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Economic Commission for Latin America and the Caribbean

Regional Seminar on Policies for the Management of Urban and Industrial Wastes, organized by the Economic Commission for Latin America and the Caribbean (ECLAC) under the Project on Guidelines and Consultancy Services on Controlled Environmentally Sound Waste Management, carried out with the support from the Government of the Federal Republic of Germany.

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ANNOTATED PROVISIONAL AGENDA

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1. Development and environment

Policies for the management of urban and industrial wastes are considered within the general framework of the current perception of the relationship between development and environment, which is therefore a particularly important topic for study. The concept of sustainable development, which necessarily involves a link between changing production patterns, social equity and environment, helps to clarify the perspective in which the problem of the management of urban and industrial wastes should be discussed.

This topic should also be viewed within the context of those problems which give rise to questions as to whether there is opposition between the aims of environmental protection, on the one hand, and economic viability, on the other.

Policies relating to the management of urban and industrial wastes must also be studied within the legislative and institutional context of any country in which political action is taken to resolve the problem of wastes. For the same reasons, the problem of the agents responsible for pollution must also be discussed with a view to formulating policies which call upon those sectors which appear to be responsible to have recourse to various methods or instruments in order to solve the problem.

It is also important to know something about international experience in the enlisting of the two dimensions -development and environment- in seeking the objective known as "sustainable development". Since these are concepts which were formulated relatively recently and the objective at which they aim came under discussion only a short time ago, it is useful to know how far those discussions have progressed, especially when it comes to planning solutions for a problem which has a serious effect on the future development of countries and the quality of living of their inhabitants -i.e., the problem of urban and industrial wastes.

Along these same lines, attention should be called to the scientific and technological requisites for reaching solutions to environmental problems, access to these requisites being a mark of progress which is not sufficiently in evidence in the countries of the region. Moreover, as noted in the Tlatelolco Platform on

environment and development.¹ Access to the resources available to the developed countries for this purpose is not always easily available to developing countries, and this constitutes a barrier to the development of the most backward countries, which they should seek to remove.

All of this should make it possible to put the main topic of the seminar in better perspective and at the same time to lay a conceptual foundation on which to approach it.

2. Environmental impact

Various kinds of urban and industrial wastes -solid, liquid and airborne- have an environmental impact which must in each case be evaluated before proceeding to consider their causes and ways of solving them. The impact of wastes on the environment changes the actual conditions for normal human, animal and plant development, having a damaging effect on human health and on the survival of the plant and animal species needed to maintain it.

The sound management of urban and industrial wastes therefore involves an effort to minimize or offset changes effected by and wastes in the environment and in natural ecosystems for the purpose of providing the best conditions for preserving those natural resources on which human, animal and plant life depends.

The special characteristics of industrialization and urbanization in the region (the specific growth patterns followed by urban centres and by industry) must be studied in order to accurately determine the size and nature of the impact of wastes on the environment of areas of concern to us. Poverty, overexploitation of natural resources and lack of capital resources and technology, all of which are characteristic of the stage of development of the countries of the region, are associated with and increase environmental damage or make it difficult to find solutions to it. For this reason, attention should also be focused on those factors in any effort to find general and specific methods of solving the environmental problems of these countries. In order to assess the environmental impact of the rapid growth of urbanization and industrial development on our countries, it is necessary to determine those factors which characterize that growth and to view the phenomenon in association with other factors which are responsible for or result from those countries' under-development.

¹ The Tlatelolco Platform on Environment and Development is the name of the declaration which emanated from the Preparatory Meeting for the United Nations Conference on Environment and Development. This meeting, held in Mexico City in March 1991, was convened by ECLAC and attended by representatives of its member Governments.

The environmental impact of urban and industrial wastes on the health of the population of the region sometimes reaches alarming proportions. The recent case of the cholera epidemic in Latin America provides graphic evidence of the unhealthy relationship between the generation of damaging or toxic wastes and poverty. Inadequate drinking water supplies, sanitary infrastructure and facilities for treating waste water and low levels of education aggravate the environmental impact of wastes. The developed societies have complex and extensive sanitary and educational infrastructures at their disposal; this cushions the environmental impact associated with traditional forms of urban and industrial development. This is not the case of the Latin American and Caribbean region in general; although the health and educational infrastructures are in some ways similar to those in the developed countries, in general the cholera epidemic has shown that the health of the population of the third world is much more subject to environmental hazard from similar causes of disease, than the health of the inhabitants of developed countries. Of course it is true that because of the size and type of industry characteristic of developed countries (such as nuclear power stations), those countries are frequently of additional risk from accidents leading to environmental deterioration, which are as yet unknown in countries which are not so highly developed.

Another aspect of environmental impact which must be taken into consideration is related to the processes with backward links which certain industries engage in either because of the location of the inputs they require or because of their need for energy sources; in both these cases, the installation or operation of an industry may, indirectly and over and above its own productive processes, generate or induce deterioration in ecosystems. In order to evaluate the environmental impact of mining industries, for example, it is always necessary to consider the processes unleashed in the ecosystems where they obtain their inputs (oceans and seas, forests, soil, subsoil, etc.).

