, both operating singly and in networks, and covering one or more environmental medium. Health, safety, toxicology studies, and analytical laboratory services are included. Weather stations are excluded.</p>
<p>[Business Services - R&D natural sciences and engineering; CPC 85] as well as Environmental Services - Other Services, CPC 9406, 9409</p>	<p>Environmental R&D</p> <p>Any systematic and creative activity which is concerned with the generation, advancement, dissemination and application of scientific and technological knowledge to reduce or eliminate emissions in all environmental media and to improve environmental quality. Includes creative scientific and technological activities for the development of cleaner products, processes and technologies. It includes non-technological research to improve knowledge of eco-systems and the impact of human activities on the environment.</p>
<p>[Construction and related engineering services (CPC 51330)]</p>	<p>Services related to activities for the construction and installation of facilities for: air pollution control; waste water management; solid waste management; remediation and cleanup of soil, water and groundwater; noise and vibration abatement; environmental monitoring; analysis and assessment; other environmental facilities.</p>

MTN.GNS/W/120 Classification (with the "other" category elaborated using the CPC)	OECD/Eurostat Manual classifications Pollution Management Group
Other environmental protection services, CPC 9409; possibly also [5 - Educational Services - Other]	Education, training, information Provision of environmental education or training or dissemination of environmental information and which is executed by specialised institutions or specialised suppliers. Includes education, training, and information management for the general public, and specific environmental work place education and training. The activities of the general educational system are excluded.

Source: UNCTAD 1998

Note: Items in square brackets belong to sectors other than environmental services in the MTN.GNS/W/120 classification

The environmental services explicitly mentioned in the W/120 classification focus mainly on pollution control and waste management and are a sub-set of the first category in the OECD/Eurostat classification, as shown in table 1. But many of the other environmental services activities described in the OECD/Eurostat classification could be covered in the 'other' category in the W/120 classification. There is also an overlap between the OECD/Eurostat classification and some of the other GATS sectors, for instance, business services, construction and related engineering services, and education services (WTO, 1998).

UNCTAD has also provided a classification of environmental services (UNCTAD, 2003). The UNCTAD classification subdivides environmental services into four segments: (i) environmental infrastructure services such as water and waste management; (ii) non-infrastructure, commercial environmental services, for example site clean up and remediation, cleaning of exhaust gases, noise abatement, and nature and landscape protection; (iii) remediation services with environmental end-use, for example, construction or engineering services; (iv) support services (Vikhlyaev, 2004). The following rationale is offered for this classification: (i) for environmental infrastructure services the overriding objective is building domestic regulatory capacity (ii) commercial environmental services are generally not subject to market access and

national treatment limitations (iii) services related to the environment have multiple uses, and the questions of definition and coverage are as relevant to these services as they are to EGs (environmental goods) (UNCTAD, 2003a).

The WTO Committee on Specific Commitments has considered ways of modernising the existing GATS classification of environmental services. Several Members have submitted proposals suggesting alternative definitions of environmental services that could be used when countries submit their requests and offers. The EC proposes to divide the sector into seven 'core' subsectors, namely (1) water for human use and wastewater management (2) solid/hazardous waste management (3) protection of ambient air and climate (4) remediation and clean-up of soil and water (5) noise and vibration abatement (6) protection of biodiversity and landscape, and (7) other environmental and ancillary services. The EC's approach closely resembles the OECD-Eurostat classification and has received broad support from other WTO members, with the exception of the classification of water for human use as an environmental service, where civil society has argued that water delivery services should not be covered by GATS obligations (Civil Society Submission to the WTO Ministerial Conference, 2003).

Some WTO Members (including the EC, US and Switzerland) have proposed that, in addition to the identification of 'core' environmental

services, a list should be established that would comprise a 'cluster' of services that are not environmental *per se*, but which are nevertheless important to the provision of environmental services, such as business services, research and development services, consulting, construction and transport services with an environmental component. This list could then aid Members who in the course of negotiations could also schedule commitments as an environmental sub-component of these other sectors. However, while some Members agreed that services not listed in the environmental services sector may be closely connected to environmental services, this proposal did not receive the full endorsement from the WTO membership (Krajewski, 2004). More recently, the delegations of Australia, the EC, Japan, New Zealand, Taiwan and the United States have stated that the definition of 'consulting services' was an area which required some in-depth discussion. These Members suggested that consultancy services related to the environment, such as waste management

solutions, should be considered part of the relevant environmental services subsector. With regard to other services such as engineering & R&D which had environmental 'end-uses', the group did not consider it necessary to create a specific environmental sub-category for these 'end-use' services. Instead, they proposed that any commitments regarding the environment-related activity be specified within these relevant service sectors, rather than under the 'environmental services' sector, in a way that was consistent across sectors (WTO, 2005).

A further problem associated with the classification of environmental services is the relationship with environmental goods. Many suppliers of environmental services integrate their services with environmental goods, as for example in the manufacture, installation and maintenance of pollution control equipment. This complicates the negotiation process insofar as services are dealt with under GATS and goods as part of non-agricultural market access (NAMA) negotiations.

4 TRADE LIBERALISATION IN ENVIRONMENTAL SERVICES AND SUSTAINABLE DEVELOPMENT

4.1 'Win-Win' Outcomes

WTO liberalisation in the area of environmental services is widely advocated as a means of enhancing developing countries' access to private capital, technology and management expertise, and improving market access for exports of environmental services (Hoekman, Mattoo and English (eds), 2002). It has been argued that by improving access to environmental know-how and technology, liberalisation will lead to greater environmental protection, thereby providing a 'win-win' outcome for the economy and the environment (Andrew, 2000; OECD, 2000). Proposals for the liberalisation of environmental services under the GATS framework have stimulated considerable public debate and a range of issues and concerns relating to the potential impact on sustainable development have been voiced by developing countries spokespersons, major international NGOs and civil society groups (Bisset et al 2003; WWF-CIEL, 2003; Tuerk, Ostrovsky and Speed, 2005).

With the adoption of sustainable development as an over-arching policy goal by many international organisations (including the WTO) and national governments, economic efficiency is no longer the sole criterion in the appraisal of trade liberalisation measures. Other considerations, including the social and environmental consequences of trade policies, have received increasing attention in recent years, particularly in relation to their effects on developing countries. There is now a sizeable literature on the appraisal and evaluation of the impact of trade agreements and trade liberalisation on sustainable development (George and Kirkpatrick, 2004; also www.sia-trade.org) that includes both methodological studies and *ex ante* and *ex post* evidence-based investigations.

The argument that trade liberalisation in environmental services (and goods) will result in a 'win-win' outcome is open to a number

of different interpretations and the conclusions to be drawn from theoretical and empirical studies can vary according to which definition of 'win-win' is used. In this paper it is assumed that 'win-win' outcomes occur where trade liberalisation and/or changes in trade rules have positive *economic, environmental and social* impacts. A combination of classical trade and welfare theory can be used to deduce, *under idealised market conditions*, that trade liberalisation will lead to increased economic welfare and 'optimal' environmental quality. However, *in imperfect market conditions*, 'win-win' outcomes are not guaranteed. In real world situations, both losers and gainers should be expected. 'Win-win' outcomes may be potentially realisable but whether this is achieved in practice may depend on the nature and extent of the flanking and other supporting measures that are taken. Though there are often potential, aggregate *economic welfare* gains to be made from trade liberalisation, these are not necessarily shared by all countries and all socio-economic groups within these countries. Further, the *environmental* and *social* impacts may be negative, especially where existing environmental and social protection measures are insufficient. As in the case of the theoretical studies, regulatory and other flanking measures assume a potentially pivotal role, if trade liberalisation measures are expected to deliver 'win-win' outcomes.

The OECD, for example, supports the hypothesis that 'win-win' outcomes are possible, and has outlined examples of 'win-win' situations accruing to developing countries from liberalisation of their environmental services markets (OECD, 2000a). The likely *environmental* consequences of trade liberalisation in the environmental services sector are covered by the OECD (2000) report. Other studies have identified potential negative environmental effects, including increased energy consumption for waste and water treatment and soil, water and air pollution from waste disposal sites (UNCTAD, 1998).

The *economic* effects of trade liberalisation in the environmental services sector are also covered in the OECD report but the focus is on specific examples of positive economic and development benefits. Social effects of liberalisation are not mentioned explicitly.

The OECD studies identify a number of potential or actual 'win-win' outcomes for developing countries from trade and investment liberalisation in the provision of water and waste management services. From the examination of the case studies it identifies specific examples of potential environmental benefits as:

- Clean water and waste collection services delivered to greater numbers of citizens, leading to healthier human environments;
- Reductions in the wastage of, and/or inequitable access to, scarce water resources (e.g. through leaks and ease of bypass/siphoning associated with old/inadequate pipe infrastructure);
- Increased availability of drinking water from the introduction of recycling of effluent water for industrial use;
- Use of waste recycling to create alternative sources of energy;
- In-country presence of foreign firms creates increased opportunities for environmental management education and training, and skills transfer, to other commercial sectors, both for the water and the waste media and other environmental services;
- Availability of a larger choice of environmental technologies addressing environmental problems more appropriately, which can often imply a move away from end-of-pipe solutions to preventive ones;
- Reinvestment of a share of profits in research and development of new environmental technologies and skills, environmental infrastructure upgrades and new environmental investments.

