



Effluent discharge fees provide a powerful incentive to reduce wastewater discharges - if only wastewater management laws in Mexico were clear, consistent and enforced.

Policy failures prevent water quality progress in Mexico

A comprehensive national regulatory framework for wastewater discharges must be developed to prevent and control water pollution in Mexico.

Currently, several legal requirements regulate wastewater discharges to water bodies; however different groups over time developed these regulations without appropriate consideration of existing laws and regulations. Consequently, the legal regime is inconsistent — regulations often conflict with each other, institutional responsibilities for ensuring compliance are highly diffused, and overall objectives are often unclear.

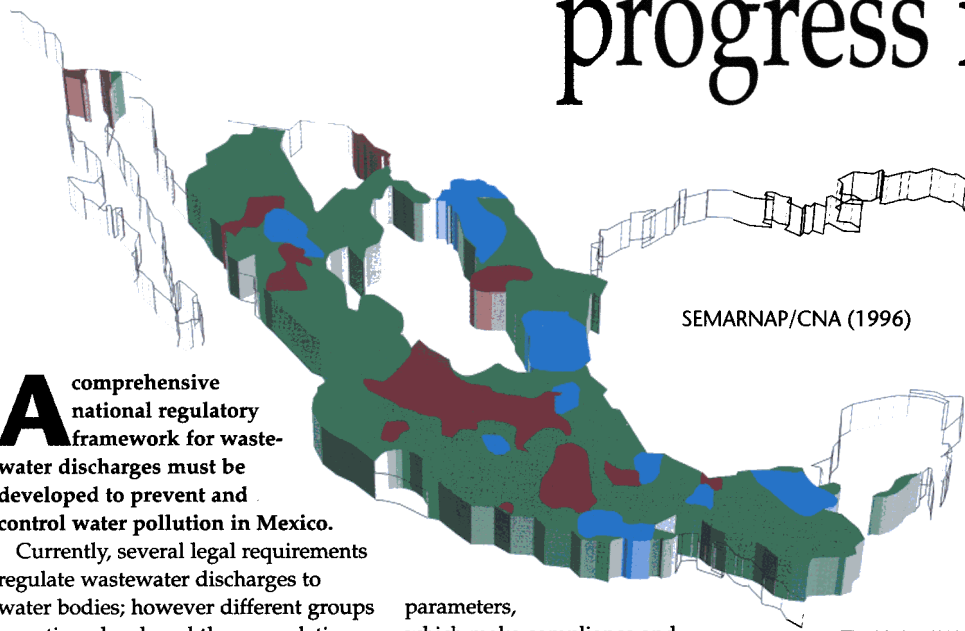
In Mexico, the major industrial regions are highly populated and account for the highest percentage of drinking water and sewage facilities. Nationwide, only 13% of all industrial wastewaters are treated, and less than one-third of industries comply with legislation that regulates discharge quality. In 1998, industries discharged 159.48 m³/s of wastewaters, which, together with the 170 m³/s of municipal wastewaters, amounted to 329.48 m³/s of wastewater. The same year, 1,354 industrial treatment plants with a design capacity of 29,322 m³/s were operating, but only treated 21,951 m³/s of wastewater. The problem is not only the volume that is discharged untreated, but also the quality of the discharged effluent. Wastewater management legislation in Mexico must be amended to address the needs and realities of the country.

Regarding laws and regulations for wastewater management, a major problem is that the several laws on this issue consider different parameters to determine wastewater quality, and/or different concentrations of these

parameters, which make compliance and enforcement difficult. Three national laws — General Law on Environmental Protection (LGEEPA), Law of National Waters (LAN) and Federal Law of Rights on Water Issues — provide the regulatory, economic and participatory framework for granting discharge permits. These are regulated by the polluter pay principle, on which tariffs depend upon pollution loads and assimilative capacities of the receiving bodies.

The General Law on Environmental Protection (LGEEPA) gives the Ministry of the Environment and Natural Resources (SEMARNAT), in coordination with the Ministry of Health, the responsibility to develop the Mexican Official Norms NOMs. The Law on National Waters (LAN) and its regulation define wastewater quality before effluent is discharged into water bodies. It also stipulates that it is necessary to have a permit in order to discharge wastewaters, with the objective to verify the implementation of regulations.

According to the LAN, the National Water Commission of Mexico (CNA) is



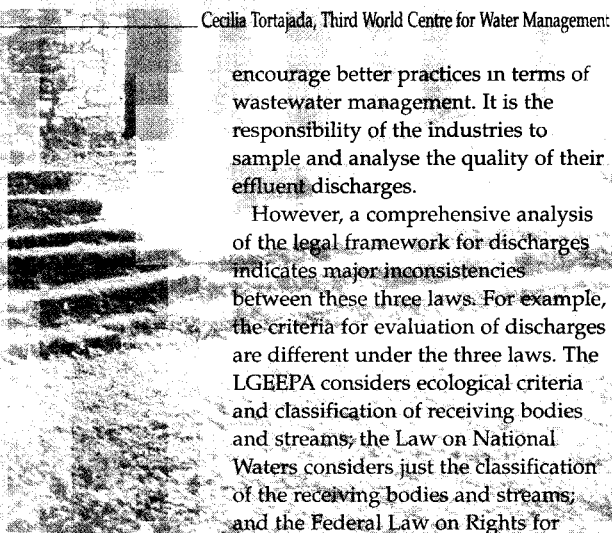
ICA* responsible for the water quality management of the country through its classification of water bodies. CNA should define what should be the quality of the discharges from the industries and the municipalities; which discharge parameters should be monitored; what are the assimilative capacities of the receiving bodies and what are the quantities of pollutants that can be discharged. Specific goals need to be established for each water body of the country.

