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ENSURING ACCESS TO WATER AND SANITATION – THE TRADE DIMENSION

Access to Clean Drinking Water and Wastewater Management, International Trade : The case of Mexico

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INTRODUCTION

At the beginning of the 21 first century, the international community assessed the progress and reaffirmed its commitment with sustainable development. Several international meetings were convened to redefine the goals, the path and the means to foster economic growth, improve social development and assure the sustainable use of natural resources and ecosystems. Four commitments from the multilateral agenda stand out due to its potential to make the necessary changes to the global and national institutional architectures for the implementation of sustainable development: the Millennium Development Goals, the Monterrey Consensus, the Doha Development Agenda, and the Plan of Implementation of the World Summit on Sustainable Development (WSSD).

The Millennium Summit (New York, 2000) provided the venue in which world leaders agreed on quantitative goals to eradicate extreme poverty and hunger, promote human dignity and equality and achieve peace, democracy and environmental sustainability. Leaders promised to work together to meet those goals by 2015.

In November 2001, trade ministers from the World Trade Organization (WTO) gathered in Doha, Qatar to lunch a new round of trade negotiations. The spirit of the round was set to be equity in the negotiations and rules governing the world trade regime and development for all nations through increased trade. The Doha Declaration also reaffirmed governments commitment to the objectives of sustainable development set out in the Marrakech Agreement.

World leaders meet again in Monterrey, Mexico, in March 2002 to establish a partnership between developed and developing counties with the goal of mobilizing resource to finance development. The Monterrey Consensus proposed a cutting edge strategy to boost development resource through domestic policies, foreign direct investment, official development assistance, economic and technical cooperation, international trade, and sustainability of foreign debt, among others issues.

At the World Summit on Sustainable Development (Johannesburg, South Africa, September, 2002), the international community assessed the progress in the sustainable development commitments established at Rio the Janeiro in 1992. The Summit's Plan of Implementation adopted concrete goals and timeframes on different sustainable development issues.

The concept of environmental goods and services (EGS) was addressed directly and indirectly in the above commitments. In the sustainable development front, the Millennium Declaration recommended to halve by 2015 the proportion of people without sustainable access to safe drinking water. The Monterrey Consensus called for investment in basic economic and social infrastructure, development of public private partnerships, and measures to foster corporate social responsibility including the prevention of environmental impacts and the sustainable use of natural resources. Liberalization of trade in environmental goods and services is explicitly mentioned in the negotiating mandate of the Doha Development Agenda. Finally, the WSSD Plan of Implementation adopted the target on access to safe drinking water from the Millennium Declaration and added a similar target for basic sanitation services. Moreover, the WSSD Plan of implementation made a specific reference regarding the creation and expansion of markets for environmentally friendly goods and services This way, the development of national and international markets for EGS is expected to support the achievement of sustainable development.

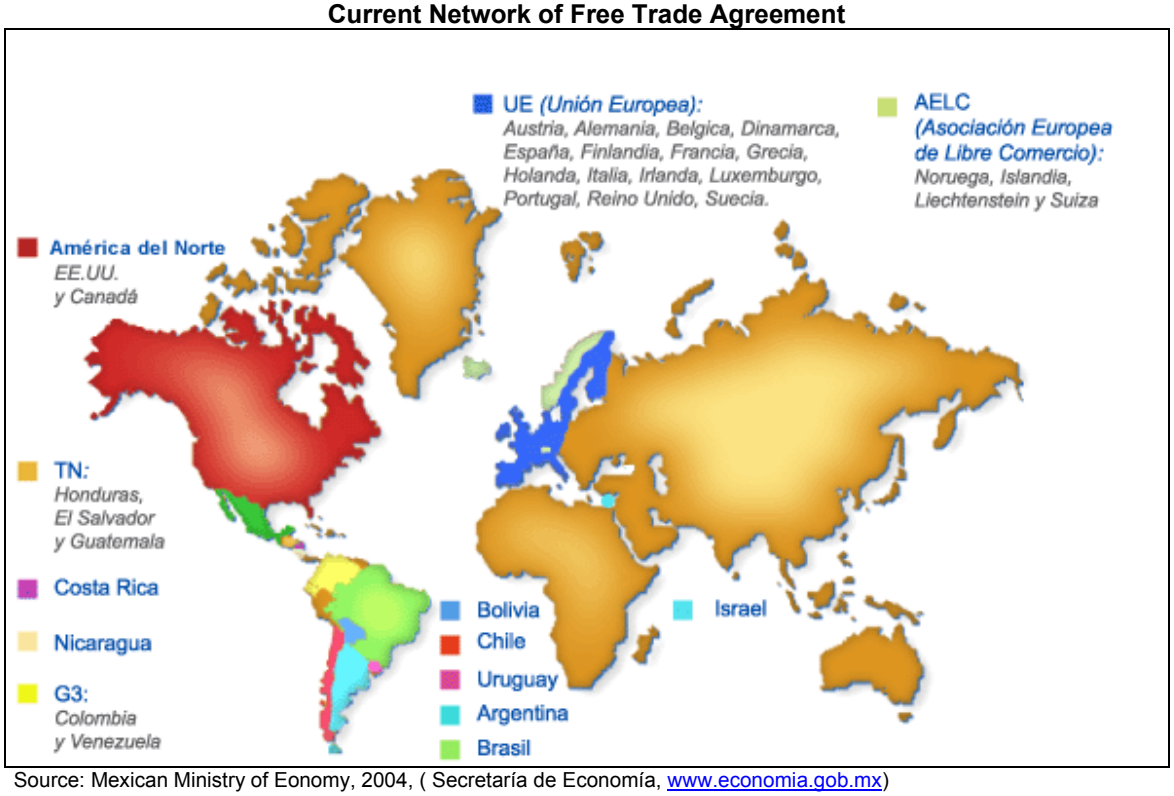
In order to follow up on the WSSD Plan of Implementation, the United Nations Commission on Sustainable Development will convene its 12th session from the 14th to the 30th of April, 2004. As the first thematic meeting since Johannesburg, the session has the goal to improve understanding in priority concerns in the areas of Water, Sanitation and Human Settlements, all, topics of urgency for the international community. The CSD 12 will provide a suitable venue in which government authorities and Major Groups will have the opportunity to discuss and provide guidance on ways to

push he Millennium Development Goals and the Johannesburg targets forward. In this context, the Mexican experience in the areas of water and sanitation in light of increasing international trade and investment might be worth exploring.