The potential economic and development benefits include:

- Relief of pressure on government budgets, including at state and municipal levels. Savings may be reallocated to environmental policy, inspection and enforcement budgets, to other social services, or to the overall budget balance.
- The creation of skilled and unskilled jobs for local workers, in design, construction and long term operation of the facilities.
- The provision of water and waste management systems attracts foreign and local investment to the community, bringing more jobs, stable economic growth and an increased local tax base.
- Local private sector partners extend their experience in large and/or very specialised projects which are then exported to other countries with similar needs and operating conditions.
- Build-operate-transfer operations revert to local ownership at a specified time, and include significant environmental resources and sources of jobs, which continue into the future.

The study briefly considers the potential losers from trade liberalisation in the environmental services sector and these are identified as:

- Consumers may be faced with new or higher fees.
- Local entrepreneurs who currently make a living from garbage collection and sorting, or from siphoning off water from old pipeworks.
- Loss of employment within existing service providers.
- Loss of subsidies to existing monopoly utilities which means that they are unable to compete with new providers.

The studies conclude that there is "strong potential for a 'win-win' situation from the trade liberalisation in environmental services", and emphasise that the "environmental services sector is directly involved in the delivery of improved environmental performance, environmental protection and sustainable

resource use". However, the potential negative impacts which may occur within developing countries are not given detailed consideration. In addition, a key conclusion from the OECD

(2000) study is that in order for the potential 'win-win' situation to be realised, liberalisation needs to be accompanied by complementary measures.

4.2 Sustainability Impact Assessment

As described in section 2, the structure of GATS allows countries to determine the scope and pace of their liberalisation commitments, and is based on the notion of progressive liberalisation and allowing 'appropriate flexibility' to developing countries in scheduling commitments (Mukherjee, 2005). Nevertheless, this flexibility can only be exercised in the context of the negotiations on the requests and offers received and made by member states.

To engage effectively in this process, developing countries need to assess the potential economic, social and environmental benefits and costs of liberalising their services sub-sectors before scheduling commitments. Developing countries have very diverse interests and concerns, and ideally this process of assessing the potential impact of services liberalisation will be undertaken by each country prior to engaging in negotiations. Here, increased use of impact assessment (IA) methods, such as sustainability impact assessment (SIA), can make an important contribution in informing policymakers of the likely impact of liberalisation on their national development goals (George and Kirkpatrick, 2004; Lee and Kirkpatrick, 2001). Better understanding of the likely consequences will enable developing countries to negotiate more effectively under the GATS, and to undertake appropriate regulatory and other mitigation measures to offset the potential adverse consequences of liberalisation.

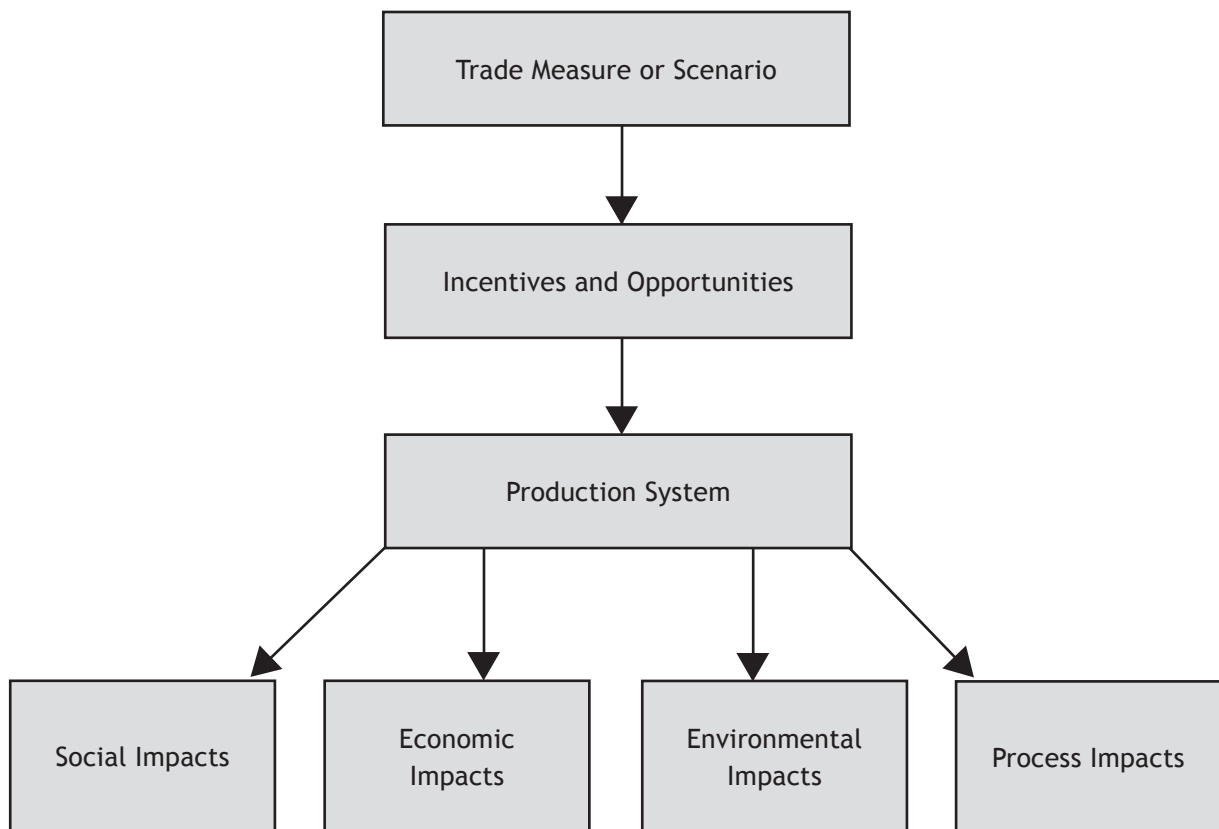
SIA provides a methodological framework for the systematic ex ante appraisal of the potential benefits and costs of adopting a proposed policy or measure. SIA is a tool that supports more informed decision-making based on the available evidence. In the context of

trade negotiations, SIA is increasingly being used to assess the likely economic, social and environmental effects of trade negotiations on the countries participating in the negotiations. The European Commission, for example, is committed to undertaking a SIA for all bilateral and multilateral trade negotiations, including the WTO Doha Development Agenda, with particular attention being given to the potential impacts on the EU's developing country trading partners (the SIA studies of EU trade negotiations are available on www.sia-trade.org).

A first step towards developing a schedule of commitments in environmental services would be to establish what policies and measures currently affect the environmental services sector, as a basis for engaging in the request-offer process of GATS negotiation. The Annex provides a checklist of GATS related issues and other questions relating specifically to environmental services-related measures.

The major part of international trade in environmental services takes place through commercial presence, with accompanying professional and technical staff. This is also the area where regulatory measures affecting trade are most likely to occur. These can include conditions for approval of foreign investment, limitations on the level of foreign ownership, on the ownership of specific assets and on the scope of a foreign company's operation. Table 2 contains examples of the general foreign investment provisions and requirements applicable to environmental services, and Table 3 lists examples of the main sector-specific regulations affecting foreign investment to establish commercial presence for environmental services.

Figure 1: Causal Chain Analysis of Impact of a Trade Measure on Sustainable Development



A change in trade policy will alter the incentive structures and opportunities in the markets directly and indirectly affected by the trade liberalisation measure specified in the scenario. A rules change, for example, alters the market conditions for producers and consumers. The new structure of incentives and market opportunities will induce a change in the economic behaviour of enterprises (producers) and households (consumers).

The next stage in the causal chain analysis is to assess the significance of the linkages from the changes in enterprise and household behaviour, to the economic, social, environmental and process indicators of sustainable development.

Figure 1 illustrates, in its simplest form, the causal chain approach which is used in SIA to assess significant linkages and final impacts on the sustainable development indicators. It does not convey the full complexity of the linkages between each stage in the causal chain. In particular, it abstracts from the intertemporal or

dynamic nature of the causal links between the initial change in the trade measure and the final impact in terms of sustainable development. The changes represented in Figure 1 do not occur instantaneously or simultaneously and the speed of adjustment will vary in different parts and at different stages in the causal chains. There may also be feedback processes during the intermediate stages of the cause-effect relationships, before the final impacts on sustainable development occur.

The SIA methodology uses a set of core indicators to show the impact of the trade measures on sustainable development in its economic, environmental and social dimensions. The inclusion of process indicators allows for the assessment of impacts on the key procedures, processes and practices that are needed for longer-term advancement of sustainable development. (For an example of the SIA methodology applied to environmental services, see Bisset et al 2003.)

