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**ENVIRONMENTAL GOODS AND SERVICES IN TRADE AND SUSTAINABLE
DEVELOPMENT**

Note by the UNCTAD secretariat

Executive summary

Trade liberalization in environmental goods and services (EGS) has potential benefits for developing countries, such as easier access to environmentally sound technology; more efficient resource management and improved environmental conditions; enhanced capacities to comply with environmental requirements in international markets; and new export opportunities in some sectors. Real sustainable development gains from liberalization will be influenced by factors such as classifications; trade patterns and existing barriers to trade; national policies; regulatory frameworks; the transfer of technology and know-how; supply capacities; policy sequencing; and supplementary forms of international cooperation. National policy coordination and capacity building are also of key importance.

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INTRODUCTION

1. Environmental goods and services (EGS) play an essential role in sustainable development and in the achievement of specific targets set out in the United Nations Millennium Declaration and at the World Summit on Sustainable Development (WSSD).¹ Strengthening EGS sectors in developing countries through, in particular, appropriate regulatory frameworks, international trade, investment, capacity building and development assistance is therefore of key importance.

2. According to the Doha Ministerial Declaration (DMD), negotiations on trade liberalization in EGS should enhance the mutual supportiveness of trade and environment, suggesting a potential for “win-win” outcomes.² Developed countries expect greater access to emerging environmental markets for their export-oriented EGS industries. Potential gains for developing countries include: (a) easier access to environmentally sound technology and know-how; (b) economic, environmental and developmental benefits resulting from improved resource management and environmental conditions; (c) new export opportunities in certain EGS sectors; and (d) enhanced capacity to comply with environmental requirements in international markets. Employment could also benefit, as developing countries possess significant human capital in areas related to the provision of certain EGS.

3. To put “win-win” scenarios into perspective, a number of factors need to be taken into account. First, developing countries are net importers of EGS. Second, proposed approaches to definitions and classifications in the WTO seem to include few products of export interest to developing countries. On the other hand, lists of environmental goods include many “multi-use” products. Third, most developing countries still need to design national policies and regulatory frameworks to ensure that, as much as possible, liberalization in environmental services and the commercial presence of foreign service suppliers strengthens national capacities, promotes the transfer of technology, and enhances efficiency and competitiveness. Fourth, developing countries need to collect systematic information on measures applied at the national and subnational levels to decide what limitations to market access and national treatment for various modes of supply to maintain,³ as well as which conditions to attach to possible liberalization commitments they may schedule under the General Agreements on Trade in Services (GATS).⁴ Fifth, the liberalization of trade in basic environmental infrastructure services may mean increased participation of foreign and domestic private actors in sectors of vital economic and social importance. This may raise issues of control over essential environmental resources, as well as social considerations, such as costs of and access to basic environmental services. The negotiations on EGS must therefore respect national objectives and the level of development of individual WTO Members.

¹ For example, the commitment “to halve, by the year 2015, the proportion of people who are unable to reach or to afford safe drinking water and the proportion of people who do not have access to basic sanitation”.

² “With a view to enhancing the mutual supportiveness of trade and environment, we agree to negotiations, without prejudging their outcome, on:... the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services”. Doha Ministerial Declaration, paragraph 31 (iii).

³ Under GATS Article XVI and XVII.

⁴ Under GATS Article XIX.2.

4. Dealing with EGS in multilateral trade negotiations requires a careful balancing of interests. Direct trade gains (in terms of increased exports) from liberalization in EGS may flow largely to the more advanced WTO Members. Trading opportunities for developing countries could be improved to the extent that EGS negotiations result in the elimination or reduction of trade barriers facing goods and services of export interest to them.

5. There is a need to enhance understanding of how EGS liberalization works best and what have been the experiences of developing countries that have liberalized environmental services sectors. The Expert Meeting provides an opportunity to exchange national experiences, in particular regarding domestic regulations and linkages between regulatory frameworks and the outcomes of liberalization; explore possible actions at the national and international levels to enhance synergies between trade liberalization, strengthened national EGS capacities and development objectives; and identify information gaps and capacity building needs.

6. This note addresses these issues mainly in the context of the WTO negotiations on EGS and related national policies aimed at strengthening EGS sectors in developing countries. It also touches on other areas that have sometimes been brought up in discussions on EGS and in which UNCTAD has carried out substantive work, in particular the promotion of trading opportunities for “environmentally preferable products” (EPPs), BIOTRADE and organic agriculture. This is done without prejudice to how they may be dealt with in the WTO negotiations, if at all.

7. The note builds on previous UNCTAD expert meetings.⁵ Chapter I provides an overview of different approaches to defining the environmental industry. Chapter II surveys environmental markets and factors influencing trade flows. Chapter III revisits issues of definition and classification in the context of trade policy and describes the state of play in the WTO negotiations. Chapter IV examines the scope for possible export and developmental gains. Chapter V offers some conclusions with regard to the negotiations, national policies and capacity building, including UNCTAD's work. Chapter VI contains a list of questions that experts may wish to address in their deliberations.

⁵ In particular the Expert Meetings on Strengthening Capacities in Developing Countries to Develop their Environmental Services Sector (May 1998) and Environmental Requirements and International Trade (October 2002).

I. DEFINING THE ENVIRONMENTAL INDUSTRY

Concepts of environmental goods and services

In the sustainable development debate, different concepts of “environmental goods” and “environmental services” are used. An environmental good can be understood as equipment, material or technology used to address a particular environmental problem or as a product that is itself “environmentally preferable” to other similar products because of its relatively benign impact on the environment.

Environmental services have been defined as: (a) services provided by ecosystems (e.g. carbon sequestration); or (b) human activities to address particular environmental problems (e.g. wastewater management).⁶ Many biodiversity-rich developing countries, for example, have great potential for deriving commercial and developmental benefits from environmental services provided by their ecosystems. In most cases, however, the economic value of such services has not been established. Numerous ongoing studies and projects focus on valuation techniques and instruments to commercialize such services.