MEXICO: A TRADE ORIENTED COUNTRY

The decade of the 90s established a turning point for the Mexican economy. Fostered by regulatory reform, trade liberalization and institutional strengthening the country entered into the globalized economy. In 1994, Mexico signed a free trade agreement with the United States and Canada to create the largest market in the world. Since then, international trade has become one of the main drivers of the economy. Nowadays, Mexico is the country with the largest number of international free trade agreements signed in the world, totaling 32 countries[1]. Not including the WTO, this network of free trade agreements represents business opportunities in a market of 870 million consumers.

Figure 1
Current Network of Free Trade Agreement



Source: Mexican Ministry of Eonomy, 2004, (Secretaría de Economía, www.economia.gob.mx)

International trade accounts for 30 % of Mexico's GDP, up from 17 % in the early 1990s. The country has been relatively successful in raising its market share in world total exports to 2.6 % in 2000-01 from 1.4 % 15 years earlier. The growing predominance of manufacturing goods in exports has lowered the vulnerability of export revenue to changes in oil prices. Increasing openness of the economy has been accompanied by the development of intra-industry and intra-firm trade[2].

[1] Mexican Ministry of Economy (Secretaría e Economía), 2004, www. economia.gob.mx

[2] OECD, *Economic survey,* 2003

Although there is a close synchronization of the industrial sector with the US, the current account balance is less vulnerable to the cycle of its trading partner than in the past[3].

The manufacturing-for-exports phenomenon is important in other respects. Because the factories that are essentially part of the US manufacturing sector, the large increases in "foreign trade" in manufactured goods do not in practice impinge as much on the Mexican economy as the trade-growth figures suggest. The lowering of tariff and non-tariff barriers has undoubtedly had an impact on the strength of competition on the domestic economy, but much of the economy remains comparatively closed, because of over-regulation, and high transport and communication costs. The failure of productivity to pick up in a sustained fashion, 10 years after entry into NAFTA, suggests deep-seated problems of adaptation and lack of competitiveness outside the narrowly-based manufacturing export sector, which are only slowly being resolved[4].

The country has made efforts to enhance its institutional and regulatory frameworks for the development of different industries. By enhancing its business environment, investment has thrived and the structure of the economy has been transformed. In this regard, a natural resource oriented economy, highly dependent on oil exports, gave room to a booming manufacturing industry. Product market competition has been sharpened in recent years and trade liberalization has made the Mexican economy more responsive to market forces. Nevertheless, there are legal and regulatory obstacles to investment in certain key sectors, electricity in particular, while in others, such as telecommunications, regulations have been unable to ensure a level playing field between the incumbent and new entrants[5]. Today, Mexico is the 9th largest economy in the world. However, social and environmental problems remain setting major challenges for sustainable development implementation.

MEXICO: AN ENVIRONMENTALLY ORIENTED COUNTRY

Attempts to integrate environmental concerns into the public policy making process date back to the 1980s with the establishment of the first regulatory and institutional schemes including the enactment of a federal environmental law[6]. However, it was not until the mid 1990s that the Mexican government started implementing the Agenda 21 commitments adopted in the Earth Summit. Indeed, the 1995-2000 National Development Plan[7] incorporated for the first time in Mexican history the principle of sustainable development. In the institutional front, environmental protection and sustainable use of natural resources was elevated to cabinet level with the creation of the Ministry of Environment Natural Resources and Fisheries in 1995. Since then, a considerable network of complementary laws, regulations, standards and institutions for environmental protection and natural resource management has been established. The Federal Law of Ecological Balance and Environmental Protection (LEGEPA) enacted in 1988 was amended in 1996 and 2001 to incorporate modern tools for environmental protection including pollution prevention, self regulatory and economic instruments, as well as social participation. In addition, all states and several local governments have developed comparable regulatory frameworks for environmental protection. An increasing number of environmental offences are now considered in

[3] Mexican trade activity within the NAFA region, mainly with the United States, accounts for more than 80 per cent of its global trade activity.

[4] OECD, *Economic survey,* 2003

[5] Ibid.

[6] The General Law of Ecological Balance and Environmental Protection was enacted in 1988. This law sets the framework for environmental protection and natural resource management through a combination of command and control instruments, environmental planning and economic instruments.

[7] National Development Plans are designed and published every six years with the change of federal executive administration. They set the framework and guidelines for public policy making in Mexico.

the criminal code and sanctions have been issued to address violations. The 2001-2006 National Development Plan (PND) places once again, the principal of sustainable development at the center of public policy making. National Ministries and Agencies are encouraged to set their own sustainable development goals and indicators. In addition, due to their strategic importance to social and economic development as well as to environmental sustainability, **water and forest policies have been declared issues of national security within the PND**.

Mexico has also played a major role in the international environmental agenda. The country has signed and ratified the main Multilateral Environmental Agreements as well as several agreements at the continental, regional, sub-regional and bilateral levels in the areas of environmental protection, natural resource management and sustainable development. The current network of international environmental agreements totals more than 100.