- High > 70
- Medium 50 - 70
- Low < 50
- No data

*Water Quality Index

The National Water Commission of Mexico (CNA) classifies water bodies according to quality in order to define the required quality of industrial and municipal discharges.

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encourage better practices in terms of wastewater management. It is the responsibility of the industries to sample and analyse the quality of their effluent discharges.

However, a comprehensive analysis of the legal framework for discharges indicates major inconsistencies between these three laws. For example, the criteria for evaluation of discharges are different under the three laws. The LGEEPA considers ecological criteria and classification of receiving bodies and streams; the Law on National Waters considers just the classification of the receiving bodies and streams; and the Federal Law on Rights for

Water Issues established unilaterally a list of receiving bodies and streams with no technical considerations.

According to previous legislation, the parameters to evaluate discharges would be the CPDs — specific conditions for discharges of wastewaters, which considered industry-specific effluents and emission limits. Government authorities would determine the CPDs based on water quality studies through which the waters of the country would be classified depending on their uses and assimilation capacities. The deadline to comply with the CPDs would not be less than one year and no more than three years. CPDs could be modified after five years if changing demographic or ecological conditions so warranted, or before they represented a risk to public health.

viduals that own a title to use water.

While the LGEEPA and the Law on National Waters recognise the NOMs and CPDs as regulatory instruments, the Federal Law of Rights of Water Issues recognises only the CPDs as the sole instrument to control discharges. It does not even consider the existence of the NOMs.

The criteria to establish fines also varies in the different legislation. The LGEEPA establishes sanctions from 20 to 20,000 days of the average minimum wage of a worker; to close partially or totally, temporarily or permanently, pollution sources; administrative arrest for up to 36 hours and decommissioning of pollution sources. The government can shut down certain activities that do not comply with the legislation when natural resources, ecosystems or public health risk severe

the various laws do not contradict each other. Many industries are taking advantage of the confusing legal situation. Some industries do not even bother to treat their wastewater because their raw waters are discharged within what is established by the NOMs.

Most polluters do not pay even though discharge permits are regulated by the polluter pay principle. Many major industries often find “political” alternatives to avoid paying non-compliance fines, and some others simply prefer to pay without modifying their major production processes to improve effluent quality or constructing new treatment plants.

Politicians pose another major problem. To attract votes, some politicians misguidedly push for very low or even no charges for supplying drinking water and maintaining and operating sewage systems. For example, a federal decree authorised in December 2001 forgave all previous debts due to wastewater discharges resulting from violations to the legislation, which benefited water utilities, municipal and state governments, and any industry involved in wastewater management. The decree recognises that, even though in 1996 a NOM established a framework for wastewater management in terms of actions and deadlines, no goals were achieved. Some claim the main reason is financial ability; however lack of planning and appropriate management should more fully explain this unfortunate failure in wastewater management policy.

Comprehensive and objective analyses of the existing legal, economic and institutional frameworks are essential to prevent and control water pollution in Mexico. Effluent discharge fees would provide a powerful incentive to reduce discharges if they were promptly and efficiently collected as stipulated under existing legislation, and if other allowable legal sanctions were implemented. An integral analysis of the legal, institutional and economic framework is urgently needed in order to transform Mexico’s confusing, conflictive and ineffective wastewater management laws into a clear, mutually consistent and implementable policy.

Author’s note

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Single standards, such as the NOMs, were further approved for all industrial and municipal wastewater discharges to simplify the processes by emphasising economic incentives. For example, effluent charges could be reduced by six to 44% for industries with treatment plants. Industries that develop programs to improve wastewater discharge quality and comply in a timely manner, would also be exempted from any payment. Water users that discharge effluent exceeding five times any of the parameters must develop a wastewater treatment programme within a certain time. Users include companies or indi-

CNA reports on wastewater generated, collected and treated in Mexico.

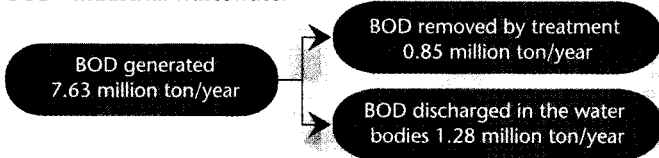
deterioration from pollution.

The Law on National Waters establishes sanctions from 500 to 10,000 days of salary; to close partially or totally, temporarily or permanently the processes that generate the discharge; suspend activities and discharges; and revoke the permit to discharge, which means stopping the discharges. Activities or discharges can be stopped when discharges create acute problems for public health and the environment.

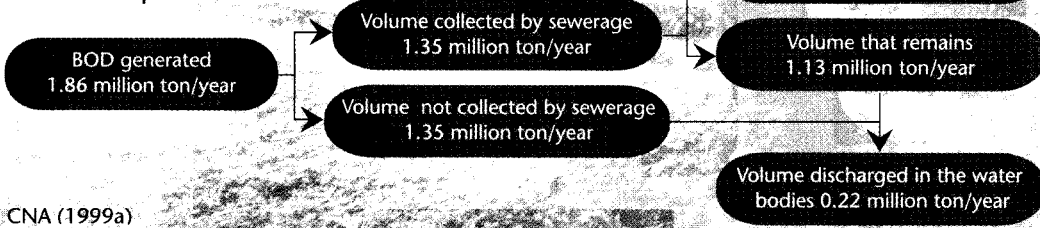
The Federal Law of Rights for Water Issues only mentions payment for effluent discharge rights. No law has priority over others in terms of implementation, so it is unclear to users which parameters should be considered — CPDs or NOMs. A hierarchy must be established among the different laws to effectively implement the different regulatory instruments.

It should also be ensured that

BOD - Industrial wastewater



BOD - Municipal wastewater



CNA (1999a)