The classification of (trade in) “environmental” services in the context of ongoing WTO negotiations is based on the concept of human-activities-related services, which provides the focus of this note. Two major subcategories are infrastructure-related services, such as sewage, refuse disposal and sanitation services, and environment-related commercial services.

8. The Organization for Economic Co-operation and Development (OECD) and the Statistical Office of the European Communities (Eurostat) have defined the environmental industry as: “activities which produce goods and services to measure, prevent, limit, minimize or correct environmental damage to water, air and soil, as well as problems related to waste, noise and ecosystems”.⁷

9. This definition provides a basis for an indicative list of EGS that extends across environmental media and classifies these under three broad rubrics: pollution management, cleaner technologies and products, and resource management. A number of commercial services are needed to provide environmental services, e.g. engineering, design and construction. Environmental infrastructure services and environment-related commercial services differ considerably in terms of market structure, regulatory frameworks and limitations to market access and raise different concerns in the context of trade negotiations.

10. Many environmental goods that fall into the pollution or resource management categories have a low technological content. In the case of cleaner technologies and products, it is often difficult to draw the line between environmental protection and better process control. Environmental technology and its use are increasingly being driven by resource

⁶ Catherin Cattafesta, “*Diagnostico preliminar, República Dominicana*”. Study prepared for the Ministry of Environment and Natural Resources of the Dominican Republic under the UNCTAD/FIELD project Building Capacity for Improved Policy Making and Negotiations on Key Trade and Environment Issues.

⁷ Environmental Goods and Services Industry: Manual for Data Collection and Analysis, OECD/Eurostat, 1999.

economics rather than environmental regulations. In this area the differences between goods and services may become blurred. Another problem is that it is sometimes difficult to define a discrete set of “environmental goods”, as many of these are subject to technological change and continuous innovation. According to the OECD, half of the environmental goods that will be in use 15 years from now do not currently exist.⁸

11. In many cases, environmental goods, such as equipment for waste and wastewater management, are used in conjunction with environmental services. The integrated nature of many environmental activities has led some analysts to believe that liberalization of trade in such environmental goods should take place in parallel with liberalization in environmental services.

12. “Environmentally preferable” products (EPPs) can be generally described as products that, from a life-cycle perspective, cause significantly less “environmental harm” than alternative products that serve the same purpose.⁹ Developing countries can derive economic, social and environmental benefits from the production and export of EPPs. However, there is no universally accepted definition of EPPs.

II. TRADE IN ENVIRONMENTAL GOODS AND SERVICES (EGS)

1. *Environmental markets and trade flows*

13. The size of the global environmental market is estimated at US\$ 550 billion.¹⁰ The developed countries account for about 90 per cent of the total market (85 per cent for the EU, the United States and Japan combined).¹¹ The environment industry is estimated to have grown by over 14 per cent between 1996 and 2000. Most analysts expect that the industry will continue to expand, reaching over US\$ 600 billion by 2010.¹² This is roughly the same size as the pharmaceuticals or information technology markets. The most important sectors are wastewater treatment, waste management and air pollution control. Saturation has slowed market growth in the developed countries to 3-5 per cent. Most of the future demand growth

⁸ The Global Environmental Goods and Services Industry, OECD, 1998.

⁹ Less environmental harm is generally established according to the following criteria: (a) use of natural resources and energy; (b) amount and hazardousness of waste generated by the product along its life cycle; (c) impact on human and animal health; and (d) preservation of the environment. For more information on the concept and criteria of EPPs, see: “Environmental Preferable Products (EPPs) as a Trade Opportunity for Developing Countries”, Report by UNCTAD secretariat, UNCTAD/COM/70, Geneva, December 1995. This report did not intend to define EPPs for the purposes of WTO negotiations.

¹⁰ Market surveys are based on data provided by suppliers and made according to three sources of revenue generation: services, equipment or resources. The estimates vary from US\$ 350bn to US\$550 bn, depending on the definition used. The two main sources are the Environmental Business International (EBI) and the Joint Environmental Markets Unit (JEMU). The significant differences in estimates have to do with the fact that the EBI statistics include certain sectors - water utilities, water treatment services and resources recovery - that do not correlate clearly with the JEMU statistics.

¹¹ Environmental Goods and Services: The Benefits of further Global Trade Liberalization, OECD, 2001, p. 12.

¹² “Environmental Benefits of Removing Trade Restrictions and Distortions”. Note by the Secretariat, Addendum. Committee on Trade and Environment. WT/CTE/W/67/Add.1, WTO, 13 March 1998, para. 1; *Implications of WTO Agreements for International Trade in Environmental Industries*, ITC, 1999.

is expected to occur in developing countries and countries in transition – at an annual rate of 8 to 12 per cent.¹³

14. Basic services will represent the majority of environmental business opportunities in developing countries over the next 20 years. Market forecasts reveal a significant growth potential in emerging environmental markets. Energy production is set to become the fastest growing segment of the market as electric power generating companies install more efficient pollution-control equipment and replace old, coal- and oil-fired capacity with generating sets based on natural gas or renewable energy.

15. In terms of market structure, the environmental industry is characterized by a few dominant multinationals operating in the waste and water management sector and a large number of small and medium-sized firms in solid waste management, including in developing countries. Mergers, acquisitions and general consolidation are affecting the structure of the industry, reflecting a shift from compliance with environmental regulations to more efficient use of resources.

16. Traditionally, environmental infrastructure services have been in the public domain, but this situation is changing. Municipal services such as water delivery, water treatment and garbage collection have been privatized in some European countries, particularly France and the United Kingdom.

17. There is also growing private sector participation in environmental infrastructure services in developing countries. In some cases, however, poor performance of private companies and social discontent has been a matter of concern. Multilateral and bilateral lending agencies are important factors in determining how environmental infrastructure projects are developed and operated.