Despite all these gains in terms o regulatory and institutional building, Mexico faces major challenges to control and revert pollution patterns and unsustainable use of natural resources. Since 1960, the country has lost 30% of its tropical and temperate forests as a result of deforestation, soil degradation and conversion of forest to agricultural land. Desertification trends have increased with direct impacts on productivity, ecosystems and poverty. Also, the growth rate of water demand has doubled population growth affecting both the availability and the quality of this natural resource. Marshlands and swamps have lost a significant share of its territory to development of oil infrastructure and tourism. The quality of these ecosystems has deteriorated due to land-based pollution. On the other hand, the industrial development and urbanization phenomena have increased the pollution levels of air, water and soil in different regions.

CONVERGENCE BETWEEN TRADE AND ENVIRONMENT

Environmental issues have not been absent from international trade negotiations. Indeed, the link between environmental and trade issues is a logical consequence of economic integration. In this regard, trade and environment has become an area of debate, discussion, analysis, and policymaking both at the national and international levels. In the last 10 years, trade and environmental agreements and institutions have incorporated this topic to their texts and working programs. Some issues of interest for the trade community are market access and environmental requirements, compatibility between trade and environmental regimes, and trade in environmental goods and services. On the other hand, the environmental community is interested in the environmental impact of trade liberalization and in applying trade policy instruments for environmental protection, as it has been the case of some Multilateral Environmental Agreements (MEAs) and more recently the relationship between Intellectual Property Right and biodiversity, among other topics.

In the multilateral context, the objectives of sustainable development and environmental protection are explicitly recognized in the Preamble of the Marrakech Agreement, which gave birth to the World Trade Organization. Regionally and bilaterally, different approaches exist to deal with environmental issues, ranging from the incorporation of environmental principles in the text of trade agreements to comprehensive side agreements and institutions for their implementation.

Mexico has been involved in the trade and environment arena since its early stages. Trade and environment issues have range from Dispute-Resolution Panels within the WTO such as the *tuna-dolphin case* in 1991, to comprehensive environmental side agreements such as the North American Agreement on Environmental Cooperation within NAFTA. Chapter 34 of the Mexico-European Union Economic Partnership Agreement which calls for incremental actions in environmental policy with the potential to establish a comprehensive cooperation agreement is another example of positive convergence between trade and environment policies. The current negotiations towards an Economic Partnership Agreement between Mexico and Japan might also consider an environmental cooperation component.

Due to its potential impact on market access, environment has sometimes been perceived as an unwelcome guest in international trade clubs, or to put it in diplomatic terms as a sensitive issue, especially for developing countries. However, in the last years efforts have been made to foster *positive* aspects of the trade and environment relationship. Trade liberalization in environmental goods and services has been addressed as one of these positive aspects. If approached correctly, it has the potential to foster economic, environmental and developmental benefits for developing and developed countries alike.

ENVIRONMENTAL GOODS AND SERVICES

The positive sustainable development impacts from the liberalization and market expansion of environmental goods and services (EGS) and environmental preferable products (EPP) has been addressed in diverse international fora[8]. Perhaps, the most popular quotes when discussing this topic are the ones included in World Trade Organization - Forth Ministerial Declaration (Doha, Qatar, November, 2001) and the World Summit on Sustainable Development - Plan of Implementation (Johannesburg, South Africa, September, 2002) that call for the liberalization and market expansion of these sectors[9].

Despite all the work undertaken in this field for the last years, the international community has not reached a consensus on suitable definitions and classifications to support the implementation of the above mentioned mandates. Neither the Doha Declaration, nor the Johannesburg Plan of Implementation define or propose a classification for the EGS sector. Post- Doha negotiations in this topic have relied both on documents submitted by members (including the European Union, the United States, Canada, Switzerland, New Zealand, Japan, Australia, and Colombia) and on the work developed in other fora. Among the later one, the definitions and classifications proposed by the Organization for Economic Cooperation and Development (OECD), the Asia Pacific Economic Cooperation Mechanism (APEC) and the United Nations Conference on Trade and Development (UNCTAD) stand out.

Within the services dimension, WTO negotiations towards trade liberalization of environmental services began before Doha. Article 19 of the 1995-General Agreement on Trade in Services (GATS) instructs WTO members to starts discussions on format and procedures for negotiations in 2000. A few months later, the Doha mandate set deadlines for the requests (June 2002) and offers (march 2003) processes, as well as for the conclusion of the round in 2005. The base classification

[8] Some fora in which the EGS and EPP have been addressed directly or indirectly include, but are not limited to: The Millenium Summit (2000), the WTO 4th Ministerial Declaration (2002), the Monterrey Financing for Development Meeting (2002), and the World Summit on Sustainable Development (2002). The topic is also a key component of the work programs of many economic and environmental cooperation agencies and commissions. Some of them include the Organization for Economic Cooperation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD), the North American Commission for Environmental Cooperation (NACEC), the Asia Pacific Economic Cooperation Mechanism (APEC) and the Economic Cooperation Latin American Commission (ECLAC). There are also some International Non Governmental Organizations and Think Tanks carrying out initiatives in this area such as the International Center for Trade and Sustainable Development (ICTSD).

[9] Paragraph 31 (iii) of the WTO- Forth Ministerial Declaration states: "With the 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, (WTO*, Forth Ministerial Declaration*, Doha, Qatar, November, 2001: www.wto.org). Paragraph 99-b of the WSSD Plan of Implementation states: "Complement and support the Doha Ministerial Declaration and the Monterrey Consensus by undertaking further action at the national, regional and international levels, including through public/private partnerships, to enhance the benefits, in particular for developing countries as well as for countries with economies in transition, of trade liberalization, through, inter alia, actions at all levels to:

(b) 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 through, inter alia, capacity-building and technical assistance to developing countries (WSSD, *Plan of Implementation*, Johannesburg, South Africa, September 2002: www.johannesburgsummit.org)

for trade negotiations in environmental services at WTO is the W/120 derived from the United Nations Central Product Statistical Classification (CPC) and focuses mainly on waste management and pollution control issues. Box 1 includes the subcategories of the W/120. Some countries have proposed new approaches for classification to capture the developments in environmental policy form the last yeas (mainly in the area of pollution prevention). However, these proposals have not reached full consensus within WTO members.