5 MARKET STRUCTURE AND ENVIRONMENTAL SERVICES

Measurement of trade in services is inherently more difficult than measurement in trade in goods (OECD, 2002). As discussed in section 3, obtaining the required information on services trade is dependent on the extent to which there is a shared understanding of the concept and definition of services trade. It is difficult, therefore, to obtain a precise measure of trade in environmental services. The global environmental market as a whole (including environmental goods and services) has increased rapidly in recent years, from an estimated \$ 453 billion in 1996 to \$563 billion in 2002 (Environmental Business International). The EC, Japan and the United States account for about 65 percent of annual revenues. In 2002, the environmental services sector accounted for over 65 percent of the environment industry (Environmental Business International, cited in Grosso, 2005).

The traditional environmental infrastructure services of water, sewage and solid waste management represented over 80 percent of the environmental services market, although environmental non-infrastructure and support services are becoming more significant (Table 4).

Table 2: The Global Environmental Services Market, 2003

Water Distribution	\$89 bn
Solid waste management	\$141 bn
Env consulting and engineering	\$32 bn
Remediation services	\$30 bn
Analytical services	\$4 bn
Wastewater management	\$80 bn

Source: *Environmental Business International, cited in Geloso Grosso (2005).*

The categories represented in the table are those used by EBI and do not correspond with the sub-sectors used in the WTO Classification.

Rough estimates for the industry as a whole, including goods and services, suggest that the EU, the United States and Japan were the leading exporters in 2002, accounting for about 90 per cent of total exports. Developing countries are net importers of environmental services, though their exports are increasing, mainly to regional markets (Grosso, 2005). Most trade in environmental services takes place through commercial presence (Mode 3) with the accompanying presence of natural persons (Mode 4).

Both the water and waste management segments of the global environmental market are dominated by a relatively small number of multinational companies that are increasingly integrating their operations across water, waste and energy services. Table 5 shows the major water multinationals and Figure 2 maps the interlinking of the major companies through joint venture arrangements.

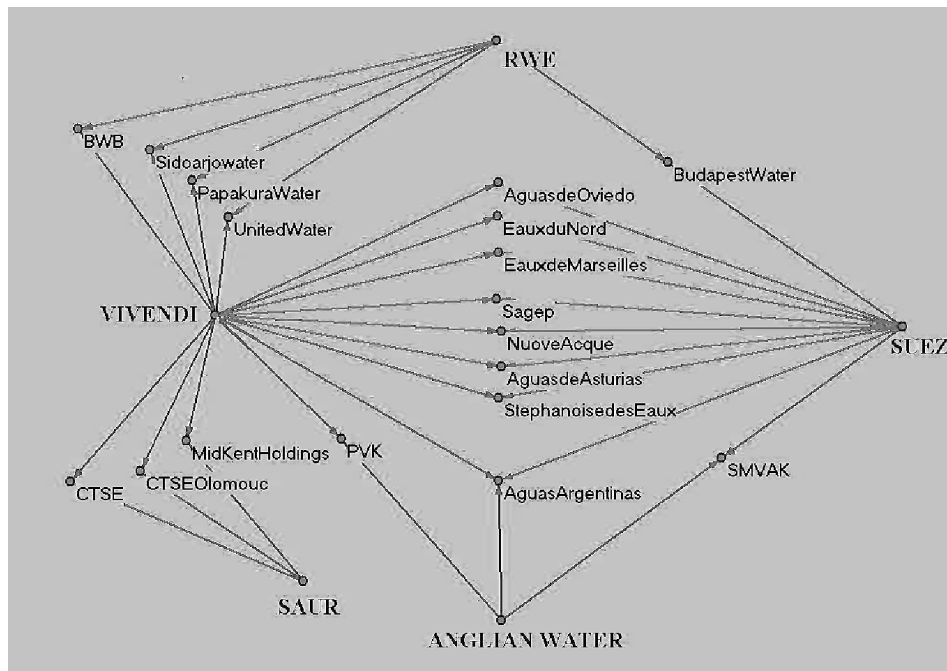
Table 3: Water multinationals: 2001

Company	Parent	Water Sales (Euros m.)
Vivendi Water*	Vivendi Universal	13640
Ondeo	Suez	10088
Thames	RWE	2746
SAUR	Bouygues	2494
Anglian	AWG	936
Cascal	Nuon	181
IWL	Bechtel	100

*called *Veolia Environment* since 2003

Source: *Hall (2003)*

Figure 2: Joint Ventures Between Leading Water Multinationals



Source: Hall, 2003.

Table 6 provides information on the major waste management companies and shows clearly the

integrated activities of multinationals providing environmental services.

Table 4: Waste Management Companies

Company	Parent	Home country	Turnover (€million)
Waste Management Inc	Waste Management Inc	USA	12,492
Allied Waste Industries	Allied Waste Industries	USA	5,708
Onyx	Vivendi Environnement	France	5,260
Sita	Suez	France	5,030
Republic Services	Republic Services	USA	2,103
RWE Umwelt	RWE	Germany	2,045
Cleanaway	Brambles	Australia	1,350
Rethmann	Rethmann	Germany	936
Shanks	Shanks Group	UK	814
Bifa	Severn Trent	UK	642

Sources: Davies, 2002

The largest environmental companies are concentrated in developed countries. However, participation from companies in developing

countries in the water and sewerage sub-sectors, as well as environmental support services like environmental consulting, is increasing (Zarrilli, 2003).

6 GATS, MODE 3 AND ENVIRONMENTAL INFRASTRUCTURE SERVICES

6.1 Environmental Infrastructure Services

Traditionally, environmental services have been considered mainly in relation to the operation of infrastructure facilities to provide water and waste treatment services, which account for as much as 80 per cent of the environmental services market. Historically, the major water and waste management services were largely provided by the public sector. However, over the past two decades, trade in environmental services has grown as a result of the adoption of policies aimed at encouraging private sector participation in the supply and management of environmental services (Kirkpatrick and Parker, 2005; Kirkpatrick, Parker and Zhang, 2006).

If a government decides to involve private firms, including foreign ones, in the provision of services in a monopoly or oligopoly market structure, it is desirable to establish a regulatory framework that can control for inefficient monopoly behaviour. Where the service is a basic good such as water for household use, the case for regulation is reinforced by the need to ensure that the welfare and social objectives for the sector are met. In the context of GATS, this highlights the contentious interface between market liberalisation and domestic regulation.

The preamble to the GATS recognises “the right of members to regulate, and to introduce new regulation, on the supply of services within their territories in order to meet national policy objectives and, given asymmetries existing with respect to the degree of development of services regulations in different countries, the particular need of developing countries to exercise this right”. Article VI (Domestic Regulation) aims to deal with impediments to trade and investment resulting from domestic regulation, but requires only that in sectors where commitments are undertaken, each member shall ensure that all measures of general application are administered, “in a reasonable, objective and impartial manner”. In other words, the provision recognises the right

of countries to apply domestic regulations and also their right to impose restrictions on trade, the only requirement being that countries only apply such regulations that do not constitute ‘unnecessary’ barriers to trade (Drabek, 2005).

It would seem, therefore, that commitments under the GATS to grant market access in sectors where domestic regulation plays an important role need not entail any weakening of national autonomy in regulatory policy. There are concerns, however, about the interpretation of the GATS, and the way in which it may be defined in the ongoing negotiations (Chandra, 2003; IIED-ICTSD, 2003). Despite the GATS’ explicit recognition of ‘the right of Members to regulate’, there is ambiguity as to the range of services covered by the GATS, in particular the boundary between ‘services provided in the exercise of government authority’, which are excluded from the agreement, and other services that are supplied on a ‘commercial basis’ or ‘in competition with one or more service suppliers’. This ambiguity arises particularly for services that are partly provided through ‘government authority’ and partly ‘commercially’ i.e. whether services provided using user fees or joint public-private ventures would qualify for the exemption. At present, this ambiguity may be in Members’ interests, in that governments are free to define and treat government services as they decide, and do not need to notify or explain their definition. However, if the negotiations move towards establishing a tighter definition, the autonomy of national governments over publicly provided services, such as water, could be undermined if the sector is scheduled.

Article VI.4 calls for further work on disciplines that would help ensure that regulatory measures affecting services are reasonable, objective and impartial, and spells out the objectives of possible new disciplines for domestic regulation measures. These would aim to ensure that

regulatory requirements are (i) based on objective and transparent criteria, such as competence and the ability to supply a service (ii) not more burdensome than necessary to ensure the quality of the service (iii) in the case of licensing procedures, not in themselves a restriction on the supply of the service (Mattoo and Sauve, 2003). In sectors where a member has undertaken specific commitments, pending the entry into force of disciplines developed for these sectors, the member must not apply licensing and qualification requirements or technical standards that may ultimately nullify or impair such specific commitments (Article VI.5).

In an effort to strengthen the application of the provisions on domestic regulation, a necessity test has been proposed which would leave governments free to deal with domestic economic and social regulation, provided that

any measures taken are no more burdensome than necessary to achieve the relevant objective. The measures are also likely to have to be non-discriminatory, unless a national treatment limitation had been entered for that measure in the commitment schedules. Important unanswered questions remain about the feasibility and desirability of incorporating a necessity test for services trade in the GATS provisions for domestic regulation (Chandra, 2003:2005-06).