18. The combination of market saturation in developed countries, industry consolidation, privatization and deregulation of utilities such as water and electricity increase the share of EGS entering international trade, particularly in more mature areas such as water and waste management and air-pollution control. The proliferation of environmental standards across the world, including international standards introduced pursuant to multilateral environmental agreements (MEAs) such as the Montreal Protocol and the United Nations Framework Convention on Climate Change, has also created markets for EGS.

19. The European Union, the United States and Japan are net exporters of EGS. The European Union is the biggest exporter and the United States and Canada form the biggest market for EU products and services. South-east Asia has recently been replaced as the second biggest market by countries in accession to the European Union. Developing countries' exports tend to be orientated mainly towards regional markets.

20. Document TD/B/COM.1/EM.21/CRP.1 analyses trade flows for environmental goods on the basis of lists developed by OECD and Asia Pacific Economic Cooperation (APEC).¹⁴

¹³ Based on EBI estimates; UNCTAD estimates that the environmental industry in developing countries has grown between 5 and 25 per cent. See "Report of the Expert Meeting on Strengthening Capacities in Developing Countries to Develop their Environmental Services Sector", 20-22 July 1998. TD/B/COM.1/18, TD/B/COM.1/EM.7/3, 5 August 1998. [UNCTAD, 1998(a)]

Developing countries are net importers for the vast majority of these goods. Trade statistics, however, need to be interpreted with caution. The lists include a wide range of products that have multiple, including non-environmental, uses. In addition, the Harmonized Commodity Description and Coding System (HS) in most cases does not uniquely identify, at the six-digit level, environmental goods on those lists. Taken together, this means that corresponding trade statistics tend to be inflated.¹⁵

2. *Market drivers*

21. The demand for EGS is shaped by environmental regulations and market-based instruments; education, information and consumer pressure; economic and financial considerations; and tax policies.¹⁶ Environmental regulations are by far the most important factor.

22. In developed countries, regulatory reform focusing on the use of economic instruments has encouraged a shift from end-of-pipe pollution prevention in the direction of more cost-effective, multimedia approaches. This shift has tipped the balance in favour of services as “know-how” features predominantly in integrated packages of technology-intensive goods and services.

23. In developing countries, population growth, urbanization and economic activity create significant environmental and resource management needs. Turning these needs into demand for EGS is a gradual process and also a function of resource availability. The usual sequence of evolving priorities is: water delivery, wastewater treatment, air pollution control, solid waste disposal, disposal of hazardous waste, and soil and water remediation. The need for enhanced environmental protection and cost-effectiveness are drivers of a trend towards cleaner production.

24. The need to comply with increasingly frequent, stringent and complex environmental requirements in international markets is leading to changes in production processes and generates demand for EGS. This trend is reinforced by the use of life cycle analysis and environmental management systems, e.g. ISO 14000, as companies move towards more efficient use of raw materials, water and energy. Another important factor is compliance with MEAs.

25. Easier access to EGS can help a broad range of pollution-intensive sectors, such as pulp and paper, metal refining and manufacturing, energy, coal, textiles and footwear, in increasing resource efficiency and reducing compliance costs. However, a gap remains between environmental needs and financial resources available for environmental purposes.

¹⁴ TD/B/COM.1/EM.21/CRP.1 (English only), which presents an overview of trade patterns in environmental goods from 1996 through 2001, will be made available at the Expert Meeting.

¹⁵ In principle, the HS captures all goods, including environmental goods, provided they are described in such a way that they can be identified on the basis of objective criteria when presented. In January 2002 the World Customs Organization (WCO) released for the first time stand-alone codes based on environmental criteria (for wastes and chemicals specified under certain MEAs, notably the Basel Convention and the Montreal Protocol). The WCO can provide technical advice on the possibility of providing for separate identification of goods in the HS.

¹⁶ UNCTAD, “Strengthening capacities in developing countries to develop their environmental services sector” (TD/B/COM.1/EM.7/2), para. 31.

3. *Barriers to trade*

26. Actual or potential limitations to trade in EGS arise from tariff and non-tariff measures in the case of goods and restrictions with respect to national treatment and market access in the case of environmental services.

27. Currently applied and bound tariffs on many capital goods used to provide pollution-management services are low in developed countries - generally under 3 per cent for products on the OECD list.¹⁷ In most developing countries these tariffs remain relatively high, with bound tariffs ranging from 20 to 40 per cent and applied rates mostly ranging from 10 to 20 per cent.¹⁸ In some developing countries, rates are lower or higher.

28. Trade in EPPs may be affected by standards and certification requirements. On the other hand, trade in niche products seeking to enter new markets may be hindered by lack of appropriate standards for such products. Exports of “novel” food products may be subject to stringent testing in importing countries.

29. Protection against competition from foreign suppliers of services is granted largely through restrictions on foreign direct investment (“mode 3”). Developed countries have not specified many such limitations. However, environmental services trade may be affected by the lack of market access in other related services sectors such as construction, engineering, legal and consulting services. In some cases financial guarantees are required for cross-border supply (“mode 1”).

30. Individual service suppliers from developing countries may be affected by restrictions on the movement of natural persons (“mode 4”), including licensing requirements. Suppliers of professional services may be affected by requirements relating to qualifications and working experience.

31. Subsidies provided to the domestic environment industry may become trade barriers for EGS from other countries.

32. Developing countries’ service markets may also be affected by environmental regulations taken pursuant to technical assistance, which favours the donor country’s suppliers.¹⁹ The role of export credit agencies in the delivery of EGS may also need further assessment.

33. Cleaner production and resource management services depend on access to environmentally sound technologies (ESTs). Some existing ESTs may involve proprietary knowledge²⁰ developed by and belonging to transnational corporations (TNCs). Barriers to trade in EGS may also be created where specific patented or patentable technical knowledge is adopted as a standard for an industry through governmental regulation, standards or special provisions in MEAs.