Box 1

W/120 Classification for Environmental Services
A. Sewage services (CPC 9401) B. Refusal and disposal services (CPC 9402) C. Sanitation & Similar services (CPC 94030) D. Other services: ▪ Cleaning services of exhaust gases (CPC 9404) ▪ Noise abatement services (CPC 9405)

Source: World Trade Organization, Environmental Services, www.wto.org

On the other hand, the work to assemble a list of environmental goods and service in the APEC forum started in 1995 with the proposal to identify sectors for "early voluntary liberalization" (EVSL) with positive impacts in trade and economic growth. By 1997, APEC economies decided to include environmental goods and services within the EVSL. The APEC approach started with nominations yielding a list of goods, which was then arranged according to an agreed classification system. It included only goods that could be easily identified by custom agents and treated differently for tariff reduction purposes. For this reason, issues related to "like products", products defined by particular processes or production methods, and products defined by their life-cycle impacts were minimal[10].

In 1996 the OECD, in collaboration with the Statistical Office of the European Communities (EROSTAT), engaged into a project for collecting and analyzing data from the environmental goods and services industry that concluded with the publication of a manual in 1999. The manual included a definition, a classification and a list of goods related, to the extent possible, with the Harmonized System of Classification (HS Codes). The exercise was intended to illustrate, primarily for analytical reasons, the scope of the environmental industry. This list was created deductively, starting from general categories based on the classification appearing in the OECD environmental industry manual, and adding more specific examples, in order to produce an estimate of the average tariffs on previously undefined classes of goods. This manual represents one of the first attempts to define and classify the industry at the international level[11].

UNCTAD has also undertaken several initiatives in the areas of Environmental Goods and Service and Environmentally Preferable Products to the point that they have been granted observer status to the WTO negotiations under paragraph 31 (iii). Its work has led to a classification proposal consisting in four categories: Environmental Infrastructure Services, Air Pollution Control Services, Sanitation and Remediation Services, and Support Services. UNCTAD has also carried out significant work in the area of Environmentally Preferable Products (EPP) and green markets.

[10] OECD, *Environmental Goods: Comparison of the APEC and OECD Lists*, Paris 2003

[11] Ibid.

Apparently, the international debate around the adoption of EGS definitions and classifications for trade purposes tends to converge in the idea that the OECD/APEC proposals will not present a "one size fits all" solution. One argument central to this idea is that most of the EGS included in these lists are support goods and services either for pollution prevention and control or for natural resource management. Another argument is that most of the EGS from the OECD/APEC lists rely on technological solutions to environmental problems and present a comparative advantage to developed countries in the international trade context. Moreover, some of the categories and sub categories from these classifications are not sufficiently developed in areas in which developing countries could obtain the largest gains from trade liberalization. This is the case of the last two groups from the OECD classification[12]. One more argument is that the regulatory and institutional frameworks are not solid enough in developing countries to engage in a trade liberalization process based on the OECD/APEC approaches. This is particularly true in countries where the majority of the services considered by those lists are still provided by the government.

Implications for Mexico: The challenges of defining a position among available classifications for EGS

Within this context, Mexico faces major challenges in defining its position towards the most suitable definition/classification of EGS in light of its sustainable development goals. One on hand, Mexico is the 9th largest economy and member of both OECD and APEC. The country has also invested a considerable amount of resources (relative to countries with the same degree of development) to enhance its institutional and regulatory frameworks both for environmental protection and for the development of a diverse range of industries in its market including the environmental industry[13]. Nowadays, Mexican standards for environmental protection and its public policies to meet those standards compare and in some cases exceed those of some developed countries. Despite the major gains in the development of institutions and regulations for environmental protection, Mexico is experiencing difficulties to comply with its own standards. Poverty and unsustainable patterns of production and consumption are the main drivers for depletion of natural resources and biodiversity[14]. In addition, the urban environmental challenges, including escalating air, water and soil pollution rates and the need to provide waste management, sanitation and potable water service to a growing population in the context of scarce government resources, demand the provision of cost efficient technologies and services.

On the other hand, Mexico has the second lowest GDP per capita rate among OECD countries[15] and over one third of its population lives bellow the poverty line, especially in the rural sector. It is also the country with the second lowest environmental expenditure rate among OECD members[16] which, in some cases, hinders its capacity to implement environmental/sustainable development recommendations emerging from such organization. This trend is particularly evident with recommendations regarding the adoption of expensive environmental technologies and the use of

[12] The OECD proposes three major categories to classify the environmental goods and services industry: a) Pollution Management, b) Cleaner Technologies and Products, c) Resource Management. (OECD, *The Environmental Goods and Services Manual*, Paris, 1999)

[13] Some sub-sectors within the EGS industry (notably water and waste management) have undertaken regulatory reform processes to liberalize certain services that were traditionally provided by the government.

