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**LATIN AMERICA AND THE CARIBBEAN PREPARATORY PROCESS
FOR THE TWELFTH SESSION OF THE
COMMISSION ON SUSTAINABLE DEVELOPMENT
COMPONENT: SANITATION**

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Solid urban waste

The amount of solid urban waste produced in the Latin American and Caribbean region has doubled in volume over the past 30 years, and has also changed in composition, with a diminishing amount of organic, thus biodegradable, waste, and increasing amounts of more persistent waste with a higher content of toxic substances (UNEP, 2000a, p.33 and UNEP, 2000b, p51).

This type of waste is generated in the region at a daily rate of from 0.5 to 1.2 kg per inhabitant, with the regional average at 0.92 kg. The average daily production of solid municipal waste is 330,000 tonnes. City size and per capita income are determining factors in the amount generated per inhabitant. The amount of solid municipal waste (SMW) generated, as a function of a country's income, expands annually by from 1% to 3% in relation to the increase in per capita income.

With regard to the management of SMW, few cities in the region have adequate storage facilities in homes, commercial establishments, hospitals and other points of large-scale generation. Standardized containers and the use of plastic bags have only been partially achieved in Havana, Rio de Janeiro and Buenos Aires. In other cities, only the middle and higher income strata have adequate containers and the only measure taken in other sectors is the provision of health education in order to improve containers by means of inexpensive changes. Itinerant trade in the streets and public areas is increasingly frequent in all the cities of the region.

As for collection, some large Latin American cities such as Buenos Aires, Santiago, Rosario, Havana, Mexico City, São Paulo, Rio de Janeiro, Bogota, Medellín, Cali, Montevideo, Brasilia and Caracas have collection services with from 90% to 100% coverage. In many metropolitan areas, however, such as Mexico, São Paulo and others, marginal districts in the suburban metropolitan areas are not included. The average collection coverage rate is 89% in large cities and 50% to 70% in smaller ones.

Metropolitan areas and large cities are resolving the problem of collection services by means of contracts to the private sector, as in the case of Buenos Aires and São Paulo, or by means of concessions to private consortiums, as in Bogota, or even to private collectors in the informal sector, as in Guatemala city.

Rapid urban growth over the past decades has caused rapid expansion that makes it increasingly difficult to find suitable sites for final disposal, owing to both opposition from neighbours and the high cost of land. The large distances to new landfill sites has led to the growing use of transfer stations that allow refuse to be transported in units of from 40 to 60 m³ at lower unit costs. There are such stations in Bolivia, Chile, Ecuador, Brazil, Argentina, Colombia, Mexico, Peru and Venezuela. In Rio de Janeiro, Mexico, Caracas, Monterrey, Guadalajara and Buenos Aires, over 50% of the refuse collected passes through such stations. It is expected that the use of such stations in the region will continue to grow.

In relation to making use of refuse or its characteristics, various cities in the region have adopted projects for incineration to produce energy, bioconversion by composting, auxiliary fuel production or refuse-derived fuel, and biogas from sanitary landfills. The results have almost always been discouraging results, with the exception of some biogas recovery projects, due to the fact that technical, institutional and economic analyses were not available to establish the need for and feasibility of the investments. At present, incineration and composting technologies are justified only in some cities of the region and in very special circumstances. According to reports from the Pan-American Health Organization (PAHO), the cost of such treatments is twenty times higher than those of sanitary landfills (IDB/PAHO/WHO 1998).

Although it can be said that good progress has been made with regard to waste treatment, it takes place only in a few large cities; the situation in other areas of the countries is not very gratifying. Meanwhile, most of the so-called sanitary landfills do not meet the technical specifications required to receive that designation, and could not even be considered controlled landfills.

Although the problem of MSW was identified several decades ago, in particular in the metropolitan areas, the partial solutions that have been achieved so far do not reach all the countries of the Region, and do not cover most of the medium-sized and smaller cities; thus becoming a permanent political issue which in most cases generates social conflicts.

There is a consensus among the countries of Latin America and the Caribbean and in the technical-financial community concerning the need to provide more support to the solid waste sector in the region; the analyses carried out by some countries and by the technical-financial support agencies thus far, including the sectoral analyses carried out by PAHO, however, show that there is a lack of national policies and plans in the solid waste sector, and that very little support has been provided to the operators of urban refuse collection services at the local level (PAHO/WHO 2001).

