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PA Consulting
Group

**Lessons Learned from the Urban EMS
Initiative (Agadir, Morocco and Guatemala
City, Guatemala)**

January 16, 2001

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Prepared for: **G/ENV/EET**

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Version: 1.0

1. INTRODUCTION

Under USAID's Urban Environmental Management Systems task order, PA Consulting Group (formerly Hagler Bailly Services) undertook two pilot activities in different countries: in Greater Agadir, Morocco and Guatemala City, Guatemala.

The objective of the first pilot project, in Greater Agadir, Morocco, was to demonstrate the advantages of applying the integrated approach of an urban EMS to industrial water and wastewater management. The EMS approach was expected to provide a programmatic framework that would allow the urban community to lower industrial water consumption and improve the quality of the industrial effluents discharged into the wastewater collection system.

In Guatemala City, the second pilot project, PA helped the Municipality to apply the EMS methodology, as an organizing principle, to the development of an environmental management program to reduce and mitigate industrial impacts within its jurisdiction in all environmental media. The overall program is based on the integration of command-and-control (CAC) regulatory interventions and market-based incentives (MBIs) to achieve the objectives of stabilizing and then reducing industrial air, water, and waste discharges in the city. Phase I, receiving greater attention in the report, consisted of a plan to manage a combined CAC program (for existing industry) and EIA program (for new industry), together with an action plan to achieve implementation. Phase II consisted of a plan to integrate MBIs into the Phase I program at a future time.

In line with the principal elements of an urban EMS design, the consultants worked with local stakeholders to go through the following sequence of steps under both pilot projects:

- Reaching stakeholder commitment to the program (environmental policy)
- Identification of environmental impacts
- Definition of programmatic objectives
- Design of an environmental management program

Both pilot activities covered only the EMS design phase and did not cover EMS implementation.

The following sections describe the main experiences and lessons learned from the two projects, starting with activity selection and covering the main stages of the EMS development process.

2. ACTIVITY SELECTION AND COUNTERPART IDENTIFICATION

Local Initiative. One of the key lessons learned from the Urban EMS activities is the importance of local initiative in the development of an EMS program. The genuine interest on the part of the municipality, for example, in having a USAID-funded EMS project significantly increased the level of stakeholder cooperation and the chances for its successful implementation. Local initiative is critical in two respects: it makes the definition of the project's scope easier and more relevant to local needs, and produces a local counterpart that is ready, if not eager, to take the lead in advancing the project.

In Morocco, the EMS activity was launched at the initiative of USAID's Global Bureau and the RUDO Office in Morocco, and its location (Agadir) and scope (water and wastewater management) were picked based on the Mission's strategic priorities in the Souss-Massa region (which has its administrative center in Agadir). The project counterpart, the metropolitan water and wastewater utility RAMSA, was identified during USAID's scoping trip to the region and was reluctant throughout the project to assume leadership in the stakeholder process. As a result, RAMSA is considered unlikely to pursue the EMS activity after completion of the USAID-supported preliminary design phase.

On the other hand, in Guatemala, the initiative came from the Planning Department of the Municipality of Guatemala City, whose representative had attended a USAID-sponsored presentation on urban environmental management systems in Washington, D.C. The Planning Department worked very closely with the USAID Mission in Guatemala City (in particular the RUDO/LAC office stationed there) and, later, with the consultants to define the project based on its needs. The Municipality's leadership helped not only focus the activity on the industrial sector but also adjust the EMS design over the course of the project to reflect Guatemala City's political and institutional realities.

Recommendation:

In its future efforts to promote urban environmental management systems, it is recommended that USAID have a strong indication of real interest on the ground to both design and implement an EMS before committing project resources.

Programmatic Scope. In terms of the programmatic scope, there are several ways to interpret the EMS approach to environmental management in a local government jurisdiction. These two USAID projects demonstrate that the scale of EMS application in a municipality can vary, depending on the objective of the program. The industrial environmental management program for Guatemala City was an example of a comprehensive multi-media approach to address environmental degradation caused by either one or (in this case) a number of industrial sectors. The Greater Agadir water and wastewater management program focused on a single medium (water) that was more problematic than others.

Another alternative might have been to seek improvement in the municipality's internal environmental management processes (in Guatemala City) or at the wastewater utility (in Agadir) using a traditional ISO-type organizational EMS, i.e., one that emphasizes procedural management tools. Guatemala City, in fact, rejected that approach as not

addressing its priority problem, but hoped to revisit it as the municipality becomes more comfortable with the EMS as a management tools.

