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GLOBAL REVIEW OF ECONOMIC INSTRUMENTS FOR SOLID WASTE MANAGEMENT IN LATIN AMERICA AND THE CARIBBEAN

EXECUTIVE SUMMARY

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Executive Summary

This is a summary of a report prepared for the II Meeting of the Regional Policy Dialogue on Environmental Management, to be held the 25th and 26th February 2003 in Washington D.C. The report contains an overview of the available international literature and information on the application of economic instruments in solid waste management. Examples from a wide range of high-income and developing countries are included in the report with numerous references, most of which are accessible through the internet citation provided.

The Case for Economic Instruments

Economic instruments are being individually applied on an ad hoc basis to the solid waste sector. No reference was found in the global literature indicating that any country had made a comprehensive effort to develop the full range of viable economic instruments in solid waste management. When viewed collectively, as done by the document summarized herein, these instruments show tremendous promise to improve solid waste management. Their application requires site-specific study in each country to determine whether the capacity exists for implementation and whether related prices would be affordable. Given that economic instruments incorporate the polluter-pays principle, product pricing and solid waste service costs will be increased. Therefore, national policies and international agreements are desired to minimize impacts on trade competitiveness and also to reduce interstate disposal traffic and clandestine dumping.

There are dozens of instruments available. Typically, they would complement existing regulatory requirements for the sector, and should not be seen as a replacement for a competent appropriate regulatory framework. As with regulations, they also involve administration, baseline information, public outreach, and performance monitoring. While each instrument addresses different sector needs, collectively they have the following objectives: reduced waste generation, increased recyclables content, reduced hazardous materials content, increased recyclability after use, stimulation of market demand for products that are more recyclable and result in reduced disposal impact on the environment, stimulation of private sector investment and participation in the solid waste sector, lessening of pollutant loadings associated with solid waste management, promotion of cost-effective service delivery, and generation of revenues to cover all internal and external costs for solid waste services.

Global Experience with Economic Instruments

No reference was found that comprehensively defined and categorized economic instruments for the solid waste sector. For purposes of the document summarized herein, three categories were used to describe the wide range of applicable economic instruments, namely: Revenue Generating Instruments, Revenue Providing Instruments, and Non-Revenue Instruments. The following paragraphs describe types of instruments in these categories. For information on actual experiences with these instruments, the reader is referred to the document.

Revenue Generating Instruments

Revenue generating instruments develop income for governments from consumers, producers and service providers. Revenue generating instruments, which include a wide range of solid waste

charges and taxes, address the following objectives. They raise money to cover solid waste service costs; paying consumers tend to pressure solid waste service entities to become more accountable and transparency in their budgeting systems; solid waste departments with competent cash flow are able to attract the private sector to invest in improved solid waste service delivery. When the revenue generating instruments are tied to the quantity or composition of waste discharged, they might have the added benefit of reducing waste generation and/or increasing recycling. However, such quantity-based instruments are significantly more complex and costly to administer than flat-rate revenue generating instruments.

Charges. Charges may be collected through the property tax, electricity bill or water bill, or individually collected from each waste generator. Typically, waste generation is a function of consumption, which is a function of income. Thus, waste generators with larger properties or higher water or electricity usage would be automatically charged more.

When the charge is administered door-to-door from each waste generator, there is a choice between flat rates (based on property size, property value, energy use, or water use) and variable rates (based on waste weight or volume). While waste weight is the key determinant of collection and disposal cost, waste volume is easiest to measure for billing purposes. Therefore, most variable rates are based on number and size of containers put out for waste collection service. In theory, charges based on quantity are meant to motivate consumers and producers to reduce their waste loads; however, practice indicates that the major waste generators (those with higher income) may not be price sensitive because of the low portion of income allocated to cover costs.

Taxes. Taxes imposed on virgin materials, non-renewable fuels, and hazardous constituents may be used to influence producers to develop products that are easier to recycle, have a higher recycled content and cause fewer disposal problems. Additionally, taxes on wastes discharged to landfill could encourage use of other technologies, such as composting. Such taxes need to be set high enough that they influence consumer choices. In Europe, various green taxes are generating significant revenue, i.e., enough to generate surpluses for application to social security and compensation measures, as well as environmental improvement.

Subsidy Reductions. Where virgin material use is subsidized, i.e., where a producer's costs to obtain and use that virgin material does not take environmental externalities into consideration, there is limited incentive to use recycled materials as feedstock. Such subsidies may be in the form of direct tax preferences, preferential access to investment capital, reduced rail transport costs for virgin materials or allowing low-cost forest or mineral extraction from government lands. Reduction or elimination of such subsidies could encourage producers to use recycled materials and also to consider product take-back after use.

Solid waste services are typically conducted by government departments that receive considerable subsidies. One way to facilitate private sector investment in solid waste services is to eliminate the subsidies received by the government service agencies.