In fact, most of the countries of the region do not have national policies directly oriented to the problem of solid wastes and wastewaters, as the practice has been and continues to be for these services to be managed in a decentralized manner by the municipalities; particularly in the countries with a federal political and administrative structure. The institutions are weak and despite the fact that their poor management creates sanitary and health problems, the sector is making little progress towards its objectives of improving integral management services for solid wastes, reducing waste generation and recycling.

Even when significant progress has been made in the countries with regard to policies for recovery, reuse and recycling of solid wastes, most of these policies did not start on an official basis, but arose spontaneously over the past few decades from the sector of poor communities who were seeking an alternative income; the amount of solid waste recovered by segregators, however, is not high in relation to the quantity generated, although for dozens of thousands of families it constitutes their only means of survival.

The quantity of material recovered is greater when there is participation by the industry and the large waste generators, and when the recycling industry intervenes to support the process.

While unemployment is high and extreme poverty continues, the segregators will continue to exist. This is a social problem that will have to be resolved; support must be provided to organize and develop the managerial, operational and financial capacities of the cooperatives, associations and microenterprises of segregators.

There is little community participation in the area of solid waste management. The community considers the problem as solely the responsibility of the municipalities and the general public is not therefore represented in decision-making on waste management issues. Most of the countries have not worked out policies or strategies for social communication programmes, and activities in that area are isolated and occasional.

An important part of Agenda 21 consists of proposals for investment in education and information on collection and final disposal, generation reduction and recovery and reuse of solid wastes, involving all actors in the process, authorities, producers and generators, and especially the community. Although it is a long-term process, this is the correct path for achieving sustainable refuse collection, as confirmed by the progress made in industrialized countries.

Household wastewaters

In the region, the most serious and extensive contamination of surface and ground waters is caused by the dumping of household wastewaters without any treatment in rivers and lakes, and the infiltration of excreta from poorly maintained septic tanks and sewers.

Only 241 million people in the region, 48.61% of the population, are connected to conventional sanitary sewerage systems and 151 million persons, 30.60% of the population, have "in situ" sanitary systems, such as latrines, septic tanks and others. An estimated that 103 million people, 20.79% of the population of Latin America and the Caribbean, do not have systems to eliminate wastewaters and excreta, of which 37 million live in urban areas, and 66 million in rural areas (PAHO 2001).

The main challenge is the need to increase the coverage of sanitation services and to improve the efficiency of sanitary sewage systems and the technological models that provide "in situ" alternatives. The lack of treatment of wastewaters continues to be one of the most serious health problems in the Region, particularly in the Caribbean. The 2000 Assessment (PAHO 2001) indicates that only 13.7% of wastewaters collected by the few existing sewerage systems are treated. The situation becomes even more alarming in view of the fact that regional experts on these issues consider the efficiency of these treatment systems to be very low.

There are various critical aspects of the regional sanitation problem that have not yet been resolved, including: insufficient political support from governments to the relevant

sectoral institutions, lack of health awareness among the population, the need to change the methods and criteria used to finance the wastewater treatment facilities, inadequate environmental policies, institutional shortcomings and the need for technological and engineering standards for waste elimination.

As for wastewater reuse, this process is expanding in the region, and is beneficial from both the technical and economic point of view. This reuse activity, however, poses risks for human health and the environment when appropriate treatment techniques are not used (stabilization lakes are the most widely available and most efficient systems, followed by the activated clay system). This has led governments to regulate the reuse of treated wastewaters from primary treatment plants by establishing quality limits for their reuse in agriculture.

The collection and treatment of wastewaters in the region is being dealt with via different forms of management which range from total responsibility on the part of state agencies, whether of a national or local character, to complete privatization; there are intermediate forms such as concessions of mixed public-private administration (SAMTAC/GWP/ECLAC 2000).

Water and sustainable development

The availability of drinking water and sanitation in the countries of the region directly affects the quality of life of the population; there is thus a need to define schemes for construction of the infrastructure needed to bring water to the poorest consumers. Approximately 75% of the poor who live in rural areas do not have access to clean water or to adequate sanitation services; as a result, more than three million people die each year from preventable water-transmitted diseases (SAMTAC/GWP/ECLAC 2000).

With regard to the efficiency of potable water services, the majority have problems of losses through leaks in the networks, in clandestine connections, and in the extravagance of users, which denies access to potable water to a large part of the population, reducing the optimization of investments in water production and distribution and thus generating higher costs and lower income in this area owing to the volume of water produced but not invoiced. Of the countries which have information on the continuity of their urban potable water supply systems, almost 50% report some degree of intermittency (PAHO/WHO 2001). In 15% of the countries, more than 95% of their systems have problems of intermittency. In almost all the countries of the region, there is inadequate maintenance, and hence the systems have many water leaks, which endangers the integrity of the distribution networks, the quality of potable water and the financial sustainability of the sector.