Recommendation:

Whatever the scope of the EMS, the preference should be expressed by the key local counterpart, based on the city's environmental priorities. In general, we have found that the most effective way to demonstrate the benefits of an EMS is to limit the scope (medium or sector) with a possibility for future expansion of the approach across the entire spectrum of urban environmental management.

Local Authority for EMS Implementation. In the activity selection and counterpart identification for an urban EMS program, it is important to consider whether the counterpart agency has sufficient environmental authority to define and implement an EMS. This is particularly important when the EMS involves regulatory interventions that affect a broad range of stakeholders.

For example, in Morocco, RAMSA had the necessary legal authority over the management of water supply and wastewater treatment systems, making it an appropriate partner for the EMS (notwithstanding the fact that RAMSA was reluctant to champion the program).

In Guatemala City, on the other hand, the Municipality lacks environmental jurisdiction over industry (which resides at the national level), creating a gap between the city's desire to mitigate industry's environmental impacts and its ability to employ specific policy instruments that could affect industry's behavior. The lack of regulatory certainty and political will at the national level effectively disarms the municipality and puts it at a disadvantage. Because of the ubiquitous nature of the industrial threat of harm, the municipality had little option but to consider its inherent police and zoning powers to protect its citizens from that harm. The municipality was encouraged along these lines of self-assertion because the drafts of environmental legislation under consideration by the central government proposed to empower the country's municipalities to play a leading environmental management role. Notwithstanding its weakness in legal authority over industry, the Municipality was a good choice to be a key counterpart in Guatemala City, especially given its enthusiasm about the project and its emboldened political will.

Furthermore, the Municipality had the potential for strong environmental leverage over industry through its own business licensing authority. As events played out in Guatemala, the initial programmatically ambitious EMS scope was later constrained by stakeholder amendment (led by the Municipality as the counterpart agency) to regulatory responsibilities to be exercised in connection with the administration of CAC and EIA. These responsibilities were to be shared with CONAMA, the national environmental agency, and the Ministry of Health. This left the implementation of the more complex economic incentives to a later phase. Even this more limited version of the EMS still left the Municipality without the appropriate legal authority. However, the Municipality proposed to cure that deficiency, according to the Mayor, by the adoption of empowering ordinances in the implementation phase.

Recommendation:

Carefully assess the will and legal authority of the counterpart to act in furtherance of the objectives of the EMS. The strength of a municipality's resolve to further empower itself will differ among local governments.



3. EMS DEVELOPMENT PROCESS

This section will review the lessons learned from each phase of EMS design under the two activities and outline their implication for prospective EMS implementation. The fact that these lessons are derived from two pilots with distinctly different scopes makes them particularly valuable for future USAID EMS programs.

Policy Commitment. In the context of urban environmental management, this element represents the recognition by all stakeholders of priority environmental problems and their formal commitment to work together to address them. Achieving consensus on a set of common policy priorities requires a high-level dialogue process that involves both governmental and non-governmental stakeholders.

Getting a policy commitment from key stakeholders requires a fair amount of advocacy work on the part of consultants, including the explanation of the EMS concept and the effort to achieve stakeholder buy-in to the project scope. In Morocco, the project started with the establishment of the Environmental Management Committee for Greater Agadir that included all relevant local, regional, and national government agencies, as well as representatives from the industrial and tourism sectors. The creation of the Committee signified the stakeholders' realization of the need to address local water and wastewater problems through interagency collaboration, but the Committee itself was organizationally weak and rarely went beyond endorsing general concepts.

In Guatemala, multiple stakeholder meetings held by the consultant team at the outset of the project gave an indication of general support for the application of the EMS approach to industrial environmental management in the city. The Mayor of Guatemala City provided a steady level of policy commitment, which, however, was always tempered by political realities and his ambition to run for the national presidency in the future. As the project stakeholders were about to formally select specific strategies to implement the EMS approach, industry became more conservative regarding its commitment to comprehensive solutions, even though its leadership was not privy to complete information. The Mayor, on the other hand, while unwilling to impose a pollution charge program against the will of industry, grew more comfortable with his own commitment and authorized a bold CAC/EIA program design. Thus, it is clear that diverging stakeholder perceptions of their interests in an EMS may well result in a divergent level of commitment that, given more time, would benefit from a further vetting process.