Revenue Providing Instruments

Revenue providing instruments enable producers and service providers to obtain income indirectly from governments. Revenue providing instruments, which include charge reductions, fiscal incentives, development rights, and funds, address the following objectives. They motivate the producers to implement product changes that reduce waste and increase recycling; they encourage the private sector to invest in improved solid waste service delivery; and they establish funds to generally support goals of recycling, reduced virgin resource use, and remediation of contaminated disposal lands.

Charge or tax reductions. Charges or taxes related to waste generation or receipt of solid waste services may be reduced based on proof of increased recycled content or increased recycling.

Fiscal incentives. Tax credits, accelerated depreciation, tax-exempt debt, subsidized credit lines, and customs exemptions have been used widely to encourage investment in new techniques of waste treatment, including waste-to-energy facilities, and are also applicable to attracting private sector investment in collection and transfer equipment.

Development rights. To encourage private sector investment in new transfer, treatment and disposal facilities, long-term development rights to the lands needed for the facility are being provided. This saves on the cost of land acquisition, and also may provide enough land for other business activities to be conducted in addition to the solid waste facility.

Funds. Funds are established to support solid waste improvements, including remediation of contaminated disposal sites. While the monies are initially provided by government, repayment of the funds is typically negotiated as part of their use. Some funds are given seed money by government and are then supported by donations from private companies, and others are supported by a specific type of green tax.

Non-Revenue Instruments

Economic instruments are traditionally viewed as either generating or providing revenue. However, many of the most important instruments for the solid waste sector do not fall within these categories. Non-revenue instruments are particularly important in motivating consumers and producers to recycle. They also provide powerful motivators for the private sector to invest in solid waste service delivery and provide the tools that most influence their performance. Non-revenue instruments include trade-off arrangements, deposit-refund systems, take-back systems, product and production change incentives, liability law, performance disclosure, and procurement policies.

Trade-off arrangements. Pollution trading has become an important way of reducing air emissions, allowing air emission reductions in one part of an air-bubble to be traded for air pollution permission in another part of the same bubble. In some circumstances, for emissions of global importance, air pollution trading is being done internationally. The solid waste sector has begun to make air emission savings in its truck fleets and disposal facilities to trade with polluters in other sectors, particularly the energy production sector. Another innovative example of trade-off arrangement is the possibility of gaining surplus and tradable certificates for reprocessing of packaging or waste materials.

Deposit-refund systems. Some types of products have great value for recycling after use and can be conveniently returned through the retail network, including beverage containers, tires, and car batteries. For these products, a deposit is provided by the consumer at the time of purchase and refunded at the time of product return. It requires cooperation by the full retail network selling that specific product, since the consumer is not required to go to the specific retail location where he/she purchased the product initially.

Take-back systems. Initially producer take-back systems focused on recovery of packaging, but now many products are being taken back by producers. Electronics, plastics, single-use cameras, laser print cartridges, paints, solvents, lubricants, and pesticides are examples of products that are returned after use. These systems also can be part of a command-and-control approach, but they assume more of the character of an economic instrument when linked to other instruments like public disclosure and procurement policies. Product and production change incentives. Waste

minimization programs encourage producers to reduce ultimate disposal quantities (e.g., by lightweighting or materials replacement) and increase recycling. Some change is brought about purely by dialogue and information provision, some through recognition for changes made (i.e., a form of public disclosure).

Performance disclosure. Environmental report cards and polluter blacklists consider recycling and disposal performance in their criteria for ranking companies. A number of report cards are published on the internet and are considered by consumers in their purchasing decisions, thus motivating producers to make changes in production and waste management practices.

Liability law. Revision of liability laws can provide a basis for claiming compensation for environmental degradation, i.e., damage to nature. This allows liability coverage even where property or personal damage claim is not involved. Solid waste service providers (e.g., treatment and disposal contractors) can be obliged to protect against damage through trust funds, surety bonds, insurance policies, letters of credit, enterprise funds, collateral securities, and other types of guarantees. These instruments motivate private parties to fully assess potential environmental risk and provide adequate coverage for that risk.

Procurement policies. Procurement policies enable governments to give procurement preference for products that have a high recycled content, are recyclable, or generate less waste. Procurement policies also create improved conditions for private sector investors to participate in solid waste service delivery.