In evaluating the environmental impact of an industry, an assessment must also be made of the type of products it generates since they may be harmful, toxic or hazardous (the chemical and pharmaceutical industries, for example) as may the kind of packaging they require since their operation will result in the extensive proliferation of such packaging, eventually resulting in pollution which must be evaluated in each case.

In addition, the impact of urban and industrial development on the ecosystems of the region affects its biodiversity which is among the most outstanding in the world. The region should become increasingly aware of this danger and seek ways of combating it without inhibiting its necessary economic and social development. Focusing attention on the impact had by industrial development and accelerated urbanization on the various ecosystems in the region helps to put the objective of any policy aimed at sound management

of resources in the region in its proper perspective. This variable must be studied since an improved quality of living depends on the ecosystems in a region which has a tremendous supply of resources but is still insufficiently developed. Latin America urgently needs economic and social development but must try to minimize the risk which such development entails with respect to the conservation of its natural wealth.

3. Environmentally sound technologies

A vital contribution to fathoming the environmental problems of the region and to seeking solutions to them is provided by the presentation of information concerning alternative technologies, whether already available or yet to be developed, for dealing with the emission of toxic or harmful wastes from urban or industrial sources.

The generation of pollutants which accompanies modern development is a problem which can be tackled by science and technology; fortunately, we are not seized with an insoluble problem. On the contrary, societies have, in the majority of cases, already acquired the knowledge and techniques needed to deal with it. The developed countries were the first to move ahead in this regard and are continuing to discover new methods; however, technologies which are suitable for those countries are not always the best for the countries of the region. Sometimes it is difficult to adapt technologies to special situations, and these difficulties must be tackled. In order to do so, the less developed countries must in the first place have sufficient access to the technologies used in the developed countries for processing or for managing wastes; they must also develop their own scientific and technological capacity to recognize and accurately identify their own problems with pollution and to select, assimilate, adapt and reproduce technologies which are not immediately adaptable to their needs.

In the long run, it is more economical to attack the problem of wastes through processing, or appropriate technologies, than through systems for treating wastes since it is better to prevent or minimize the emission of pollutants at their source. This, however, is not always possible either because of the high cost of the equipment or of the technological/productive transformation required, or because, as in the case of the generation of urban wastes, there are still no procedures which prevent their production. In all these cases, which are usually the major cause of pollution in underdeveloped countries, technologies must be obtained for the sound management of the wastes emitted so as to offset or minimize their polluting effects on the environment.

In addition, in the post-Second World War period of industrialization, industries were created whose contaminating emissions were in general uncontrolled; today, in the midst of a crisis period of industrial reconversion and the adjustments that reconversion requires, it is difficult to impose new costs on industries already in operation.

In the region, progress continues to be made with regard to the understanding and assimilation of environmentally sound technologies as general ecological awareness increases, as national or local governments apply environmental policies and laws restricting the emission of pollutants and as entrepreneurs themselves incorporate the environmental dimension into their industrial projects. However, the awareness acquired is still insufficient and incomplete, not only in the case of the technological alternatives offered by the industry producing non-polluting equipment in the developed countries (which, since it is a relatively recent industry, is subject to constant innovation), but also in the case of all those technological options which are more appropriate to the type of resources available in the region and to the region's own environmental problems.

In other words, the development of processing technologies or technologies for the management of urban and industrial wastes is bound to present an increasing challenge to the countries of the region, causing its own scientific and technological capacities to be called upon. These technologies are supported by a profit-making industry, by engineering and by science. The countries of the region must, without falling victim to the temptation to adopt autarkic, utopian positions, therefore seek to link their environmental problems, which are emerging with increasing forcefulness, to their own scientific, technological and industrial capacities. In the long run, this linkage will provide the best way for them to confront their environmental problems.

4. Financing environmental protection programmes

Environmental protection programmes come at a cost, and sometimes a high cost. On the one hand, there are those programmes which call for consciousness-raising; the assimilation and management of environmental problems at national and local government level, and action by those governments to ensure the presence of the legislation, institutions and equipment needed to administer socially efficacious solutions to the environmental problems emerging in the region. Consideration must also be given to the costs of studying and identifying specific problems and of considering and proposing projects for solving them.

Another type of project is designed to solve problems relating to contamination, which frequently have tremendous ramifications in that they affect vast areas, large cities, land devoted to crop-raising or forestry or seas or rivers experiencing degradation due to high levels of contamination of various kinds. There are no easy solutions which can be applied in the short term; sometimes complex technologies are needed and vast quantities of human resources and materials must be mobilized.