[14] Mexico has one of the largest deforestation rates in Latin America. The country losses 600, 000 hectares of virgin forest a year, representing a 1.5-% deforestation rate. Fifty percent of its river basins are being managed beyond their caring capacity. Also, fifteen species of plants and 32 species of vertebrates have become extinct in the Mexican territory. (Mexican Ministry of Environment and Natural Resource, *Environmental and Natural Resources Program 2001-2006,* Mexico, 2001)

[15] Its GDP Per capita in 2002 was US $ 9,200 when the OECD average was US $25,000 (OECD, *National Accounts of OECD Countries, Main Aggregates, Volume I,* 2004, www.oecd.org)

[16] Mexico's Environmental/GDP expenditure in 2002 was 0.7 when the OECD average was 1.2. (OECD, *Environmental Performance reviews Achieved in OECD Countries- Second Cycle,* Paris, 2004: www.oecd.org)

economic instruments. Moreover, Mexico shares with other developing countries a comparative advantage in the export of some environmentally preferable products, particularly in the primary sector (sustainable agriculture, forestry, fisheries and biodiversity[17] management) and in some services sub sectors such as tourism and energy. The increased liberalization in international trade in goods and services coming from these sectors could not only bring significant environmental and economic benefits to the country, but it also has the potential of achieving some important social benefits. In many cases the provision and production of such goods and services rely on labor from low-income communities and indigenous groups. This way, Mexico will need to asses the costs and benefits from trade liberalization of EGS under different definitions and classifications and taking into consideration the three dimensions of sustainable development. The North American Commission for Environmental Cooperation (CEC) in collaboration the International Center of Trade and Sustainable Development (ICTSD) is currently undertaking a sustainable impact assessment of trade liberalization of the EGS sector in Mexico.

PRIVATE PARTICIPATION IN WATER AND SANITATION SERVICES IN MEXICO

For the last five decades, different government authorities have made considerable efforts to expand and improve potable water and sanitations services throughout Mexico achieving remarkable results. While in 1950, Mexico's population accounted for 26 million with coverage of potable water and swage services representing 43 and 23% respectively, today the population of 100 million has coverage of 87 and 73% in the same variables. This means that the number of people with access to potable water has increased in 75 million and the one with access to sewage 67 million. These figures are bigger than the current populations of France, Italy or England or equivalent to the combined populations of Argentina, Chile and Venezuela. However, 10.4 million people remain without access to potable water and 24 without access to swage services. Most of the people without access to these services live in rural low-income communities[18]. Moreover, only 27% of the wastewater produced in the country is treated[19].

With regard to sanitation services, significant investments are needed both to for new waste water treatment infrastructure and for rehabilitation of the existing one, since a considerable amount of the later one do not operate satisfactorily. There are currently 1,011 waste water plants operating at 22.3% of its efficiency level in the municipal sector. On the other hand, the 1,471 waste water plants operation in the industrial sector are treating only 13% of the water discharged[20].

In order to comply with the Millennium Development Goals and the Johannesburg Plan of Implantation, Mexico has set ambitious quantitative targets in the areas of water and sanitation for the next 25 years, as it is presented in table 1 bellow. The resources needed to meet these targets reach 73.5 billion dollars in 25 years or 3 billions a year. Current public resources available for potable water, sewage and sanitation are considerably lower than such figures. Even when adding water charges to federal government subsidies, available resources account for only 42% of the investment needed[21].

[17] Mexico is a Megadiverse country hosting 10% of the flora and fauna species in the world. It is the fifth most diverse country in plant species, the first one in pine species, the fifth one in mammals, the second one in reptiles, and first one in endemic reptile species (Mexican Ministry of Environment and Natural Resources, *Environmental and Natural Resources Program 2001-2006*, Mexico, 2001)

[18] National Water Commission (Comisión Nacional del Agua), *Private sector Participation in Water and Sanitation Service*, Mexico, 2001

[19] Ibid.

[20] Ibid

[21] Ibid.

Table 1
Goals for the water and sanitation sectors in 2025

INDICATOR	CURRENT	2025
Urban water coverage	94.4%	97%
Rural water coverage	64.5%	97%
Urban sewage coverage	87.0%	97%
Rural sewage coverage	32.1%	97%
Sanitation	21.8%	90%

Source: Mexican National Water Commission , *Private Participation in Water and sanitation Services, (*CAN*:* Mexico, 2001)

Efficiency issues among water service operating companies and lack of federal funds due to budgeting capacity and competing priorities from other public policy areas are the main causes of insufficient resources to finance infrastructure and operating costs in the water and sanitation sectors. Studies undertaken by the Mexican National Water Commission have concluded that 44% of the volume produced is lost due to water leaks and illegal water diversions. With regard to commercial efficiency, only 80% of the water bills are collected and there are significant subsidies and cross subsidies in benefit of the agricultural sector and some government bodies. The product of operating efficiency and commercial efficiency leads to a global efficiency of only 45% for the water sector which is beyond international standards[22]. Table 2 bellow presents the efficiency figures for different population groups.

Table 2
Efficiency indicators in the Mexican Water and Sanitation Sector

INDICATORS	Communities of 50 000- 500 000 people	Communities of 500 000 – 1 Million people	Communities of More tan 1 million people	Total Indicator
Commercial Efficiency	71%	78%	86%	80%
Operating Efficiency	51%	53%	65%	56%
Global Efficiency	36%	41%	56%	**45%**
Water Production (million of m3/year)	1127	1034	1001	31161

Source. Mexican National Water Commission, *Private Participation in Water and sanitation Services, (*CAN*:* Mexico, 2001)

Given the above mentioned figures and the fact that tariffs are in many cases set bellow the cost, it is evident that the financial situation of many operating companies in Mexico is fairly deteriorated.

[22] Ibid.

Another factor affecting the efficiency of water operating companies is the lack of continuity in their management programs. According to article 115 of the Mexican constitution, the provision of water and sanitation falls under the responsibility of municipal governments. While this policy brings the services operation closer to the final users (decentralization), the administration period of heads of municipalities last only 3 years and the one for managers of water operating organisms less than 2 years in average. This turnover of managers at the local level, prevents continuity of programs and policies and reduces the incentives for long term investment.