¹⁷ Extended information is available at <http://www.oecd.org/pdf/M00037000/M00037633.pdf>

¹⁸ In practice, imports of environmental goods may sometimes benefit from incentives.

¹⁹ “Environmental Services”, Background Note by the Secretariat; Council for Trade in Services. S/C/W/46, WTO, 6 July 1998, para. 36-40.

²⁰ See “Factors affecting Transfer of Environmentally Sound Technology”. Note by the Secretariat. WT/CTE/W/22, WTO 1996.

III. EGS IN THE WTO DOHA WORK PROGRAMME

34. In accordance with arrangements made following the Doha Ministerial Conference, EGS are negotiated in different WTO bodies. Negotiations on environmental goods take place in the Negotiation Group on Market Access for Non-Agricultural Products (NGMA) whereas negotiations on environmental services are conducted in the Council for Trade in Services, in Special Session (CTS). The Committee on Trade and Environment, in Special Session (CTESS), may play an important role in clarifying the concept of environmental goods. The classification work on environmental services is done in the Committee on Specific Commitments, which may eventually submit recommendations to the CTS. No links or sequencing have been established in the work of the negotiating bodies.

A. Environmental goods

1. *Definitions, lists and criteria*

35. There is no definition in the GATT/WTO for environmental goods. Lists of “environmental goods” developed by the OECD and APEC have been circulated in the NGMA.²¹ The OECD list was developed for analytical purposes.²² The APEC list was compiled in the late 1990s, based on proposals by individual APEC members, as a bottom-up approach to the Voluntary Sectoral Liberalization initiative (EVSL), which included the environmental sector. Interestingly, there is no consensus in APEC on the definition and categorization of the environmental industry. The current definitions and categorizations employed by member economies differ greatly. In the WTO, some countries consider such lists as a good starting-point for discussions. Others are of the view that they cannot be used as the basis for negotiations.

36. Japan has circulated a list that is based on the OECD list and includes additional energy-efficient consumer products such as microwave ovens, refrigerators and video projectors, as well as other less-polluting and more resource-efficient goods.

37. Several developing countries argue that the product coverage of environmental goods would need to include more products of export interest to them. For instance, India argues for inclusion of some EPPs, although not on the basis of processes and production methods (PPMs).²³ Many other WTO Members oppose the use of criteria based on non-product-related PPMs on systemic or practical grounds.

38. Qatar has proposed including certain energy-efficient technologies and the natural gas and liquid fuels used for these technologies. It links the proposal with the objectives of MEAs, in particular the UNFCCC and its Kyoto Protocol, and claims that non-tariff barriers are serious impediments to global trade in these goods.²⁴

²¹ Environmental Aspects of the Negotiations on Market Access, WT/CTE/GEN/9, TN/MA/7, WTO, 21 February 2003.

²² See “Environmental goods: A comparison of the APEC and OECD lists”, OECD document COM/ENV/TD(2003)10/FINAL, 28 April 2003.

²³ Market access for non-agricultural products. Submission by India. TN/MA/W/10, WTO, 22 October 2002.

²⁴ “Negotiations on Environmental Goods: Efficient, Lower-Carbon and Pollutant-Emitting Fuels and Technologies”, Submission by the State of Qatar, TH/TE/W/19, TH/MA/W/24, WTO, 28 January 2003.

39. Several Members have expressed the view that no definitional exercise is required until an agreement on modalities is reached. In principle, the NGMA may negotiate a list, without having to first agree on a definition. However, Members would probably need a common understanding on what categories of products could be included. Some have proposed that the NGMA could seek inputs from the CTESS on the concept of “environmental goods.”

40. Different suggestions have been made regarding criteria for identifying environmental goods. “End-use” or “predominant end-use” criteria could be applied to select equipment used in environmental activities, such as pollution control or waste management.²⁵ In principle, there is broad support for this criterion.²⁶ However, other criteria would have to be applied to identify EPPs, in particular inherently environment-friendly products, of export interest to developing countries.²⁷

41. Performance-based criteria, such as energy efficiency during use, have also been proposed. As mentioned earlier, however, it may sometimes be difficult to apply these criteria because of continuous technological progress and innovation.

42. It is important to clarify the criteria that demarcate environmental goods from mainstream products. Unclear criteria may turn into NTBs for products that could be considered as “like products” and/or significantly increase the costs of conformity assessment, in particular certification.

2. *State of play*

43. Developing countries have argued that, in accordance with paragraph 16 of the DMD, the negotiations should pay particular attention to “products of export interest to developing countries”; take fully into account the special needs and concerns of, and require “less than full reciprocity in reduction commitments” from, developing and least developed countries; and establish modalities for studies and capacity building measures.

44. Some Members view paragraph 31(iii) of the DMD as providing for special treatment for environmental goods in the form of, for example, deeper cuts, and some support a “zero-for-zero” agreement. Some others argue that there is no justification for providing such special treatment. It has also been suggested by some that priority could be given to reaching agreement on modalities for all goods negotiated in the NGMA and that subsequently the NGMA could evaluate whether additional reductions are needed to fulfil the mandate of paragraph 31(iii).

²⁵ “End-use” criteria can be applied to select products to be put on lists of “environmental goods”, but cannot be used in the context of customs administration.

²⁶ The issue of how to deal with multiple-use products remains a problem.

²⁷ It has been argued that expanding the scope of environmental goods to include products based on PPM-related criteria would be counterproductive not just for the environmental goods negotiations themselves but more broadly for the full market access negotiations.