Recommendation:

Essentially, it is unreasonable to expect the stakeholders to commit to an approach whose implications they do not fully comprehend and before program objectives are set and a preliminary design is completed. Therefore, the policy commitment stage of EMS development should be interpreted as *the beginning* of a stakeholder dialogue that would eventually lead to a more formal commitment that might be expressed, for example, in a Memorandum of Agreement between the key stakeholders. Under this scenario, an MOA signed at *the end* of the EMS design phase would more effectively signal commitment to the implementation of the EMS program.

Identification of Environmental Impacts. Another important part of EMS design is to identify and analyze in detail key factors (environmental aspects) contributing to the

existing problem, assess the extent of their impact on the environment, and come up with feasible options to address them. This analysis forms a rationale for programmatic objectives and a baseline for future actions.

The identification of environmental impacts consists of the analysis of background information on ambient environmental conditions and pollution sources, as well as gaps in the legal and institutional framework in place to address the problems. The purpose of this analysis is to define programmatic priorities that constitute the foundation for setting objectives and targets.

The biggest problem facing consultants working on EMS in a developing country is the lack and inconsistency of information for such analysis. In Agadir, the absence of information on the industry's impact on the city's water and wastewater management problems necessitated an effluent characterization study that was conducted for one fish canning plant and one hotel. (Fish processing and tourism heavily dominate Greater Agadir's economy.) Although a much more representative and comprehensive study is required to fully assess the environmental impacts of Greater Agadir's industry, the results of the limited study were sufficient to demonstrate to the local stakeholders which environmental impacts were priorities for the EMS program.

In Guatemala City, baseline information and its analysis as well as industrial discharge information were not readily available (even as we suspected that the Chamber of Industries knew more about itself and its collective impact on the environment than it was willing to share). Still, the Municipality knew that its rivers and streams, and a number of its groundwater sources for drinking water were polluted from industrial discharges. There was simply no hard cause-effect data to prove it.

In order to better understand industrial impacts, the consultant and the Municipality agreed that they would hire local technical experts to develop an industrial profile of the city from which, at the very least, some generalizations could be drawn about certain sectoral contributions to the degraded environment of the metropolitan area. While this was helpful, a lack of resources prevented a much more focused study of industrial discharges, their sources, relative toxicity, and contribution to the contamination of the rivers and streams. That kind of data would not only have made the establishment of municipal objectives and targets a much more precise exercise than it was, but it also would have helped to clarify the later planning function of the EMS.

* On the other hand, industry, unwilling to appear defensive, took the offensive by arguing that it was a minority contributor to the contaminated environment and that the Municipality itself had failed to manage its own responsibilities for treating municipal wastewater, and that its failure impacted surface waters (especially) with greater severity than did any failure that might have been attributable to industry.

Recommendation:

Because the lack of data is a major problem in urban EMS design in developing countries, it is particularly important to make the creation of a monitoring and data management system a pivotal component of the EMS. At the same time, the gaps in knowledge of environmental impacts should not be an insurmountable obstacle in EMS design, as long as anecdotal information allows stakeholders to make a judgment about their environmental priorities and define EMS objectives and targets. The lack of data becomes even more problematic for the design of programmatic responses to the objectives and targets. Optimally, therefore, USAID should allocate sufficient funds for data acquisition and data management. If this is not possible, sufficient funds to characterize the baseline should be provided (similar to the case of Guatemala City).

4. THE PLANNING PROCESS

1. Definition of EMS Objectives. EMS objectives are, overall, strategic goals addressing priority environmental problems. Each objective is implemented by one or more targets. Targets are met through specific action steps that are measurable and have a defined timeframe. It is the logic of the ISO system that environmental objectives, to which the programmatic design of the EMS system responds, are formulated by the stakeholders themselves. Tracking design elements and action steps with objectives and targets makes it easier to monitor and improve the EMS implementation process.