The uncertainty surrounding the interpretation of key terms and conditions under Article VI reinforce the argument in the preceding section that it is important that governments understand the potential costs and benefits and associated uncertainty of liberalising services before they schedule sectors and submit commitments under the GATS.

6.2 Water and Wastewater Management Services

For water services (and for waste water management), which exhibit significant network economies of scale, it will typically be more efficient to have a single supplier of piped services to any particular area. Historically, local natural monopolies have been in public ownership and at present over 90 per cent of the world's piped water is delivered by publicly-owned bodies, at both national and municipal levels (OECDa, 2000).

Recent years have seen a movement towards more reliance on private markets to supply goods and services traditionally provided exclusively by the state (Table 7). This has resulted in an increase in private sector participation in water services provision in both developed and developing countries, particularly during the 1990s (World Bank, 2003a: 144; Baumert and Bloodgood, 2004). In 1997 the total figure for private investment had risen to US\$25bn., and by

Table 5: Types of Private Water and Sewerage Projects in Developing Countries, 1990-2002

Type	Total investment (US\$bn.)*	%	No. of Projects	%
Concessions	22.31	64	93	40
Greenfield	7.00	20	75	32
Operations and management	0.18	0.5	46	20
Divestiture	5.48	15.6	19	8

**This is the total invested in projects with private participation and not necessarily the private sector's financial commitment*

Source: calculated using data from the World Bank PPI Project Database, <http://rru.worldbank.org/PPI>

Table 6: Largest Investments in Water Services in Developing Countries, 1990-2002

	US\$bn	No. of projects
Argentina	7.23	10
Philippines	5.87	5
Chile	3.95	13
Brazil	3.17	33
Malaysia	2.75	6
China	1.93	44
Romania	1.04	3
Turkey	0.94	2
Indonesia	0.92	8

Source: Calculated using data from the World Bank PPI Project Database, <http://rru.worldbank.org/PPI>

the end of 2000, at least 93 countries had private sector involvement in some of their piped water services. However, a small number of countries accounted for most of the privatisation of water services and the figures are dominated by a few large contracts (Table 8).

Private participation in the water and sanitation sector in developing countries has been predominantly by foreign companies. The global water services market is dominated by a small number of multinational corporations, often working in consortia involving local enterprises, with the five biggest private sector companies (Suez, Veolia (formerly Vivendi Environment), Sociedad General de Aguas de Barcelona, Thames Water and Benpres Holdings), accounting for 45 per cent of private projects in the sector during the 1990s (World Bank 2003a:147).

While private sector participation in water services has been associated with a range of contractual arrangements, in practice, many contracts allow for private firms to provide the services but enable the government to remain the ultimate owner of the water system and retain responsibility for some new investment. While the forms of private participation in the water sector vary with the allocation of risk,

duration of the arrangement and assigning of asset ownership, all involve some form of contract with, or regulation by, the public sector.

The case for regulatory intervention in infrastructure markets (including water services) is premised on three main arguments relating to different aspects of market failure. First, the existence of significant economies of scale and scope in production leads to natural monopolies where higher unit costs occur if more than one firm competes in the market. Second, where one party to a transaction has more information than the other about the quantity or quality of the outputs to be transacted, a condition known as 'asymmetric information', then this party may act 'opportunistically', to exploit its superior knowledge and gain at the expense of the other party. The existence of externalities provides a third justification for economic regulation. Externalities are more pronounced in water than in other utility sectors, particularly in relation to health.

Water is essential both for life and as a natural resource. These characteristics of water provide additional arguments for regulation on social and environmental grounds. Where a service is regarded as meeting a basic need or entitlement, regulation will be needed to ensure universal access. This rationale for regulation has particular significance in the case of water services in developing countries, where improving access to safe, reliable and reasonably priced water services is a priority. Similarly, there is often a need for regulation based on environmental considerations where, for example, excessive extraction of water causes negative externalities by reducing the quality of the remaining water supplies.

Effective regulation achieves the overall welfare goals set down by the government for the regulator. Welfare goals will typically include economic, social and environmental objectives. In the developing country context, poverty alleviation and distributional objectives will be given a greater weighting than in developed countries. For example, expanding water services to communities and households

that are currently inadequately supplied will often be an important regulatory goal in lower-income countries. This suggests that regulation of the water sector in developing countries may face greater difficulties than in developed countries in balancing economic and social goals (Smith, 2000). What is deemed regulatory ineffectiveness in one context, such as a failure to remove cross-subsidies that favour the poor, may not be in another context where poverty reduction is a primary goal of public policy (World Bank, 2003b). In the case of the water sector, there will also be environmental considerations to be built into the regulatory interventions.

The capacity of governments to regulate effectively is critical. But many developing countries lack the administrative and institutional capacity to regulate as effectively as in developed economies. Utility regulators are typically concerned with the setting of prices and/or profits and with the quantity and quality of service. Although various differences exist in the precise instruments used (Kirkpatrick, Parker and Zhang, 2004, 2005), all methods of price, profit and service regulation are demanding in terms of their information needs. The design of regulatory measures in developing countries becomes more complex when the need to allow for the impact on the poor is recognised. For example, the evidence suggests that the price charged by private sector utilities for water services has often increased, with benefits to the company in terms of larger revenues and government in terms of higher tax revenues. But higher water prices have sometimes been accompanied by an extension of the network delivery to the poor (Estache et al. 2001; Clarke et al 2004) which makes the impact on the poor more uncertain. When not adequately supplied by the local water utility, the poor resort to relatively expensive water supplied by tankers and in bottled form. Alternatively, they face high opportunity costs in terms of the time and effort invested in seeking water supplies from local rivers, streams and lakes.

Ensuring that the poor are not disadvantaged by private sector involvement does require,

however, an institutional capacity to regulate private sector activities effectively. But in developing countries, regulating industries effectively is likely to be compromised by a lack of regulatory capacity, including limited access to skilled staff. Shortage of regulatory skills will constrain the regulatory authorities' ability to formulate and design appropriate regulatory measures.

Constraints on regulatory implementation and enforcement capacity are likely also to increase the degree of regulatory risk and transaction costs (Levy and Spiller, 1996). Regulatory risk is the outcome of uncertainty and inconsistency in the regulatory regime, which leaves private agents fearful of current and future regulatory decisions. Where regulatory risk is appreciable, investors will seek compensation in the form of a larger expected return leading to a higher cost of capital. The higher the cost of capital, the lower will be the rate of investment (Guasch and Hahn, 1999; Hahn, 1998). Transaction costs in water contracting rise the more uncertain is the regulatory environment.

An important policy implication that follows from the regulatory capacity constraints existing in many developing countries is that the optimal regulatory measures to be adopted need to be developed in the specific context of these institutional constraints. Recent research relating to utilities' privatisation in developing countries has shown that the sequencing of privatisation and regulation reforms has a significant impact on the economic outcomes. In particular, the establishment of an effective, independent regulator before embarking on privatisation is associated with more favourable outcomes in terms of capacity expansion, service penetration and productivity (Zhang, Parker and Kirkpatrick, 2005).

The same considerations apply to the pricing models that are used by regulators in the water and wastewater sectors (Kirkpatrick, Parker and Zhang, 2005). In developing economies, regulators face a greater dichotomy than in developed countries between promoting economic and social goals because of endemic poverty (Smith, 2000).

6.3 Summary

The implications for the adoption of GATS liberalisation in infrastructure environmental services are as follows. First, a regulatory institutional structure is needed to ensure compliance with economic, social and environmental objectives. Second, regulatory capacity needs to be strengthened and effective regulatory institutions established. Market liberalisation in the context of non-competitive markets and institutional and regulatory deficiencies is unlikely to yield the standard economic performance benefits of trade liberalisation and may worsen inequalities in the distribution of services and in the access of the poor to the services. Third, developing countries with limited regulatory resources should adopt a cautious approach to liberalisation of infrastructural environmental services, by sequencing the liberalisation programme to match the development of regulatory institutional capacity.

Opening up the infrastructural environmental

services sector in developing countries within the GATS multilateral trade and investment framework offers significant potential benefits in terms of investment, technology and management expertise. But to realise these potential benefits requires an effective regulatory framework, which can control anti-competitive behaviour, safeguard the public interest and contribute to social objectives, in terms of poverty alleviation and equity. Where these regulatory frameworks are absent or ineffective, the gains will be less, the outcome for sustainable development more uncertain, and public opposition more intense. While the GATS agreement acknowledges the right of WTO Members to regulate, and Members have the discretion to impose limitations on national treatment and market access, in the absence of sustained international support to build domestic regulatory capacity in developing countries, progress in reaching agreement on international rules for the liberalisation of trade in water services is likely to be slow.

Table 7: General ('Horizontal') Foreign Investment Provisions and Requirements

- Full foreign ownership not permitted, joint venture with local partner mandatory
- Foreign investment approval based on policy guidelines and overall national interest considerations
- Foreign investment approval based on economic needs test or 'net national benefit' criteria
- Foreign investment approval subject to agreeing to specific performance requirements, e.g. export achievements, use of local goods, services or personnel, transfer of technology
- Only acquisition of existing companies permitted, with foreign equity limited to minority stake
- Reservations of some sectors or activities, privatised state-owned enterprises, or government-contracted services, for investment only by nationals.