B. Environmental services

1. *Definitions and classification*

45. Environmental services²⁸ are included as one of the 12 sectors in the Services Sectoral Classification List (W/120),²⁹ which is based on the UN Provisional Central Product Classification (CPC). It outlines four categories of environmental services, classified according to environmental media: sewage, refuse disposal, sanitation and “other”.³⁰ The WTO members can decide collectively whether there is a need to update the classification in the light of developments in the environmental industry, services negotiations and ongoing work elsewhere.³¹

46. Several Members are of the view that the W/120 classification needs to be updated, invoking a series of drawbacks:³² (a) it establishes only partial correlation with primary media, especially in the case of water and solid waste; (b) it is limited to “end-of-pipe” services, i.e. it does not cover pollution prevention and sustainable resource management; (c) it includes services provided in operation, but not services that make facilities operable; and (d) it does not capture services provided directly to industry.³³

47. Proposals for updating the W/120 include several subsectors, such as water delivery; (hazardous) waste management; recycling; and protection of air quality and climate.

48. The EU proposal includes “water for human use and wastewater.” Some civil society groups have expressed concern over the fact that the proposed heading “Water Collection, Purification and Distribution Services” would explicitly bring “water distribution” under the GATS classification.³⁴ They claim that the proposed heading “Water Collection, Purification and Distribution Services Through Mains” raises questions about market access *versus* access to and control over water resources.³⁵

49. The general obligations under GATS, including MFN and national treatment, do not apply to services supplied under government authority that are not supplied on a commercial basis or in competition with other service suppliers.³⁶ WTO members can therefore protect

²⁸ The GATS does not precisely define the term “services”. Article I: 2 defines “trade in services” by reference to the delivery of services, known as “modes of supply”.

²⁹ **Services Sectoral Classification List, Note by the Secretariat, MTN.GNS/W/120.**

³⁰ The revised CPC has subcategories of environmental sectors. For instance, refuse disposal services have been divided into non-hazardous and hazardous waste collection, treatment and disposal services.

³¹ **“Environmental Services”, Background Note by the Secretariat. Council for Trade in Services. S/C/W/46, WTO, 6 July 1998, para 18.**

³² See “Environmental Services”, Communication from the United States, Council for Trade in Services – Special Session, S/CSS/W/25, WTO, 18 December 2000; “Classification Issues in the Environment Sector”, Communication from the European Communities and their Member States, S/CSC/W/25, WTO, 28 September 1999, as modified by job 7612 dated 28 November 2000.

³³ See also Dale Andrew, “Modernizing the List of Environmental Services: OECD Proposals”. In *Energy and Environmental Services: Negotiating Objectives and Development Priorities*, UNCTAD/DITC/TNCD/2003/3, New York and Geneva, 2003.

³⁴ Such concerns were expressed, for example, at the Third World Water Forum in Kyoto, Shiga and Osaka, Japan, 16 to 23 March, 2003

³⁵ GATS does not cover ownership of natural resources.

³⁶ GATS Article I(3).

those public utilities or other environmental services essential to the economy or society from participation by foreign actors.³⁷

50. Some developing countries have suggested that the category “other” services could include sectors of export interest to them, e.g. studies on the evaluation of environmental impacts or consultancy for environmental policy and management. Many developing countries argue that there is a need for “stability” in the services classification and that any revision should be agreed multilaterally.

51. An important feature of the W/120 is that services sectors are classified in a mutually exclusive way, e.g. services in one sector cannot be covered by another. This has implications for the cross-sectoral approach to the design and delivery of integrated environmental services.

52. Some WTO Members propose that, apart from “purely” or “core” environmental services (based on W/120 with possible amendments), negotiations could also focus on certain “related” environmental services. These would include professional services; research and development; consultancy, subcontracting and engineering; and construction relating to the environment.³⁸

53. To preserve the mutually exclusive nature of W/120, only commitments concerning “purely” environmental services would be entered in schedules for the environmental services sector, whereas commitments concerning “related” services would be entered in schedules for sectors other than “environmental services”. This is known as a “core and cluster” approach. Some have expressed concern that this approach could result in unintended commitments. Such concerns could be addressed by drawing up a checklist for “cluster” services, with Members able to consider for each service on the list what sort of commitments – if any – they wish to make. This could promote recognition of the economic linkages between different services, while preserving the voluntary “bottom-up” nature of GATS commitments.

2. *State of play*

54. Negotiations on trade in services started in January 2000, pursuant to Article XIX of GATS, and as part of the “built-in” agenda. The DMD marked the beginning of the market access negotiations and invited Members to table initial requests for specific commitments by 30 June 2002 and initial offers by 31 March 2003. Environmental services are an important area in requests and offers made by developed countries. Issues raised in the negotiations include increased country coverage and reduction of barriers to trade, especially for “mode 3” (commercial presence) and “mode 4” (presence of natural persons); regulatory issues; and the classification.

55. As compared to other sectors, liberalization bound under the GATS in environmental services appears rather limited. However, WTO members' policies may be more liberal in

³⁷ The United States offer, for example, applies only to environmental services open to private sector participants and does not give foreign service suppliers the right to acquire or invest in government monopolies supplying services. The offer does not include water supply or distribution, as the United States considers that GATS is not the appropriate vehicle for pursuing privatization of US public services.

³⁸ These are “multiple-use” services that can be defined as environmental only through their “end use”.

practice than is reflected in their schedules. Overall, few limitations to market access and national treatment have been scheduled. However, the scope of the commitments is restricted in a number of cases by horizontal limitations and restrictive definitions of the activities covered.³⁹

56. The regulatory issues include the need for increased transparency, implementation of Article I:3(a) of the GATS, and recognition of environment-related professional qualifications.⁴⁰ Some members indicated that liberalization must not impair the ability of Governments to impose performance and quality controls on environmental services and to otherwise ensure that service providers are fully qualified and carry out their tasks in an environmentally sound manner. It has also been noted that the GATS recognizes the right to regulate and does not prevent foreign service suppliers from being subject to the prevailing regulatory requirements – or even to additional, stricter requirements, provided they are scheduled as national treatment restrictions.