In this regard, under certain conditions, private participation is a worth exploring alternative to support the achievement of Mexico's 2025 targets for water and sanitation. Some advantages from private participation include:

- Improvement of operating and commercial efficiency
- Potential improvement in service quality
- Continuity and stability of policies and programs
- Speed and flexibility in the decision making process and resources assignation
- Separation of operating and regulatory attributions

Potential efficiency gains through private participation might divert public resources necessary in sectors where there is not commercial interest. The current Mexican regulatory framework for water and sanitation considers provisions for the participation of private parties. Article 27 of the Mexican constitution establishes that all waters within the Mexican territory originally belong to the Nation, but its exploitation and use can be granted to private parties through concessions. Article 115 of the same Constitution establishes the responsibility of Municipal authorities for the provision of water and sanitation services through out the country. Likewise, Municipal governments have the faculty to outsource those services through concessions. When water and sanitation services are outsourced to private parties, water remains a national property and the municipal governments keep the rights and obligations for its use and exploitation.

In addition, it is important to stress that article 102 of the National Water Law[23] considers private participation in the sector a matter of public interest due to its potential to support financing, construction and operation of hydraulic infrastructure. Some schemes for private participation considered in the Mexican Water Law include:

- Public works and service contacts with possibility of return to investment
- Total or partial concessions for operation, conservation, maintenance and expansion of hydraulic infrastructure
- Total or partial concessions to built, own, operate and transfer (BOOT)
- Concessions for comprehensive services

There are other federal, state, and local laws regarding public works, property rights, and fiscal issues that complement the provisions from the Constitution and the Mexican Water Law. Nevertheless, despite the existence of regulatory and institutional frameworks, private participation in the Mexican water and sanitation sectors is still incipient. Only 4 cities in Mexico[24] have signed

[23] The main water regulation in Mexico

contracts or granted concessions for comprehensive potable water, sewage and sanitation services. A few cities, have signed contracts for partial services related to water and sanitation issues[25]. Due to its potential to improve global efficiency and to generate additional investment resources, the federal government has explored tow strategies to further promote private participation in the water and sanitation sectors in Mexico:

1. Programs to bind subsidy programs to private participation and tariff efficiency in Municipalities[26].

2. Initiatives to foster international trade and investment in water and sanitation services

The Mexican experience with the second strategy as it regards to international trade is presented in the next section.

MEXICO'S EXPERIENCE IN THE PROCESS OF EGS- TRADE LIBERALIZATION

Although there were a few initiatives to assess the environmental market in Mexico before 2000[27], it was the GATS process and more specifically the deadline established in article 19, which triggered government involvement in this area. In early 2001, WTO members started circulating proposals to guide the negotiations mainly directed to update the W/120 classification for environmental services in light of recent developments in environmental policy. The Mexican ministry of Economy in collaboration with the Ministry of Environment and Natural Resources with support of some international organizations (including the CEC, the OECD and ECLAC) undertook a preliminary assessment of the market and the feasibility for trade liberalization. The main conclusions from these assessments are presented in Box 2.

[24] Aguascalientes, Cancun, Navojoa, y Nogales

[25] Mexican National Water Commission (CAN), *Private Sector Participation in Water and Sanitation Service*, Mexico, 2001

[26] See the Mexican National Water Commission PROMAGUA program for more information about this strategy, www.can.gob.mx

[27] Indeed, the North American Commission on Environmental Cooperation has undertaken different comprehensive and sector-specific studies of EGS and EPP in which aspects or case studies from Mexico are considered. For more information see www.cec.org/pubs_docs

Box 2

Preliminary Conclusions Regarding Liberalization of the Environmental Goods and Services Sectors in Mexico

1) Mexico faces significant environmental challenges, which might benefit from increased trade in environmental goods and services. Nevertheless, some regulatory gaps and enforcement deficiencies, socioeconomic, political and cultural factors need to be addressed to maximize the benefits from development of the Mexican EGS market. The benefits from international trade in EGS might include:

- The enhancement of infrastructure to complement local capacities, as could be the case of renewable energy production and hazardous waste facilities.
- The strengthening of environmental monitoring and management capacities.
- A reduction in the relative prices of environmental goods and services, due to an enlarged supply and, as a result greater competition among suppliers.
- Additional incentives for conservation and sustainable use of natural resources, through, for example, international demand of eco-tourism or organic agriculture activities.

2) The benefits of a liberalized trade of EGS for Mexico should be assessed considering the complexity of environmental problems and the specific weaknesses and strengths of environmental management, bearing in mind possible negative effects.

3) Significant benefits from an increased flow of EGS seem to be associated to the possibility of reinforcing the availability of cleaner technologies and products, which stimulate a technological transition towards a more sustainable production path and support a more prevention-oriented and cost-effective environmental policy.

4) Important benefits may also arise from liberalizing trade of goods and services related to natural resources. Increased availability of technologies and additional investment for water management, recycled materials and technologies for renewable energy use, as well as the possibility of exporting products and services, like organic primary goods and eco-tourism activities, are among the potential sector for international trade.

5) A multi-step approach may need to be taken towards liberalization of EGS when regulatory frameworks are not fully developed and incipient institutional capacities exist at the national level.

6) A precise definition of EGS is a relevant issue for developing countries. The classifications proposed until now in different fora do not reflect properly the characteristics of this sector, or provide an adequate platform for trade negotiations. A complete and harmonized system of classification should be developed for this market.

7) The harmonization of classifying criteria needs to be complemented with commonly accepted certification mechanisms at the multilateral level. For developing countries, certification mechanisms should be a central item in negotiations. If this point is not satisfactorily addressed, then developing countries could neither benefit from its potential regarding natural resources management, nor from an increased trade of clean technologies and products.

8) International trade in EGS should support technology and expertise transfer to complement local efforts and capacities. Moreover, it should also open export opportunities for local suppliers and providers, which may benefit from accumulated experience in some market segments.