Source: OECD 2000:39

Table 8: *Environmental Services: Sector-specific Requirements Relating to Foreign Establishment/Investment*

- Economics needs test for approval of foreign investment in solid waste management services, air pollution services, and technical testing and analysis services;
- Numerical quotes for the number of operating licenses available for providers of industrial waste water treatment services, applies to local and foreign investors;
- Only joint ventures permitted for supply of environmental, architectural and engineering, construction and related engineering services
- Regulation of contracts by value and number through an annual licensing system in the construction and engineering sector
- Nationality and/or residency requirements for foreign establishment/investment e.g. for companies operating public utilities; or to gain the right to practice in professional services such as architecture and/or engineering
- Requirement that foreign businesses hire specific ratios of domestic staff to foreign staff
- Reservation of some service sectors or activities for nationals or residents.

Source: OECD 2000:40

Supply of environmental services by Mode 3 will often be accompanied by Mode 4 supply, to supply skilled and professional services directly to the project and to maintain local offices. Restrictions on Mode 4 may arise from a country's overall immigration policy, or specific labour market conditions. Consequently, specific commitments under the GATS tend to be made at the 'horizontal' level (i.e. applied to all service sectors), with sector-specific qualifications. Common examples of specific conditions for approval of entry of service suppliers include: labour market testing; residency requirements for intra-corporate transferees and requirement that the foreign company employ specific numbers of local staff; authorisation subject to non-availability of locals; authorisation subject to performance requirements (employment creation, transfer of technology or ongoing level of investment).

The SIA methodology for *ex ante* appraisal involves an initial screening and scoping stage, followed by a detailed assessment of the likely impacts (George and Kirkpatrick, 2004).

The screening and scoping stage involves the selection of the measures affecting trade in environmental services that are likely to have significant economic, social and environmental consequences if they are scheduled in GATS negotiations. The subsequent impact assessment stage involves a detailed examination of the potentially significant effects of the trade measure on sustainable development. Causal chain analysis (CCA) is used to identify the significant cause-effect links between the proposed trade measure change scenario and its eventual economic, social and environmental impacts. The aim of CCA is to distinguish the *significant* cause-effect links in the chain, where the analysis is undertaken in logical sequence, from 'cause' to 'effect'. The explanation of the causal chain analysis is derived from theoretical reasoning and expert interpretation of the evidence derived from existing studies.

The causal chain analysis can be represented in the form of a causal chain diagram, which shows each of the main linkages in their logical order of causality (Figure 1).

7 GATS, MODE 4 AND EXPORTS OF ENVIRONMENTAL SERVICES

As a group, developing countries have experienced a significant increase in their service exports and their share in world trade in services has increased from 16 per cent in 1990 to 23.5 per cent in 2002 (Neilson and Taglioni, 2004; Marchetti, 2004:25). At the same time, developing countries' share of global outward foreign direct investment (FDI) in services has increased from 1 per cent in 1990 to 10 per cent in 2002, faster than in other sectors (UNCTAD, 2004). In the environmental services sector, there is an upward trend in participation by companies from developing countries, mainly in the water and waste sub-sectors, but also in other non-infrastructure environmental services (OECD, 2000; Steenblik et al 2005). In most cases, these tend to be Asian or Latin American countries that have themselves acquired technological and services capacities through their experience of participating in joint ventures in their own countries, but in some cases, including China, Brazil and India, the export capacity is based mainly on indigenous knowledge and experience. Cuba, for example, has supplied environment-related services in the form of studies, assessments and consultancies to various countries in Latin America (UNCTAD, 2003). In Brazil, a public company, CETESB, developed the capacity to adapt imported environmental technologies and has provided consultancy services to other Latin American countries (Argentina, Uruguay, Paraguay, and Mexico) (Zarrilli, 2003). Increasingly, firms are developing export opportunities by providing an integrated package of environmental goods and services. In Malaysia, a private company provides integrated water services domestically and to other countries in the Asia-Pacific region. Another Malaysian company, which operates engineered water treatment systems, has increased its capabilities by establishing a manufacturing facility which gives it the capacity not only to design and operate its water treatment services, but also to manufacture them. The company has expanded its activities in Indonesia and Thailand through acquisitions (Zarrilli, 2003).

Environmental services supplied primarily through Mode 3 will often require market entry for personnel associated with the establishment of foreign companies. In addition, there will be increased demand for environmental support services such as construction, engineering, legal and consulting services.

Greater freedom for the temporary movement of individual service providers is negotiated under Mode 4 of the GATS. Mode 4 is defined as the supply of a service by a service supplier of one WTO member, through the temporary presence of natural persons of a member in the territory of another Member. Mode 4 service suppliers generally gain entry for a specific purpose, are confined to one sector, are temporary (the time frame is left to the discretion of each country and is set out in Members' commitments on Mode 4), and are at all skill levels (World Bank 2004a:167).

Commitments made so far under Mode 4 have been limited and account for less than 2 percent of total value of services trade. Conditions for Mode 4 tend to be more restrictive than for other modes. Members' schedules are mostly biased in favour of intracorporate transferees, so that the value of these commitments is dependent on access conditions under Mode 3. More than 40 percent of all current horizontal commitments relate to this category of workers, and a further 50 percent of commitments cover executives, managers, specialists and business visitors (Marchetti 2004:27). Among the main service sectors, tourism has drawn the highest number of commitments, where almost all developing countries have made commitments in tourism services, reflecting their comparative advantage in this area. Most of these offers relate to Mode 2 and only about a quarter of offers in tourism make Mode 4 related improvements.

The Mode 4 offers that have been made do not address the major issues raised by developing countries, including the inclusion of categories pertaining to semi and less skilled service providers. Most of the additional categories

pertain to intra-corporate transferees (tied to Mode 3) and highly skilled professionals. Few offers include new semi-skilled and less-skilled categories, remove horizontal and sectoral limitations, or address work permit and visa procedures. Taken as a whole, the current offers do not appear to represent a significant improvement over existing Mode 4 commitments (UNCTAD, 2005: 13).

Mattoo (2003) identifies five key impediments to Mode 4 trade. First, quantitative restrictions on the movement of natural persons with a view to protecting local labour markets prevent the movement of service providers. Second, economic needs tests and labour certification require prospective employers to certify that no domestic workers were available prior to hiring the foreign worker. There is often a lack of transparency and a high degree of administrative discretion applied to such tests. Third, the issuance and renewal of visas and work permits may be expensive and lack transparency. Fourthly, social security contributions, double taxation and non-portability of pension and other social contributions are a constraining factor. Finally, lack of recognition of qualifications, educational degrees, training and experience, especially in the regulated professions, prevent the movement of foreign workers.

Discussions related to Mode 4 liberalisation have focused on the following issues:

- Greater clarity and predictability in WTO members' commitments
- Greater transparency
- Adoption of a classification system based on commonly-used categories of Mode 4 services suppliers, as found in Members' existing Schedules. This would allow for clearer identification of movement of workers which is de-linked from commercial presence or investments, such as independent professionals and workers moving abroad on the basis of services contracts rather than as part of intra-corporate movement. This delineation would, from the perspective of many developing country Members, facilitate

negotiation of criteria which would permit, rather than preclude, entry of workers of various skill levels

- Enhanced market access commitments. This includes commitments for particular service sectors in high demand; more access for personnel of varying skill levels; and reduction in the categories subject to economic needs tests
- Ensuring temporariness of stay by Mode 4 service suppliers
- Regulatory measures which unduly restrict ability to enter and supply services in host markets.

These issues and concerns have been reflected in the joint proposals on Mode 4 made by a group of developing countries (Bolivia, Brazil, Chile, China, Columbia, Cuba, Dominican Republic, Ecuador, Egypt, Guatemala, India, Indonesia, Mexico, Nicaragua, Pakistan, Peru, Philippines, and Thailand) in 2004 (WTO, 2004). However, these proposals have a high degree of generality and lack specific detail which could provide the basis for multilateral negotiation. Subsequent proposals from these countries suggesting specific elements to improve transparency (WTO, 2005) went into greater detail, and a proposal by Colombia, Peru and the Philippines in 2005 outlined additional specific commitments which may be undertaken by Members to ensure that regulatory measures do not impede trade through Mode 4.

An important factor in determining the degree of Mode 4 liberalisation that is offered by developed countries is the gap between labour market demand and the domestic availability of certain skills in the host countries. Thus, the movement of service supplying personnel remains a crucial means of delivery for the Indian software industry where about 60 per cent of Indian exports are supplied through the temporary movement of programmers to overseas sites of the client (Mattoo and Carzaniga, 2003). Similarly, in the caring occupations a shortage of domestic labour has led to increased demand for Mode 4 trade.