57. Developing countries are increasingly interested in multilateral discussions in the Working Party on Domestic Regulations. Discussions on subsidies (Article XV) and government procurement (Article XIII) in the Working Party on GATS Rules are in a tentative stage.

58. As disciplines on subsidies are yet to be developed under GATS, more sector-specific analysis of subsidies and their effects – positive or negative – would be helpful to trade negotiators. Environmental services could be an important area for such analysis.

59. Where there is a strong public function in the provision of certain essential services, e.g. in water supply and waste management, many Governments have established monopoly or exclusive supplier rights in respect of public utilities. GATS Article VIII provides disciplines on monopolies and exclusive service suppliers, but the obligations relating to procurement or subcontracting of services by private firms with exclusive supplier rights granted by Governments are not clear.

60. The issue of classification should be addressed in the Committee on Specific Commitments. For the moment, WTO Members are using various classifications of environmental services in their bilateral requests and offers.

IV. POTENTIAL BENEFITS FOR DEVELOPING COUNTRIES

A. Potential for export gains

61. Some developing countries may be able to compete in subregional or regional markets where experience in similar environmental problems is key. Moreover, they may be able to offer a range of products and services that are not only price competitive, but also based on technology adapted to the local conditions.

62. Some developing countries have export potential and a positive trade balance in specific EGS sectors. Mexico, for example, is competitive in equipment to monitor air quality

³⁹ “Environmental Issues Raised in the Services Negotiations”, WT/CTE/GEN/11, WTO, 16 April 2003.

⁴⁰ Ibid.

and atmospheric emissions and in services to optimize energy use in industrial processes. India has large renewable energy programmes and exports renewable energy systems and products, such as wind-powered generating systems⁴¹ and photovoltaic cells.

63. The analysis in TD/B/COM.1/EM.21/CRP.1 shows that during the period 1996-2001 developing countries as a group were net exporters for 14 of the 128 “environmental goods” on the OECD list. Examples of energy-efficient consumer goods where certain developing countries have become significant suppliers to the global market are florescent lamps (China, Mexico, Republic of Korea, Indonesia, Thailand and Chile) and multi-layered insulating glass windows (Mexico, Saudi Arabia, Republic of Korea and Brazil). Clean bio-fuels, such as ethanol, represent significant exports for Brazil, Jamaica, Argentina, Bolivia, Costa Rica, El Salvador and Guatemala. Artisanal manufactures such as hand brooms are key exports for Iran, Bhutan, Kenya, Sri Lanka and Nepal.

64. Some gains may be generated from trade in EPPs. Tariffs are less of a problem for these products, except for value-added agricultural and natural-resource-based goods. However, progress can be made in lowering NTBs, especially those relating to certification requirements.

65. Developing countries may have export potential in environment-related professional services. Cuba, for example, has supplied environment-related services in the form of studies, assessments and consultancies to various countries in Latin America and the Caribbean.⁴² Colombia proposes including the implementation and auditing of environmental management systems, the evaluation and mitigation of environmental impact, and advice in the design and implementation of clean technologies in the negotiations.⁴³

66. Partnerships can provide environmental services suppliers in developing countries with business opportunities, while at the same time allowing technology transfer and capacity building.⁴⁴

B. Potential for environmental and developmental gains

67. Developing countries may derive important environmental and developmental benefit from trade liberalization in EGS. Since the provision of basic environmental services requires high levels of investment and expertise, the commercial presence of foreign enterprises may contribute to increased investment and capital formation; improvements in the coverage and quality of environmental services; transfer of technology, know-how and best practices; and enhanced competitiveness.⁴⁵

⁴¹ Indian companies have commercialized both equipment and maintenance services.

⁴² Raúl Garrido Vázquez. “Evaluación Nacional sobre Servicios Relacionados con el Medio Ambiente. Estudio de caso de Cuba”. Prepared for the project Building Capacity for Improved Policy Making and Negotiations on Key Trade and Environment Issues.

⁴³ Communication from Colombia: Environmental Services, S/CSS/W/121, WTO, 27 November 2001.

⁴⁴ Report of the Expert Meeting on Strengthening Capacities in Developing Countries to Develop their Environmental Services Sector. TD/B/COM.1/18 - TD/B/COM.1/EM.7/3, August 1998, paragraph 31.

⁴⁵ Communication from Colombia: “Environmental Services”, S/CSS/W/121 and Nicaragua, Ministry of Development, Industry and Commerce (MIFIC), “Estudio Preliminar de la Situación de Servicios Ambientales en Nicaragua”. Prepared for the UNCTAD/FIELD project “Building Capacity for Improved Policy Making and Negotiations on Key Trade and Environment Issues”.

68. Some developing countries have argued that liberalization of trade in EGS should provide conditions for the transfer, on a favourable commercial basis, of environmental technologies and associated “know-how”, as well as for the development of national capabilities, both human and institutional, in the environmental sector.⁴⁶

69. While trade in EGS is a direct route for technology transfer, it might be important to link it to other channels such as investment, licensing of intellectual property rights, government procurement, MEAs and development cooperation.

70. The WTO Working Group on Trade and Technology Transfer could make a substantive contribution by identifying steps that might be taken within the WTO’s mandate to increase flows of technology to developing countries. The role of effective multilateral instruments such as the Multilateral Fund under the Montreal Protocol should also be noted.

71. To capture the benefits of liberalization, developing countries have to strengthen their regulatory regime in relation to their own developmental and environmental needs. This will attract the “right” EGS, create or preserve space for the domestic environmental industry, including a reliable supply from SMEs, promote opportunities for switching to clean(er) technologies, and eventually lead to a better match between technological solutions and local environmental and resource management problems.