9) An issue that requires more attention is the linkage between international trade and ecological services —i.e. services provided by the natural functions of ecosystems, such as genetic biodiversity, carbon sequestration, landscape beauty and heritage. The trade implications of such services are clearly exemplified by the increasing interest on eco-tourism activities. In the case of Mexico this is a relevant issue, not only in commercial but also in environmental and developmental terms.

Source: CEC-OECD, *Identifying Complementary Measures to Ensure Maximum Realization of Benefits From the Liberalization of Trade in Environmental Goods and Services, the Case of Mexico*, 2003

But Mexico's intention to analyze its EGS market in order to determine the feasibility for trade liberalization did not stop WTO members from meeting their Doha deadlines. In the middle of 2001, some countries (mainly developed) sent requests to Mexico to open its environmental services sector by complying with the principles of market access and national treatment in the four modes of supply considered by the GATS[28]. Mexico responded to those requests in 2003 by presenting an offer that included market access and national treatment commitments (at the federal level) in two sub-sectors of the W/120 classification: sewage services, sanitation and similar services. Some safeguards to provide for regulatory flexibility, and to address the autonomy of Municipal authorities to grant concessions and set the rules of the game in terms of tariff structures complemented the Mexican offer in this service sector.

However, the Doha round has not come to an end, the deadline to conclude the negotiations is 2005. Mexico still has the opportunity to propose, or support definition and classification approaches that maximize the sustainable development gains from trade liberalization in the goods and services dimensions. It will also be important to strengthen the negotiation capacity and mutual understanding of trade and environment authorities to assure gains for both policies.

ASSESSING THE SUSTAINABLE DEVELOPMENT BENEFITS FROM TRADE LIBERALIZATION OF EGS UNDER DIFFERENT DEFINITIONS AND CLASSIFICATIONS

Mexico could obtain potential benefits from the liberalization of the EGS sector both under the OECD scheme and under a broader definition for this type of goods and services. Perhaps, a likely approach could be to build upon the OECD classification by adding goods and services of trade interest to Mexico and then assessing the sustainable development implication.

An approach of this kind is worth experimenting not only because Mexico is a member of the OECD. The OECD classification seems to be the most elaborated one of the proposals available. It also assigns HS codes to most of the goods considered and the major services categories could be assigned Central Product Classification (CPC) symbols. This classification is also useful in terms of environmental policy making because it addresses end of pipe problems as well as pollution prevention and sustainable resource management to improve Eco-efficiency. Finally, since the OECD list was originally developed for analytical purposes, it is indicative (not exhaustive) and gives room to add more products and services broadly defined.

A way of adapting the OECD classification in order to incorporate goods and services broadly define is to divide its three major groups into two categories:

- **Environmental/Sustainable Preferable Products:** According to their

  a) extraction, production criteria

  b) use, characteristics and disposal criteria

- **Environmental Quality Support Goods/Services**: According to the end use or purpose.

Adapting the OECD classification to boost sustainable development impacts from EGS trade liberalization

The OECD classification proposes three major groups: A) pollution management, B) cleaner technologies and products, and C) resource management. Very likely, the group with the largest potential for including goods and services in which Mexico would have trade interest is C.

[28] See General Agreement of Trade in Services, 1995, www.wto.org

The OECD resource management group embraces activities that produce equipment, technology or specific materials, design, construct or install, manage or provide other services which are intense in natural resource extraction and/or in terms of their environmental impact to diverse ecosystems. This category addresses some primary productive activities and services such as sustainable agriculture and fisheries, and sustainable forestry. It also includes certain service activities that provide inputs for production in other sectors of the economy or represent components of the basic needs basket and welfare of households such as energy, water supply, and tourism. It considers a class for recycled materials that might be explained by its potential to reduce the use of raw materials[29] and a class for natural risk management due to its relation to sustainable natural resource extraction and use. There is no straightforward explanation for including the indoor air pollution control class in this group instead of including it in the pollution management group. In any case, all the classes embraced in the resource management group deal with inputs to provide a sustainable activity and not with the output from that activity. Some countries, including Mexico could have comparative advantages in the production or provision of outputs from sustainable activities. However the consideration of outputs in this group will imply in most cases the use of labeling and/or certification schemes for identification, confidence and reliability purposes.

The demand for environmental, sustainable and social-responsibility labeling and certification schemes has grown exponentially in Mexico over the last decade[30]. A detailed analysis of environmental and labeling schemes goes beyond the scope of this document. However, it is very likely that Mexican goods and services will continue to adopt these marketing and regulatory compliance schemes in the future both in domestics and international markets. For this reason, in the case of Mexico, it is possible to broaden the traditional definition of EGS proposed in the OECD list by considering outputs from sustainable activities in certain categories of the resource management group. There might also be a few opportunities for including some goods and services broadly defined in group B -cleaner technology and products –. Trade liberalization of broadly defined EGS could have significant beneficial impacts not only in the environmental and economic dimensions of sustainable development but also in the social dimension.

A broad definition of environmental goods and services under the OECD resource management group would include goods and services grown, extracted, manufactured and provided following sustainable criteria in all or some stages of their life cycle. It could include both goods and services provided by the environment to humans[31] and these provided by humans to improve environmental quality. It is important to foster the recognition of environmental and sustainable criteria by domestic and foreign markets and regulatory schemes through transparent, sound and feasible (technically and economically) certification practices, labels and standards. In addition, international standardization, equivalency and mutual recognition initiatives for environmental standards, labels and certification schemes are areas worth exploring. Some of the most popular schemes currently available in the Mexican market have engaged (or are in the process of engaging) in different types of mutual recognition and equivalency initiatives with international partners. In order to adapt the OECD classification in a way that EGS of export interest to Mexico can be added to the list, the definition of some categories need to be edited[32].