Industrial development and accelerated urbanization, in addition to the poverty and the acute educational, health, housing, urban infrastructure and other problems characteristic of underdevelopment, are responsible for profound and extensive environmental deterioration in Latin America and the Caribbean. Within the general topic of the environment, the generation of urban and industrial wastes which produce ecological damage and call for appropriate treatment is a highly serious problem, which is sometimes difficult and costly to solve.

One of the criteria for financing solutions to problems of pollution is that those responsible for them should bear the costs. This principle cannot, however, always be applied; there are sectors which produce ecological damage without having the resources to pay for it, and, what is even worse, without being able to come up with alternatives which are less damaging to ecosystems because they are poor or lack resources (land, water, energy or other resources). The principle becomes more feasible in the case of urban or industrial pollution, where the social costs due to certain emissions can be calculated and it is possible to identify those responsible, regardless of whether or not society decides to impute these costs directly and solely to them. However, at the same time, it must be taken into account that the accurate detection and the monitoring of the emission of pollutants calls for complex systems of various kinds, whose operating costs are by no means negligible.

A solution to the financial problem therefore calls for an adequate cost/benefit assessment of the environmental impact of human activity. The direct and indirect methods used so far must be reviewed and updated, especially such methods as the "contingency valuation" and "hedonic prices" methods and methods for the social evaluation of projects which do not take this kind of problem sufficiently into account and are not easy to use.

Although the principle that the polluter pays has the right thrust, it cannot be put into operation without complicated information, monitoring, control and supervisory systems and therefore definitely requires adequate financing not only of the necessary investments but also of the operational costs of the systems used.

Over and beyond this principle, there are direct economic incentives which are offered to industries when they incorporate technologies which save on energy and materials and when they re-use wastes they themselves produce. Consideration must also be given to the existence of firms created to recycle urban and industrial wastes, which derive their profits from recycling. In addition, enterprises which produce decontaminating equipment constitute an increasingly important branch of industry, at least in the developed countries.

In spite of what has been said above, there are many environmental problems which cannot be tackled by having recourse to endogenous financing and require external financing, cooperation and assistance, especially from the developed countries. In many cases, environmental protection programmes must be managed, carried out and financed, at least in part, through the cooperation of international agencies and bodies. External sources of financing thus become an indispensable tool for meeting a challenge to the region which the region cannot tackle due to insufficient resources and unpreparedness. International cooperation agencies and bodies, in addition to financing environmental protection programmes, also provide a means by which access can be had to the necessary international experience, legislation and technology since the developed countries have already come up against similar problems and in many cases are far ahead in their treatment of them.

Finally, the financial problems involved in anti-pollution policies and programmes are complicated and far-reaching. The various sources of financing, both endogenous and exogenous, must be combined in an attempt to provide a more rapid solution to a many-faceted problem whose solution calls for large quantities of human and capital resources. The mechanisms to which recourse is had in this connection must include machinery for cooperation and support among the countries of the region since some of them have made more progress than others and are better prepared to advance appropriate solutions to the problems at hand.

The developed countries are asking the developing world to adopt effective policies against contamination and environmental deterioration. The matter has even begun to affect international trade relations, and for reasons of competitiveness, foreign firms are applying pressure to ensure that environmental protection requirements are the same throughout the world.

In many cases, environmental problems have global effects, and countries are increasingly concerned with what is happening in other countries. Latin America and the Caribbean are affected by severe ecological problems, but they lack the means needed to cope with them. For that reason they must combine their resources and capacities with those which can be provided by the industrialized countries in order to progress towards solutions of benefit to all countries. A variety of mechanisms may be available for this

purpose, and it will be necessary to choose those which are the most suitable.

5. Case studies

Case studies are tremendously useful both for identifying situations in which urban and industrial wastes are causing serious pollution and in evaluating the results being obtained from on-going waste management programmes. It is worth finding out what progress is being made towards effective solutions for these problems in the region, specifically through programmes being carried out in Argentina, Brazil, Chile, Costa Rica and Ecuador under the ECLAC/GTZ Project on Guidelines and Consultancy Services and Controlled Environmentally Sound Waste Management. Other important experiments have of course also been conducted in the region in connection with the achievements made and difficulties encountered in waste management.

Each case study will provide a more precise and detailed view of the original situations, the methods used to deal with them and the difficulties encountered and achievements made. Nowhere it may be said that the problems relating to contamination by urban or industrial wastes have been entirely solved. They are being tackled in a specific-focus approach and with insufficient quantities of human and material resources, and because of their complexity and depth, definitive results cannot be expected in the short term. The region is, however, acquiring a wealth of instructive experience, which deserves to be broadcast and evaluated with care.

There are points of comparison and similarities in the environmentally critical situations in which the various countries of Latin America and the Caribbean find themselves; there are also similarities in their institutional and legislative frameworks and their cultural, economic and political structures. All these points in common may help them to assimilate each other's experience and knowledge.

The various case studies may also be drawn to the attention of other countries of the region in order to motivate them and generate discussion concerning waste management and to promote horizontal cooperation among them in the future.