For an urban EMS, which implies sprawl, complexity, and multiple environmental impacts, near-term objectives are more workable and realistic when they deal with general promotional improvement (e.g., "Promote water conservation and effluent quality improvement in the industrial and hotel sectors") where the process of "continual improvement" (the EMS measure of success) may be set in motion by steadily linking smaller (targeted) achievements. Then, longer-term objectives may later be linked to more difficult environmental *quality* objectives, e.g., perhaps ambient standards, when discharge data, baseline information, and monitoring systems can be integrated into an operating environmental management program. In the Morocco project, the Environmental Management Committee came up with a list of four near-term objectives that were later broken down into manageable targets under the EMS process. There, the objectives exercise, which was converted directly into an action plan whose elements became the targets, became central to the development of the EMS.

However, in Guatemala City the dynamics were quite different. There, the objectives and targets followed the near-and-long term model above but were generated through a stakeholder consensus that was based on a set of increasingly stringent targeted standards, over the course of nine years, that had already been negotiated between CONAMA and the Chamber of Industries. It was a difficult negotiation, and the stakeholders agreed not to open up the process but to build on their earlier agreement. Moreover, the Chamber of Industries, a pivotal player in the proposed industrial EMS, was hesitant to be caught up in discussions about environmental harm that its members might have caused (i.e., environmental objectives and targets). Thus, the question of objectives and targets was a fairly easy matter in Guatemala City. The objective of the first ten years was to "reduce and stabilize" discharges, and the targets were the agreed standards. The objective for the following ten years (the longer term) was to reach ambient standards. This was a helpful consensus since it allowed the stakeholders to focus on the more difficult planning stage – or *how* to reach these objectives and targets through the use of programs and institutional coordination.

Recommendation:

The objectives and targets exercise as between an urban EMS and a single company or facility is different. For the former, the urban setting is too vast, the impacts potentially too numerous, and the resources too limited to develop the narrow, technical, time-bound targets contemplated by the ISO 14001 standards. The ISO standards apply more readily to a single company or facility. It is therefore important to recognize that an urban center in a developing country is unlikely to be able to implement all of ISO 14001's seventeen components, and that the ISO standard is best used as an organizing principle to enable the adaptation of what is best in the standard to the

subject area. Moreover, since a city is unlikely to need certification to the standard, an adaptation would seem the more effective policy. The lesson for an urban EMS, therefore, is not to get bogged down in Objectives and Targets; scarce resources are better used in Planning how to address them. Use existing or negotiated standards where possible (Guatemala) or otherwise direct the development of technical information (Agadir).

2.EMS Design Elements. The Task Order tasked the consultants with testing various EMS methodologies for urban centers. Agadir and Guatemala represented two different approaches to planning an EMS

In Agadir, as noted before, the Objectives and Targets exercise was central to the planning process. There the Environmental Management Committee adopted an Action Plan that broke down each strategic objective into discrete, measurable targets and developed a logical sequence of steps (actions, which were often major projects in and of themselves, per previous section) that were needed to ultimately reach the objective. Roles and responsibilities of institutional stakeholders for each action were agreed upon through a participatory dialogue and incorporated into a matrix, along with necessary collaboration mechanisms supporting the integrated implementation of the program over a period of three years. The resulting EMS was crisp, structured, and to-the-point.

In Guatemala, the consultants put together a more detailed draft design document that explained each element of the two phases of implementation. The first phase consisted of the establishment of a command-and-control program (including an environmental impact assessment program for new industry), and the later phase consisted of the integration of market-based incentives into that program. The Action Plan for Guatemala City, however, covered only the first phase of implementation (approximately five years of the nine year objective to stabilize and reduce industrial discharges). This phasing approach was done at the direction of the Mayor's office to preserve the comprehensive policy recommendations of the EMS, favored by the Municipality, but delay the more controversial second phase, considered troubling to industry, from near-term implementation. The resulting first phase focus in Guatemala was a significantly more prescriptive and procedural action plan than its Moroccan counterpart. In addition, many institutional issues with respect to this first phase implementation remained unresolved, mainly due to the uncertainty surrounding the new institutional framework for environmental management that was being shaped at the same time at the national level. Nevertheless, with the Municipality's active input, there was an attempt in the Action Plan to at least identify the institutional leads (by name wherever possible) for the various action items listed.