[29] The example included in the OECD indicative list of goods is recycled paper which represents a substitute for paper manufactured with raw materials extracted from forests (OECD, *The Environmental Goods and Services Manual*, Paris, 1999)

[30] The number of environmental, sustainable and social responsibility labeling and certification schemes in Mexico – administrated by governments, international organizations, the private sector or non governmental organizations – has grown from approximately from 2 at the beginning of the 1990s to more than 40 today (North American Commission on Environmental Cooperation, *Environmental Labeling and Certification Schemes in Mexico*, project in progress to be completed in April of 2004)

[31] Some of the services provided by the environment to humans include ecological balance such as the balance of river basins, carbon sequestration, ozone layer, and recreational use of biodiversity including recreational hunting and fishing, Eco-tourism and landscape.

[32] For a complete explanation regarding the OECD classification see: Environmental Goods and Services: the Benefits of Further Global Trade Liberalization, OECD, 2001

Group A -Pollution Management – does not present a challenge given that most of its categories are related to to-end-of pipe policies and products. Its goods and services are defined in terms of its end use or product and most of them are support services to enhance environmental quality. This category is also the most elaborated one and does not present significant opportunities for including broadly defined EGS of trade interest to Mexico. Therefore the definitions on each category remain unchanged. However, this group presents potential for multiple final use of the same good (e.g. non-environmental use) and provision should be undertaken to address this issue in order to prevent impacts to other industries outside the environmental one.

Group B – Cleaner Technologies and Products - is directly related to efficiency criteria in the production process and also to the reduction of environmental impacts in the final stage of the life cycle of products. These types of criterion are dynamic and in most cases require certification processes. Some goods and services of trade interest to Mexico can be incorporated to this group. However, the current definitions for the categories included in the group B fit a broad definition and do not need to be edited.

It is group C – Resource Management – in which edition and addition work needs to be carried out in order to incorporate several goods and services with the potential of boosting sustainable development impacts from trade liberalization to Mexico. Box 3 includes the edition proposals and category additions necessary to facilitate the incorporation of goods and services of trade interest to Mexico.

Box 3

Edition Proposals to the original OECD/EUROSTAD Classification to facilitate the incorporation of EGS broadly defined*
A. The "POLLUTION MANAGEMENT" group
Environmental equipment and specific materials
Environmental services
B. The "CLEANER TECHNOLOGY AND PRODUCTS" group
C. The "RESOURCE MANAGEMENT" group
Indoor air pollution control
Potable water treatment and distribution
Water Supply and ***sustainable water management***
Recycled materials
Renewable energy
Heat /energy saving and management
Clean energy and fuels
This class includes any activity that produces equipment, technology or specific materials, designs, construct or install, manages or provides other services to reduce or minimize the environmental impact from the use of fuels and energy products to the environment. It embraces systems equipment and equipment for use of petroleum liquid gas, natural gas, methanol and ethanol, biomas and biogas, among others.
Sustainable agriculture and fisheries

This class includes any activity that produces equipment, technology or specific materials, designs, constructs or installs, manages or provides other services for systems which reduce the environmental impact of agriculture and fishery activities. It includes biotechnology applied to agriculture and fishery activities**. In addition, this class embraces products derived from sustainable agriculture and livestock management, including ecological farming[33] and conservation agriculture[34].**

Sustainable forestry

This class includes any activity that produces equipment, technology, or specific materials, designs, constructs or installs, manages or provides other services for programs and projects for reforestation and forest management on a long term sustainable basis. **It also includes wood species extracted using sustainable management practices from virgin or forested and reforested plantations, for marketing purposes as wood by-products or raw materials.**

Sustainable biodiversity and landscape

It includes all biological materials (excluding wood products) sustainably extracted from natural ecosystems for human use including species, resins rubber, latex, chicle, ornamental plants, wildlife fauna (products and live animals), and raw materials like bamboo, natural fibers, rattan and bromeliads.[35] It also includes the provision of services for the conservation and sustainable management of biological diversity and landscape, management and surveillance of parks and natural protected areas

Natural risk management

Sustainable tourism *and Eco-tourism*

This class includes any activity that designs, constructs, installs, manages or provides other services for tourism that involves protection and management of natural and cultural heritage, or education of the natural environment, and that do not damage or degrade the natural environment. **It also includes the provision of different tourism services following environmental and sustainable development criterion.**

Other

*Edits are underlined

Source: Self elaborated based on OECD/EROSTAD classification for environmental goods and services (OECD, The Environmental Goods and services Industry: manual for Data Collection and Analysis, 1999, Annex 1)

[33] Holistic management system are designed to enhance biodiversity, biological cycles and biological activity of soils. This type of production is based on reduced use of inputs and the exclusion of chemical synthesis.

[34] Is the type of agriculture that enhances conservation and efficient use of natural resources through an integrated use of land, water and biological resources combined with external inputs (FAO, 2002, *Conservation agriculture-matching production with sustainability* : www.fao.org)

[35] According to the project developed by the Rain Forest Alliance, 1989. Generic guidelines for assessing the management of NTFP in natural forest, this class could be further classified into four groups:

a) *Exuded*: resins, latex, rubber, colors and pigments for industrial and non-industrial use, in the food, cosmetics, and pharmaceutical industries.
b) *Vegetative structures*: Plant parts like steams, leafs, roots used, among others, in the pharmaceutical and food industries, as raw materials for handcrafts and ornament, as well as construction materials.
c) *Reproductive parts*: vegetal parts like nuts, fruits and seeds commonly used in the pharmaceutical, cosmetics, food and oils industries.
d) *Wildlife fauna*: includes live animals and products derived from direct extraction of wildlife fauna (pets, feathers, collection articles, etc.)