The percentage of the population provided with adequate water quality monitoring and control systems is very low in urban areas and insignificant in rural areas: there are effective systems for potable water quality monitoring for only 24% of the urban population (PAHO/WHO 2001). It is estimated that in the large cities of the region, 94% of potable water is effectively disinfected, but almost 18% of the samples violate national

standards with regard to their microbiological, chemical, physical and aesthetic properties (SAMTAC/GWP/ECLAC 2000). The gaps in coverage and the poor quality of the services is further exacerbated by increasing water pollution which is reaching alarming levels in many bodies of water, mainly owing to the general lack of wastewater treatment.

Concern to resolve the problem just mentioned has been increasing in recent years, and is reflected in a number of new projects for investment in treatment plants. Greater progress has been made with sanitation services than in the case of potable water; over the last decade, the region built infrastructure to provide sanitation for 105 million additional inhabitants.

The reforms of the water and sanitation sector have varied greatly among the countries of the region: in many the sector has already been restructured, while in others the process is underway. The reforms invariably involve a separation of the function of sectoral policy-making and planning, the function of regulation, inspection and control of enterprises, and the function of providing services and systems management. This differentiation represents a significant institutional advance. Experience in the region suggests that this division of functions is essential in those cases where the services are to be privatized, but is also highly to be recommended when public provision is to be maintained (ECLAC 2000).

One of the benefits of the institutional changes proposed was the possibility of obtaining investment resources from the private sector and a sustained increase both in tariffs and in the operational and commercial efficiency of the enterprises. The private agents, however, have not made significant levels of investment and when they have done so, it has been in the least risky areas of the business, ignoring the problem of exclusion of the poorest. Secondly, although progress has been made with tariff increases and with the dismantling of inefficient subsidy regimes, it has been limited by the economic problems of many of the countries which have worsened conditions of poverty and increased the percentage of the population requiring subsidies, while the delicate balance of the sector has deteriorated (PAHO 2001).

Governments, meanwhile, have reduced the level of public resources assigned to the provision of potable water and sanitation for the neediest population. The experience of the past ten years, however, shows that in order to overcome the huge lag in investments, significant contributions will be needed from public funds until the phase of basic infrastructure construction is completed and there is more substantial growth that can contribute to reducing poverty in the region. On the other hand, the region has not developed a sufficient number of enterprises to ensure competitiveness.

Hazardous waste and health

According to UNEP, the generation of solid waste with a strong presence of toxic substances has doubled in the region over the past 30 years (UNEP 2000a, p.33 and UNEP 2000b, p.51).

The countries of the region show marked differences with regard to institutional structures and the existence of legal regulations for hazardous waste. Most of the countries have ratified the Basel Convention, but have not developed specific legal frameworks at the country level. In the case of Brazil for example, specific programmes and initiatives are underway at the subnational level with their associated legislation.

In general it may be said that the organization of hazardous waste management in the countries of the region is disordered, and lacks basic information with regard to the generation or management of hazardous waste. In general, there have been no surveys of sites contaminated by this type of waste, except in some isolated cases.

This is a significant problem in all countries. The causes are related to the discharge of untreated domestic wastewaters and liquid industrial residues, which results in pollution with heavy metals, solvents and organic compounds. This situation is aggravated in rural areas by the use of agrochemicals and fertilizers (UNEP 2002).

The persistent organic compounds (POCs) contained in insecticides that have been used in agriculture in Latin America and the Caribbean in past decades are particularly relevant here, in view of their effects on human health and because they are very stable and resistant to photolytic, chemical and biological degradation.

Despite the fact that POCs are the most problematic chemical compounds to which natural systems are exposed, the industries have been allowed to continue producing and disseminating them all over the planet.

This lack of legal articulation between the countries of the region is a serious problem, as some countries prohibit all uses of these products, including export and import activities, whereas others do not; this fact leaves room for the illegal transport of these products. The legal frameworks should be readjusted so that Latin America and the Caribbean can comply with the regulations of the Stockholm Convention, which has not yet been ratified by any of the countries in the region.

All of the above reflects the fact that the countries of the region do not yet have a sufficient technical, institutional and legal framework to cope with this problem. It is essential to organize cooperation among the countries of the region, with input from international cooperation.

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