Turning to Mode 4 liberalisation in environmental services, it will be important for a developing country to undertake an assessment of the potential for, and impacts of, Mode 4 liberalisation before formulating an offer or commitment. In doing so, the following issues, *inter alia*, will need to be considered:

A. The Domestic Context

1. What is the economy's supply capacity for Mode 4 in the three main areas of environmental services (i.e. environmental infrastructure services; non-infrastructure environmental services; and related services with an environmental component)?
2. What is the level of skills and qualifications in the domestic environmental services?
3. What are the potential costs (e.g. loss of skilled labour) and benefits (e.g. remittances) to the domestic economy of increased Mode 4 exports?

B. The International Context

1. Are there restrictions on the movement of intra-corporate transferees in environmental services?
2. Is the movement of Mode 4 labour in environmental services subject to recognition requirements?
3. Is the movement of Mode 4 labour in environmental services subject to economic needs tests?

World welfare gains from the liberalisation of the movement of workers could amount to US \$156 billion per year if developed countries increased their quotas for the entry of workers from developing countries by 3 per cent (Winters et al 2002). Another study computed gains of some \$200 billion annually if a temporary work visa scheme could be designed and adopted multilaterally (Rodrik, 2002). The potential gains could be

larger than the total gains expected from all the other negotiating items in current WTO negotiations (UNCTAD, 2005). Yet, progress in Mode 4 has been minimal since the Doha Ministerial Declaration.

There are various explanations for this virtual standstill. Governments are reluctant to undertake permanent commitments when employment demand varies with cyclical conditions and when there are domestic difficulties of integrating foreign workers into the labour force and society. A second constraint is linked to the multilateral nature of WTO commitments, whereas there is often greater political support for regional or bilateral initiatives to liberalise the entry of foreign labour. Thus, while the potential gains from increasing temporary mobility of labour, including service suppliers under GATS Mode 4 are large, 'expectations of far-reaching forward movement need to be tempered because of the political sensitivity of such trade in receiving countries' (World Bank, 2004:144).

One way of encouraging progress in the Mode 4 negotiations may be to focus on areas where evidence of the potential gains to the 'exporting' and 'importing' countries can be clearly shown. At the time of the Uruguay Round, a few stakeholders effectively devoted resources to demonstrating the mutual gains that could be realised from Mode 4 liberalisation, particularly in the software and electronic commerce field. The adoption of a similar process of undertaking a comprehensive assessment of the potential benefits and costs of Mode 4 liberalisation in particular sub-sectors of environmental services would provide a more solid platform from which to engage in meaningful discussions on Mode 4 liberalisation in environmental services.

8 CONCLUSIONS

The importance of many environmental services to human wellbeing is recognised by the fact that they figure prominently in the Millennium Development Goals. GATS liberalisation of environmental services can contribute to the advancement of these international development goals. But to do so effectively requires policy coherence across a spectrum of trade liberalisation areas within the WTO negotiations framework, and between the various international bodies with policy responsibilities in this area. Trade liberalisation measures in the area of environmental services need to be designed in a way that is consistent with, and contributes to, the wider goals of poverty reduction and sustainable development.

Further clarification of the GATS rules as they affect environmental services, particularly water services, can be regarded as an enhancing measure. Continued public ownership and supply of services is permitted under GATS and it also recognises the right of Members to regulate the supply of services. Furthermore, Members are permitted to place limitations on their national treatment and market access commitments, in the form of exceptions to the schedule of commitments. Nevertheless, the interface between domestic regulation and trade liberalisation in environmental services has generated considerable public debate.

Disciplines on domestic regulation (Article VI) are considered in the WTO Working Party on Domestic Regulation. Further clarification is desirable in a number of areas to reduce the risk and uncertainty of making GATS commitments, in particular: criteria to be used in judging that regulation measures “are administered in a reasonable, objective and impartial manner”; permissibility of cross-subsidies, price controls and universal service provisions; compensation principle if services commitment is modified or withdrawn; criteria to be used in applying a necessity test; and clarification of environmental goods classification.

The realisation of the potential benefits for sustainable development from environmental services liberalisation requires countries to give

careful consideration to the likely economic, social and environmental impacts. This will allow for the identification of sectors and modes of supply where liberalisation is compatible with national development goals. Effective mitigation measures, which may include a regulatory institutional framework which can safeguard the public interest, are an important precondition for ensuring an outcome that contributes to sustainable development.

The size of the potential gains from environmental services liberalisation will depend to a significant extent on complementary domestic market reforms, which strengthen the economic environment for private investment and involvement, and support market competition. Particularly in monopolistic markets, regulation is required to ensure that the potential gains from services liberalisation are maximised. Appropriate institutional and policy frameworks that take into account potential economic, environmental and social impacts of liberalisation are necessary precursors to good policies, but capacity building is often needed to support the establishment of such institutions.

In the case of infrastructural environmental services such as water and wastewater management, the public sector will retain responsibility for ensuring that public interests are met, irrespective of whether supply is by public or private sector enterprises. This public interest may cover universal service provision, pricing, and subsidies for consumers. With increased private-sector involvement and leasing arrangements, responsibility for ensuring that public interest obligations are met moves to the regulatory authorities. Experience in both developed and developing countries demonstrates the risk of regulatory failure, resulting from regulatory capture or lack of regulatory capacity.

Where regulatory frameworks and other mitigation measures are absent or ineffective, the gains from liberalisation of environmental services are less likely to be achieved and the outcomes for sustainable development become more uncertain.

ANNEX

1 Checklist for Environmental Services Negotiators

(Source: Grosso, M. (2005) 'Managing Request -Offer Negotiations under the GATS: The Case of Environmental Services' OECD Trade Policy Working Papers, No 11, OECD: Paris)

A.1: GATS-Related Issues

<p>a) Measures affecting cross-border supply (Mode 1)</p>	<ol style="list-style-type: none"> 1. Can non-resident suppliers of environmental and environment-related services serve the market on a cross-border basis (i.e. without an established presence)? Is it necessary to channel those transactions through intermediaries? 2. What types of environmental services are allowed, or restricted, as regards cross-border supply? 3. Are there any restrictions on the electronic transmission of environmental and related services by non-established foreign service providers? 4. Are consumer access or connection to internet or other electronic networks available through monopoly or exclusively authorised providers? 5. Is the transfer of capital, payments and/or use of credit cards for such transactions permitted? Is it subject to authorisation? 6. If entry is restricted, what are the reasons provided by the government? 7. Where and how clearly are such limits spelled out?
<p>b) Measures governing commercial presence/ownership (Mode 3)</p>	<p>Private participation</p> <ol style="list-style-type: none"> 1. Is there a government monopoly in the environmental services sector such that private investment is not permitted? If so, in which sub-sectors? 2. For environmental infrastructure services, how is private participation allowed (concessions, BOTs, etc.)? 3. How is it regulated at the central and local levels? What are the procedures and criteria used? Is preference given to any particular enterprise or group of enterprises? Is it a transparent process? <p>Foreign ownership</p> <ol style="list-style-type: none"> 1. In which segments is foreign ownership allowed in the provision of environmental services? 2. When laws restrict foreign shareholdings in local environmental companies, what is the maximum foreign equity permitted or the minimum local shareholding? <p>Screening laws</p> <ol style="list-style-type: none"> 1. Are proposed foreign investments in the environmental sector subject to screening by a specialised authority in the host State? 2. Are there economic needs tests for approval of foreign investment? If so, in which sub-sectors? Are these tests transparent? 3. Are there nationality or residency requirements for foreign establishment investment (e.g. to gain the right to practice environment-related professional services such as engineering)? 4. Which authorities are charged with the investment screening? 5. Which criteria apply in evaluating applications for approval? 6. Are investors offered rights of judicial review against unfavourable decisions by the screening authorities? Are clear administrative guidelines issued from which investors can reasonably predict the response of host State authorities to an investment proposal? <p>Legal and joint venture requirements</p> <ol style="list-style-type: none"> 1. Are environmental firms required to establish locally through a particular legal form of establishment (i.e. subsidiary, branch, representative office)? 2. Are foreign established companies subject to specific performance requirements, including (i) licensing requirements and technology transfer rules; (ii) remittance and foreign exchange restrictions limiting external financial transfers; and (iii) local hiring and sourcing requirements? 3. Is entry of the foreign environmental firm conditional on the substantial involvement of local participants in the ownership and management of the investment project (joint venture requirement)? 4. Is local control (e.g. 51% or more of the equity contribution) required over the (equity/contractual) joint venture? Does the law provide for progressive increase in control over the venture? 5. Are there requirements regarding the composition of the board of directors? 6. What is the prescribed legal form of the joint undertaking (general partnership, professional corporation or limited liability company)?