Criteria for Choosing Instruments

There are dozens of potential solid waste instruments that each Latin American country could implement. The global literature does not provide adequate comparative information to conclude whether certain economic instruments are better than others. The data is not available to assess the extent to which any instrument would reduce waste, increase recycling, reduce toxics, generate revenues, etc. Choice depends on local priorities, preferences, and abilities. Each city and country in Latin America is unique. Local capacity, public interest, and ability to pay are just a few of the differences between countries that influence choices. The following evaluation criteria are recommended to be considered:

- Environmental effectiveness – i.e., does the instrument lead to the desired environmental improvements, such as reduction in waste generation, increased waste recycling, reduced emissions from transport and disposal;
- Economic cost-effectiveness – i.e., does the instrument create incentives for investment and innovation toward reduction of pollution control costs;
- Administrative cost-effectiveness – i.e., does the instrument require affordable and available levels of skill and effort to implement and monitor;
- Revenue usefulness – i.e., are revenues generated able to be applied to address the environmental objectives of the instrument and adequate to create measurable improvement;
- Ease of implementation and replicability – i.e., are the relative costs and benefits relatively easy to assess and the legal requirements for introducing the new instrument reasonable;
- Acceptance – i.e., does the general public and the affected industries accept the instrument as a viable means of cost-effectively achieving environmental improvement without adversely affecting competitiveness, employment, income distribution, and trade;

- Distributional effects – i.e., is there distributional disparity or inequitability in the application or impact of the instrument, particularly regarding effects on lower income households, small businesses, and disadvantaged parties;
- Short-term results – i.e., does the instrument have the potential to result in sufficient short-term improvement to motivate political administrators to undertake commitment to the costs associated with the instrument under their political term
- Economic development enhancement – i.e., does the instrument provide an environment that maintains trade competitiveness and encourages industrial development and employment generation.
- Waste type applicability -- i.e., does the instrument address a wide range of waste types and have significant impact on overall urban waste quantities, or does the instrument address only a limited number of unique and important waste types.

Recommendations

Solid waste management is a local responsibility. However, local implementation of economic instruments needs the support of national policy. Firstly, local governments do not have the capacity to assess the options and determine which instruments would be most cost-effective for their use. Also, local governments are politically sensitive about any increase in charges or taxes to their constituency, unless they can refer to some national directive. Finally, as local governments often rely on central government budgetary support, they may not be free to provide fiscal incentives or modify procurement policies. Thus, the first recommendation is that each Latin American country create a national commission tasked to study economic instruments for the solid waste sector and develop national policies and implementation directives to local governments. The commission will need to consider whatever financial support local governments might need to implement the instruments, including monies for baseline studies and performance monitoring. Also, the commission shall need to formally recognize that budgetary allocations, in the form of revenue sharing for local governments, will shift as private sector involvement in service delivery requires more budget assigned to recurrent expenditures, while less is needed in capital expenditure. Enabling legislation to empower local governments is recommended.

In choosing between instruments for the solid waste sector, it is recommended that Latin American countries consider the following guiding principles:

- Economic instruments that are complementary to existing command-and-control approaches should be given priority over those that might confuse or conflict with existing regulatory controls.
- New instruments should be gradually introduced in steps that allow their impacts to be assessed before full-scale implementation proceeds.
- Instruments should be in tune with broader economic development objectives in terms of use of labor and conservation of energy and capital.
- Consideration should be given to using revenues from instruments for specific waste management investments, improvement in waste management services, or waste-related environmental remediation.

- Instruments that focus on long-term behavior modification need to be implemented, even though their results might not be immediately evident within current political administrations.
- Instruments that target existing environmental problems or service gaps that lead to significant pollution loadings and environmental consequences should be given priority.

The following instruments are recommended to be given priority for Latin America:

- Revenue-generating instruments that are user charges attached to property taxes, electricity bills or water bills would have the most positive near-term impact on the capacity of the solid waste management sector. Consumers would perceive that they pay something and therefore have a right to demand good services. This in turn would make the service delivery entities more accountable. Further, it would provide a favorable climate for private sector investment and participation in service delivery. Variable rate charges are not recommended for Latin America at this time because of the administrative costs and potential adverse impact of causing illegal dumping.
- Revenue-generating instruments that impose taxes on products that are difficult to dispose or recycle would influence consumer choices and related production decisions. Revenues can be earmarked to support improved disposal conditions and increase recycling.
- Revenue-providing instruments, such as tax credits, low-interest credit lines, accelerated depreciation and relief from customs duties, can provide financial incentives for the private sector to invest in production changes that minimize hazardous substances, increase recyclability, and generate less wastes. Such instruments could encourage the private sector to invest and participate in solid waste service delivery, including resource recovery.
- Non-revenue instruments that address government procurement preferences would dramatically augment market demand for products that are readily recyclable or have significant recycled content.
- Non-revenue instruments that address procurement policies for waste services are particularly important for stimulating private sector investment and participation in solid waste services.
- Non-revenue instruments that strengthen liability law and create strong disincentives to damage the environment or adversely affect public health are recommended. Ideally, in time, an international liability policy would be developed for Latin America. Also, all contractual language for guarantees and performance liability needs to be strengthened for private sector participation.
- Non-revenue instruments that involve deposit-refunds, product take-back, and product stewardship address only certain categories of wastes, such as returnable beverage containers, tires, electronics, and appliances. Nevertheless, any effort to encourage industry to lessen the disposal burden and fully account for waste management in its product pricing is desirable.