V. CONCLUSIONS

72. This report has outlined potential benefits of EGS trade liberalization for developing countries. To turn liberalization into real sustainable development benefits, developing countries need to build supply capacities, adapt regulatory frameworks and develop supportive infrastructure. Developing countries need to participate effectively in EGS trade negotiations, as well as to enhance policy coordination at the national level. National consultations, information gathering and capacity building are important in this context.

73. The definition of the environmental industry is still evolving. Trade negotiators have yet to reach an agreement on the coverage of “environmental goods” and on a re-classification of environmental services, if and when necessary. Direct trade gains from liberalization in EGS may flow largely to the more advanced WTO Members, which stand to benefit from improved access to expanding EGS markets in developing countries. Efforts should be made to increase the potential for direct trade gains for developing countries.⁴⁷ Since the negotiations on EGS form part of the single undertaking, there is also an opportunity to trade off results in EGS with other sectors under negotiation.

A. Issues in the negotiations

⁴⁶ Communication from Cuba, Negotiating Proposal on Environmental Services, S/CSS/W/14222, WTO, March 2002.

⁴⁷ Paragraph 16 of the DMD calls for particular attention to be paid to products of export interest to developing countries. Similarly, paragraph 15 reaffirms that the negotiations on services should be conducted with a view to achieving the objectives of the GATS, as stipulated in the Preamble, Article IV and Article XIX of that Agreement, which includes increased participation of developing countries in trade in services.

1. Environmental goods

74. Discussions on environmental goods have focused on the product coverage of the negotiations and on negotiating objectives. It is possible that Members will seek to agree on a list, based on a common understanding, rather than trying to define “environmental goods”. Such a list may be based on a combination of “end-use” criteria for select product categories used in activities such as pollution control and renewable energy, plus specific criteria for EPPs.

75. To date, the proposed lists of environmental goods have centered on selective coverage of environmental equipment, chemicals (in the case of the OECD list), scientific instruments and a few energy-efficient products. In general, developing countries are net importers of these products and their applied tariffs are higher than those in the developed countries. It is also argued that many “multiple use” products may, in practice, have relatively little application for environmental purposes.⁴⁸ For these reasons, some developing countries seem inclined to keep any list of environmental goods short and current.⁴⁹

76. At the same time, some developing countries have argued that negotiations concerning environmental goods should include more products of export interest to them. Many of these products, however, fall into the category of EPPs. Inherently environmentally preferable products, such as renewable-energy products, biodegradable products from natural fibers such as jute and coir, recyclable products, non-timber forest products and clean fuels such as methanol/ethanol or biomass, could be considered under the negotiations on environmental goods.⁵⁰ Reducing non-tariff barriers to trade affecting EPPs is of key importance. It is also important to ensure that any selection of categories of EPPs for negotiating purposes is based on objective criteria to avoid possible new NTBs and additional costs, e.g. for certification.

77. For some EPPs, including those based on PPM-related criteria, developing countries could seek to improve market access by means other than the negotiations in the NGMA. For example, concerns related to standards, certification and conformity assessment procedures could be addressed under the Agreement on Technical Barriers to Trade, which covers, for example, organic agriculture. The CTESS could also play a role here. Developing countries could find it useful to explore creating markets in EPPs through trade facilitation and promotion measures.⁵¹ UNCTAD, in cooperation with other institutions, could be of assistance, drawing on its work on commodities, BIOTRADE and the International Task Force on Harmonization and Equivalence in Organic Agriculture, created jointly with the FAO and the International Federation of Organic Agriculture Movements (IFOAM).

⁴⁸ This has been found in an analysis by the TATA Energy Research Institute (TERI) in India.

⁴⁹ In the case of multiple purpose products, fiscal or financial incentives for imports of specific products with clear environmental end-uses, for example under priority environmental projects, may be effective in promoting sustainable development

⁵⁰ The NGMA does not cover agricultural products. Trade liberalization of agricultural EPPs could perhaps be discussed in the CTESS.

⁵¹ The WSSD Plan of Implementation calls on countries to “support voluntary, WTO compatible, market-based initiatives for the creation and expansion of domestic and international markets for environmentally friendly goods and services, including organic products, which maximize environmental and developmental benefits..., paragraph 93 (b).

2. *Environmental services*

78. Developing countries may derive environmental and developmental benefits from liberalization in environmental services. However, a few factors would appear to suggest the need for well-prepared and gradual approaches to market access and national treatment commitments in the context of GATS: (a) regulatory frameworks are still being established; (b) more information may need to be collected on how environmental services are provided, including at the state or municipal levels and by the SME and informal sectors; and (c) the potential of domestic companies and national professionals to supply environmental services is not well assessed. National consultations and support for capacity-building efforts play an important role in addressing such issues.

79. Classification issues may grow in importance and are best addressed multilaterally. As far as proposals for new subsectors of the “core” services are concerned, “water distribution” is the most sensitive area. Countries can also make commitments on any “related” or “cluster” services. Market access goals for these services should be set carefully through an appropriate scheduling of commitments.

80. The negotiations on environmental services are not linked to the negotiations on environmental goods. However, it is important for trade negotiators to monitor developments on both fronts. For instance, a checklist may be created for environmental goods that are integral to the provision of environmental services in those sectors where the number and extent of requests are significant.

81. The growing scope for prevention activities increases the importance of consultancy and engineering services. Consequently, the need for “mode 4” commitments will also increase. It would be important to facilitate the participation of developing countries in mutual recognition agreements. If the ILO International Standard Classification of Occupation (ISCO) is used for establishing occupations relevant to trade in services, developed countries could make exemptions from the economic needs test for developing countries, specific to certain occupations listed under environmental sectors.

82. Two distinctly different categories of environmental services – environmental infrastructure and environment-related commercial services – will require different approaches in the negotiations, as well as on the domestic front. In the case of infrastructure services, the overriding objective is to build domestic capacity by aligning liberalization with evolving developmental and environmental priorities. This objective will move to the forefront issues relating to domestic regulatory regimes. For environment-related commercial services, identifying and capturing export opportunities is going to be more important, with a consequent shift of emphasis towards mutual recognition and technical standards.