<p>c) Measures relating to licensing</p>	<ol style="list-style-type: none"> 1. What laws and regulations discipline licensing of environmental activities? 2. What types of licenses and regimes apply in different segments? What is the rationale for such licensing? 3. Who issues and monitors licenses? 4. Are licenses automatic or not automatic? 5. Are licenses open ended or for a definite time? 6. What licensing procedures (e.g. application or bidding procedures) are applied? Under what circumstances are different procedures used? 7. What provisions apply to modification, termination and revocation of licenses?
<p>d) Measures governing the movement of natural persons (Mode 4)</p>	<ol style="list-style-type: none"> 1. How are entry and work permits obtained? 2. Are there any restrictions on the movement of intra-corporate transferees? What about contractual service suppliers? For the latter, do the same restrictions apply to employees of firms and to independent professionals? 3. Do the restrictions apply to natural persons seeking long-term establishment or to individuals travelling for business purposes for short periods of time? 4. Is the entry of foreign experts subject to economic needs tests? Are such tests transparent? 5. Are there residency or nationality requirements with respect to certain categories of personnel employed by locally established environmental or environment-related firms? 6. Are equivalent professional qualifications for environmental support services obtained abroad recognised in the importing country? 7. Are there prior experience requirements or post qualification experience attached to the granting of visas?
<p>e) Preferential liberalisation measures</p>	<ol style="list-style-type: none"> 1. Are there any preferential agreements affecting the supply of environmental and support services? Which measures are subject to preferential treatment? Do preferential measures also apply to the movement of natural persons? 2. What conditions must foreign suppliers of environmental support services fulfill to meet the requirements of existing mutual recognition agreements to which host country providers are parties to? 3. Does the importing country maintain preferential access arrangements for developing country-service providers?

2 Other Issues

a) Government procurement	<ol style="list-style-type: none"> 1. What procurement procedures are applied for environmental services (e.g. tendering)? Under what circumstances are different procedures used? 2. How are intended procurements publicised? 3. Are there registration, residence or other requirements for potential suppliers? 4. Is procurement subject to (i) local content; (ii) technology transfer; (iii) local employment; (iv) investment or local presence in the importing country? 5. Do procuring entities grant price advantages to domestically-owned companies over foreign companies? 6. Are there lists of approved suppliers? If so, what are the procedures for checking the capability of firms applying for inclusion on tenderers' lists? 7. What criteria are taken into account in the award of tenders? Are criteria for award of contracts made available in advance to potential suppliers? How are tenders received, registered and opened? 8. Are entities required to publish details of contracts awarded or notify unsuccessful tenderers? Are entities required to publish, or provide to unsuccessful bidders, pertinent reasons why their bid was rejected? 9. What, if any, are the procedures available for parties, domestic and foreign, to lodge complaints against the award of a contract? 10. Does the procurement regime distinguish between the procurement of environment-related goods and services? If so, what rules apply in cases of joint procurement involving both goods and services?
b) Regulatory measures	<ol style="list-style-type: none"> 1. Which authorities are in charge of adopting and implementing regulation of environmental services? 2. Must the authorities follow detailed standards or rules in setting prices for environmental utilities? What is the price mechanism used (e.g. price cap or cost plus)? 3. What measures (at which level) and mechanisms are in place to assure fulfilment of universal access to basic environmental services? In which sub-sectors? Are they objective and transparent? Are foreign service suppliers subject to different or additional conditions than domestic suppliers in relation to public service obligations? 4. Which regulations are in place to ensure environmental service quality? Which technical standards apply? Are they transparent? Are alternative, more efficient ways to meet the standards been considered? 5. How is uncompetitive behaviour, such as abuse of monopoly power, addressed? 6. Are these institutions independent from the government? How is accountability ensured? 7. Are price changes phased in and the public informed about the reasons for the change? Are there any programmes in place to promote the participation of consumers and other stakeholders in regulation?
c) Temporary entry for services-related tools of the trade?	<ol style="list-style-type: none"> 1. Are there any restrictions on the temporary entry of service-related tools of the trade (e.g. construction equipment, technical and training material or engineering software and design tools)? 2. Do restrictions apply to the temporary intra-firm transfer of service-related equipment? 3. Do restrictions on services-related tools of the trade apply to contractual service suppliers? 4. Do customs procedures exist in the importing country allowing for duty-free temporary admission of services-related tools of the trade?
d) Other relevant measures	<ol style="list-style-type: none"> 1. Are there subsidies for environmental services providers? In which segments? 2. Are there IPR laws or regulations which may inhibit the transfer of environmentally sound technology?

REFERENCES

- Adlung, R. (2004) 'The GATS Turns Ten: A Preliminary Stocktaking' *World Trade Forum*, Economic Research and Statistics Division. WTO: Geneva.
- Andrew, D. (2000) 'Services Trade Liberalisation: Assessment the Environmental Effects'. Paper presented at the Conference on Trade, Poverty and the Environment: Methodologies for Sustainability Impact Assessment of Trade Policy. University of Manchester, November.
- Araya, M. (2003) 'WTO Negotiations on Environmental Goods and Services: Maximising Opportunities? Global Environment and Trade Study, Yale Center for Environmental Law and Policy.
- Baumert, J. and Bloodgood, L. (2004) 'Private Sector Participation in the Water and Wastewater Services Industry' Office of Industries Working Paper no ID-08. Washington DC, US International Trade Commission.
- Bisset, R., Flint D., Kirkpatrick, C., Mitlin D., and Westlake K. (2003) *Sustainability Impact Assessment of Proposed WTO Negotiations: Environmental Services*. Report to the European Commission. (www.sia-trade.org).
- Chandra, R. (2003) 'Social Services and the GATS: Key Issues and Concerns' *World Development*, 31 (12): 1997-2012.
- Civil Society Submission (2003) To the World Trade Organisation's 5th Ministerial Conference in Cancun, 10-14 September.
- Clarke, G., Kosec, K., and Wallsten, S. (2004) 'Has Private Participation in Water and Sewerage Improved Coverage? Empirical Evidence from Latin America?' *World Bank Policy Working Paper 3445*, November. Washington DC: World Bank.
- Davies, S. (2002) 'Waste management multinationals 2002', Public Services International Research Unit (PSIRU), University of Greenwich, London.
- Drabek, Z. (2005) 'Limits to Harmonization of Domestic Regulations' Mimeo.
- Estache, A., Gomez-Lobo, A. and Leipziger, D. (2001) 'Utilities Privatization and the Poor: Lessons and Evidence from Latin America', *World Development*, 29, (7): 1179-1198.
- European Commission (2003) Communication from the European Communities and its Member States, Trade in Services, Conditional Initial Offer, 10 June TN/S/O/EEC WTO: Geneva.
- George, C. and Kirkpatrick, C. (2004) 'Trade and Development: Assessing the Impact of Trade Liberalisation on Sustainable Development', *Journal of World Trade*, 38,3, pp.441-469.
- Grosso, M. (2005) 'Managing Request-Offer Negotiations under the GATS: the Case of Environmental Services', *OECD Trade Policy Working Paper No 11*, TD/TC/WP(2004)8/FINAL. OECD: Paris.
- Guasch, J.L. and Hahn, R.W. (1999) 'The Costs and Benefits of Regulation: Implications for Developing Countries', *World Bank Research Observer*, 14, (1): 137-58.
- Hall, D. (2003) 'Water multinationals in retreat - Suez withdraws investment', *Public Services International Research Unit* (PSIRU), University of Greenwich, London.
- Hahn, R.W. (1998) 'Policy Watch: Analysis of the Benefits and Costs of Regulation' *Journal of Economic Perspectives*, 12, (4): 201-210.
- Harris, C. et al (2003) 'Infrastructure Projects: A Review of Cancelled Private Projects' Public Policy for the Private Sector, vol.252 World Bank: Washington DC.
- Hoekman, B. (1996) 'Assessing the GATS' in Martin, W. and Winters, A. (eds) *The Uruguay Round and the Developing Countries*. World Bank and Cambridge University Press: Washington DC and Cambridge.
- Hoekman, B., Matoo, A. and English, A. (eds) (2002) *Development, Trade and the WTO*, World Bank: Washington DC.
- ICTSD (2006a) 'EC, Others Table Request for Liberalisation Of Environmental Services' *BRIDGES Trade BioRes*, Vol.6, No.4.
- ICTSD (2006b) 'Developing Countries Present Views on Environmental Goods' *BRIDGES Trade BioRes*, Vol.6, No.11, accessible at <http://www.ictsd.org/biores/06-06-16/story1.htm>.
- IIED - ICTSD (2003) 'Water, Development and the GATS', *Policy Views on Trade and Natural Resource Management*, September, London: International Institute for Environment and Development and International Centre for Trade and Sustainable Development.
- Johnstone, N. and Wood, L. (2001) 'Introduction', in N. Johnstone and L. Wood (eds), *Private Firms and Public Water: Realising Social and Environmental Objectives in Developing Countries*, Cheltenham: Edward Elgar.
- Kirkpatrick, C. and Lee, N. (2001) *Win-Win Scenarios for Multilateral Trade Liberalisation*, Department for Environment, Transport and the Regions, London.