Recommendation:

In both projects, the EMS program was based on adequate (while perhaps not comprehensive) local input regarding local laws and institutions. Stakeholder familiarity with the local legal and institutional culture is very important to the process of obtaining buy-in from the stakeholders. In addition, for the program to have a good chance of being implemented, the re-formulation of programs and institutional linkages needs to be studied, understood, and approved by all major stakeholders (as was the case for Agadir) not just the principal counterpart (as was the case for Guatemala City);

moreover, the program needs sufficient time to expose stakeholders to the design elements and to allow various stakeholders to advocate for certain approaches over others. Unfortunately, local stakeholders often tend to approve the design document (rather than the design implications) before they fully understand the implications of the actions required. Ultimately, the EMS design should be viewed not just as a document but as a long, iterative stakeholder process. It is deemed successful when all stakeholders "buy into" the final written program.

Implementation. An urban EMS project should anticipate the human, technical, and financial resources available to implement it. In developing countries, it is reasonable to assume that EMS implementation will need to be supported with donor funding. Furthermore, if such funding is not secured or at least anticipated at the end of the design phase, the EMS program will face an uncertain future and will most likely be shelved for a long time.

Both the Agadir and the Guatemala City EMS initiatives were left without assurance that activities would be continued after the preliminary design phase. In Guatemala, the Municipality is trying hard to obtain IDB funds for this and other local environmental management activities. In Morocco, the plan was to incorporate the Greater Agadir EMS into the Mission's large regional integrated water resources management project. However, its design is likely to be altered substantially, if not re-done, by a new consulting team (in the absence of a strong commitment by RAMSA to the initial design).

Training is perhaps the largest component of EMS implementation. Unfortunately, this aspect of the EMS project was not reached in either the Agadir or the Guatemala projects.

Recommendation:

By its nature, an urban EMS project is complex and often requires the investment of considerable time and resources in order to meet its objectives. An urban EMS represents a natural extension of traditional donor support for policy design because it takes policy, in a step-wise fashion, all the way to implementation in a difficult freewheeling urban setting. Thus, the marriage of policy and implementation is a milestone in the evolution of environmental improvement. To ensure continuity of the approach and the stakeholder process, it is desirable to combine both the design and implementation phases a single project (2-3 years long). At the very least, helping the key counterpart to solicit and obtain funding for implementation should be an essential component of an EMS design project. This was, in fact, a key requirement of the Guatemala EMS design.

After the design elements have been laid out in detail (in the form of guidelines, draft procedures, manuals, etc.), a training program should target both government and private sector representatives. High-level decision-makers and technical personnel of government agencies should be trained in areas like regulatory procedures, monitoring, information management, etc. Industrial managers, on the other hand, should be educated in their own responsibilities vis-à-vis the requirements of the EMS program, as well as in how to maximize the business benefits (competitiveness, savings, public image, regulatory standing) of participating in the program.

Demonstrating these benefits to private sector stakeholders is an equally important part of EMS implementation. This can be done through technical assistance for pollution prevention audits and helping some industries establish ISO 14001-type EMSs. Such targeted technical assistance is a powerful incentive for industry to actively participate in the EMS.

5. SUMMARY OF RECOMMENDATIONS FOR URBAN EMS FRAMEWORK PROJECTS

These early experiences in applying the EMS framework to a municipal setting, based on ISO 14001 principles, demonstrate the need to be flexible with respect to individual steps of the process. The scope of the EMS project and other local conditions will affect the profile of any given EMS. The following are the principal steps of the EMS *design* process described above that we recommend be followed in similar projects in the future:

- a. Start stakeholder dialogue and advocate the EMS approach to managing local environmental issues.
- b. Ensure that there is sufficient interest in, and commitment to, the EMS approach on the part of the counterpart agency and the other principal stakeholders.
- c. Collect and analyze background information on the existing environmental problems and the legal and institutional framework that currently address them; identify priorities for action.
- d. Define meaningful strategic objectives and measurable, time-bound targets, but do not get bogged down in this exercise where scarce resources are involved.
- e. Within a planning mode, and mindful of the host country's legal culture, design details of the EMS framework so as to meet objectives and targets, using appropriate programmatic and institutional models. Always include a data management plan.
- f. Translate targets, with a newly formulated programmatic orientation (per item "e", above), into action steps for implementation, assigning institutional roles and responsibilities for each step.
- g. After a sufficient iterative stakeholder process, secure stakeholder approval of, and commitment to, the implementation of the designed EMS program, preferably through a memorandum of agreement.
- h. Help local stakeholders identify and secure human, technical, and financial resources needed to implement the EMS program (unless provided under the same project).
- i. Start implementation with an emphasis on training and demonstration of tangible benefits of the program, covering, where appropriate, both the private and the public sectors.

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