83. Provisions in GATS Articles IV and XIX:2 are relevant to both these categories of environmental services. Article IV provides for increasing participation of developing countries in trade in services through strengthening of their domestic services capacity and its efficiency and competitiveness, *inter alia*, through access to technology on a commercial basis. Article XIX:2 gives countries the flexibility for individual developing country Members to open fewer sectors, liberalize fewer types of transactions, progressively extend market access in line with their development situation and, when making access to their markets available to foreign service suppliers, attach to such access conditions aimed at achieving the objectives referred to in Article IV.

B. Coordinating trade negotiations with national policies

84. A large number of developing countries have received requests from trading partners to make market access and national treatment commitments in different environmental services sectors. In many countries, authorities responsible for trade negotiations have organized consultations with other ministries and with service suppliers to determine in which sectors and modes of supply commitments, if any, would be appropriate and what conditions should be listed to support the national development of environmental services and ensure consistency with national policies.

85. Detailed information is needed on the regulatory and administrative regimes influencing the provision of environmental services in different regions and localities and on possible future changes in these regimes. Commercial presence and the movement of natural persons being key to the delivery of environmental services, this may touch on foreign investment regulations, immigration restrictions, health and environmental requirements, property, planning and zoning laws, competition policies, particularly in relation to the regulation of utility monopolies, company laws, and intellectual property regimes.

86. Learning-by-doing will require Governments to go through an iterative regulatory process. At the early stages, it is critical to retain flexibility to reverse policies that are not working, which is much easier to do before GATS commitments are made. Specific investment projects may be used as a testing ground for a variety of measures to promote trade in EGS.

C. Capacity building

87. Through the project on *Building Capacity for Improved Policy Making and Negotiations on Key Trade and Environment Issues*,⁵² UNCTAD has been assisting some countries in Central America and the Caribbean in addressing issues related to EGS, particularly through the promotion of national studies.⁵³ These studies have been drawn upon in relevant parts of this note.

88. The preliminary results of these studies⁵⁴ were discussed at a subregional workshop on EGS organized jointly by the secretariats of UNCTAD and the Economic Commission for Latin America and the Caribbean (ECLAC) in Havana, Cuba, in March 2003. National workshops on EGS are scheduled to take place in India (May 2003)⁵⁵ and Nicaragua (June 2003).

89. The UNCTAD secretariat has been invited to address issues relating to EGS at WTO regional seminars and events held in conjunction with these seminars under the UNEP-

⁵² Implemented in cooperation with the Foundation for International Environmental Law and Development and funded by the UK Department for International Development (DFID).

⁵³ Experts from Brazil, Colombia, Cuba, Dominican Republic, Guatemala, Honduras, Mexico, Nicaragua and Panama participated in the workshop. Studies and presentations are available at the UNCTAD website.

⁵⁴ Studies on Cuba, Dominican Republic, Honduras and Nicaragua reveal that a certain level of information is available concerning water, sewage, solid and hazardous waste management, cleaning of exhaust gases, recycling, and professional services. However, little information is available on noise abatement; nature and landscape protection; and "other" environmental protection services.

⁵⁵ Under the project "Strategies and Preparedness for Trade and Globalization in India", funded by DFID.

UNCTAD Capacity Building Task Force on Trade, Environment and Development (CBTF).⁵⁶

90. The BIOTRADE Initiative, which explores ways and means to promote trade in goods derived from bio-resources, and the Science and Technology Diplomacy Initiative, which was established to support developing countries in their participation in substantive discussions in the WTO Working Group on Trade and Technology Transfer, are also relevant to issues raised in this note.

91. The UNCTAD/FAO/IFOAM International Task Force (ITF) on Harmonization and Equivalence in Organic Agriculture aims at facilitating international trade and access of developing countries to international organic markets.⁵⁷

92. Further work may also address gender-related issues in EGS and may focus on examining the implications of trade liberalization on those environmental services where women represent an important part of the work force and the role of women in the production and commercialization of EPPs.

VI. QUESTIONS FOR EXPERTS

93. Experts may wish to address the following questions:

Definitions and classifications

- What are the implications of proposed adjustments in the GATS classification of environmental services for developing countries?
- What should be the criteria for including products in the WTO negotiations on market access for “environmental goods”? What should be the criteria for including EPPs?
- How could trade in environmental goods be liberalized in conjunction with trade in environmental services?

Scope for enhanced capacity for environmental and resource management

- What can trade liberalization in EGS contribute to national environmental and developmental objectives?
- Under what conditions would market access commitments result in transfer of ESTs and sharing of know-how?
- What have been the experiences of private sector involvement and trade liberalization, particularly in the environmental infrastructure?
- What are the implications of trade liberalization for the development of domestic environmental industry in developing countries? What policies are needed to strengthen the domestic environmental industry in developing countries?
- Which domestic sectors stand to benefit most from increased availability of EGS?

⁵⁶ Singapore, May 2002; Latvia, September 2002, and Bolivia, February 2003.

⁵⁷ For more information, see: www.unctad.org/trade_env/test1/projects/ifoam2.htm

Potential for increased exports of EGS

- In what segments of the environmental industry could developing countries successfully compete in international markets?
- To what extent do the OECD, APEC and other lists currently under consideration at the WTO reflect products of export interest to developing countries?
- Could other (categories of) environmental goods of export interest to developing countries be included?
- How could negotiations on environmental goods pay greater attention to NTBs?
- What obstacles do services suppliers from developing countries face in developed country markets?

Potential indirect gains in terms of improved compliance with environmental requirements in export markets

- Which export sectors can benefit from increased availability of EGS?
- For which EGS does trade liberalization contribute to enhanced capacity to meet environmental requirements in export markets?

Capacity building

- What are the capacity building needs of developing countries?
-