- Kirkpatrick, C. and Lee, N. (2002) *Further Development of the Methodology for a Sustainability Impact Assessment of Proposed WTO Negotiations* (Final Report), IDPM, University of Manchester.
- Kirkpatrick, C., George, C. and Scricciu, S. (2004) 'The Implications of Trade and Investment Liberalisation for Sustainable Development: Review of Literature', *Institute for Development Policy and Management* (IDPM), University of Manchester, for the UK Department of Environment, Food and Rural Affairs (Defra), July.
- Kirkpatrick, C. and Parker, D. (2005) 'Domestic Regulation and the WTO: The Case of Water Services in Developing Countries', *World Economy*, 28(10):1491-508.
- Kirkpatrick, C., Parker, D. and Zhang, Y-F. (2004) 'Regulatory Impact Assessment in Developing and Transitional Economies: A Survey of Current Practice', *Public Money & Management*, vol.24, no.5, pp.291-296.
- Kirkpatrick, C., Parker, D. and Zhang, Y-F. (2005) 'Price and Profit Regulation in Developing and Transition Economies, Methods Used and Problems Faced: A Survey of the Regulators', *Public Money & Management*, vol.25, no.3, pp.99-106.
- Kirkpatrick, C., Parker, D. and Zhang, Y-F. (2006) 'State versus Private Sector Provision of Water Services in Africa' *World Bank Economic Review*, vol.20, no. 1, pp. 143-163.
- Kirkpatrick, C. Parker, D. and Zhang, Y-F (2006a) 'Regulation and Foreign Direct Investment in Infrastructure: Does Regulation Make a Difference?' *Transnational Corporations*, vol. 15, no. 1.
- Krajewski, M. (2004) 'Environmental Services of General Interest in the WTO: No Love at First Sight', *Journal of European Environmental and Planning Law*, vol.2, pp.103-115.
- Lamy, P. (2005) 'Trade can be a friend, not a foe, of conservation'. Speech at WTO Symposium on Trade and Sustainable Development. 10-11 October 2005.
- Lee, N. and Kirkpatrick. C. (2001) 'Methodologies for sustainability impact assessment of proposals for new trade agreements', *Journal of Environmental Assessment Policy and Management*, November.
- Levy, B. and Spiller. P. (eds) (1996) *Regulations, Institutions and Commitment*, Cambridge: Cambridge University Press.
- Marchetti, J.A. (2004) 'Developing Countries in the WTO Services Negotiations' *Staff Working Paper ERSD-2004-06*, Economic Research and Statistics Division, World Trade Organisation: Geneva.
- Mattoo, A. (2003) 'Introduction and Overview' in A. Mattoo and A. Carzaniga (eds) *Moving People to Deliver Services* New York and Washington DC: Oxford University Press.
- Mattoo, A. and Carzaniga, A. (eds) (2003) *Moving People to Deliver Services*, New York and Washington DC: Oxford University Press.
- Mattoo, A. and Suave, P. (2003) *Domestic Regulation and Services Trade Liberalisation*. World Bank: Washington DC.
- Mukherjee, A. (2005) 'Developing Countries and GATS Negotiations: The Case of India' *Global Economy Journal*. vol.5, issue 2.
- Neilson, J. and Taglioni. D. (2004) 'Service Trade Liberalisation: Identifying Opportunities and Gains' *OECD Trade Policy Working Paper no 1*, TD/TC/WP(2003)/FINAL, 6. OECD: Paris.
- OECD/Eurostat (1999) *Environmental Goods and Services Industry Manual for the Collection and Analysis of Data*. OECD: Paris.
- OECD (2000) *Environmental Services: The 'Win-Win' Role of Trade Liberalisation in Promoting Environmental Protection and Economic Development*. COM/TD/ENV(99)93/FINAL.
- OECD (2000a) *Environmental Goods and Services. An Assessment of the Environmental, Economic and Development Benefits of Further Global Trade Liberalisation*. Joint Working Party on Trade and Environment. COM/TD/ENV(2000)86/FINAL. OECD: Paris.
- OECD (2002) *Assessing the Environmental Effects of Services Trade Liberalisation: A Methodology* COM/TD/ENV(2000)123/FINAL. OECD: Paris.
- Rodrik, D. (2002) 'Feasible Globalisation' *NBER Working Paper 9129*. Cambridge Mass.
- Smith, W. (2000) 'Regulating Infrastructure for the Poor: Perspectives on Regulatory Design', *mimeo*, Washington DC: World Bank.
- South Centre (2005) 'GATS Conditions to Achieve Developing Country Policy Objectives' *T.R.A.D.E. Occasional Paper no 13* (March) Geneva.
- Spiller, P.T. and Savedoff, W. (1999) 'Government Opportunism and the Provision of Water', in W.D. Savedoff and P.T. Spiller (eds) *Spilled Water: An Institutional Commitment to the Provision of Water Services*, Washington, DC: InterAmerican Development Bank.
- Steenblik, R. Drouet, D. and Stubbs, G. (2005) 'Synergies Between Trade in Environmental Services and Trade in Environmental Goods', *OECD Trade and Environment Working Paper No 2005-01*.Paris: OECD.

- Tuerk, E., Ostrovski, A. and Speed, R. (2005) 'GATS and its Impact on Private Sector Participation in Water Services' in Edith Brown Weiss, Laurence Boisson de Chazournes and Nathalie Bernasconi (eds) *Fresh Water and International Economic Law* Oxford University Press.
- UNCTAD (1998), *Strengthening Capacities in Developing Countries to Develop the Environmental Services Sector* (TD/B/COM.1/EM.7/2). Geneva.
- UNCTAD (2003) *Environmental Goods and Services in Trade and Sustainable Development: Note by the Secretariat*. TD/B/COM.1/em.21/2 Geneva.
- UNCTAD (2003a) *Expert Meeting on Definitions and Dimensions of Environmental Goods and Services in Trade and Development* UNCTAD: Geneva.
- UNCTAD (2004) *World Investment Report: The Shift Towards Services*. UN: New York and Geneva.
- UNCTAD (2005) *Trade in Services and Development Implications*. TD/B/COM.1/171 January.
- Vikhlyaev, V. (2004) 'Environmental Goods and Services: Defining Negotiations or Negotiating Definitions?' *Journal of World Trade*, pp.93-122.
- Winters, A. and Walmsley, T. Wang, Z.K. and Grynberg, R. (2002) 'Negotiating the Liberalisation of the Temporary Movement of Natural Persons' *Discussion Papers in Economics*, University of Sussex. March.
- World Bank (2003a) *Private Participation in Infrastructure: Trends in Developing Countries in 1990-2001*, Washington, DC: World Bank.
- World Bank (2003b) *World Development Report 2004: Making Services Work for the Poor*, Washington DC: World Bank.
- World Bank (2004) *Reforming Infrastructure: Privatisation Regulation and Competition*, Washington, DC: World Bank.
- World Bank (2004a) *Global Economic Prospects*. Washington DC: World Bank.
- World Development Movement (2003) *Whose Development Agenda? A Preliminary Analysis of the 109 EU GATS Requests* WDM: London.
- WTO (1997) *Economic Effects of Services Liberalisation*. Council for Trade in Services. S/C/W/26.
- WTO (1998) *Environmental Services*. Council for Trade in Services. S/C/W/46.
- WTO (1998) *Environmental Services: background Note by the Secretariat/ S/C/W/46*. WTO: Geneva.
- WTO (2000a) *Communication from the European Communities and their Member States: GATS 2000: Environmental Services* S/CSS/W/38.
- WTO (2000b) *Communication from the United States :Environmental Services* S/CSS/W/25.
- WTO (2001) Ministerial Declaration, WTO Ministerial Conference, Geneva: WTO.
- WTO (2002) *Technical Aspects of Requests and Offers: Summary of Presentation by the Secretariat- WTO Seminar on the GATS*, 20 February 2002, accessible at http://www.wto.org/english/tratop_e/serv_e/requests_offers_approach_e.doc.
- WTO (2003) *Environmental Issues Raised in the Services Negotiations* Statement by Mr H Mamdouh at the Regular Session of the Committee on Trade and Environment of 29-30 April WT/CTE/GEN/11 WTO: Geneva.
- WTO (2004) *Communication from Bolivia, Brazil, Chile, China, Columbia, Cuba, Dominican Republic, Ecuador, Egypt, Guatemala, India, Indonesia, Mexico, Nicaragua, Pakistan, Peru, Philippines, and Thailand: Review of Progress as established in Paragraph 15 of the Guidelines and Procedures for the Negotiations on Trade in Services* (S/L/93) TN/S/W/19.
- WTO (2005) *Communication from Australia, the European Communities, Japan, New Zealand, the Separate Customs Territory of Taiwan, Penghu, Kinmen and Matsu and the United States: Joint Report on Informal Discussion on Environmental Services in the Context of the DDA* zTN/S/W/28.
- WWF-CIEL (2003) *GATS, Water and the Environment: Implications fo the General Agreement on Trade in Services for Water Resources* CIEL and WWF International Discussion Paper. October.
- Zarrilli, S. (2003) *International Trade in Environmental Services and the Developing Countries in Energy and Environmental Services: Negotiating Objectives and Development Priorities*. UNCTAD: Geneva.
- Zhang, Y-F., Kirkpatrick, C. and Parker, D. (2005) *Competition, Regulation and Privatisation of Electricity Generation in Developing Countries: Does the Sequencing of Reforms Matter?*, *Quarterly Review of Economics and Finance*, vol.45, no.2-3 pp.358-379.

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