



How to Manage Hazardous Waste

Developing A Successful Program

by Katherine N. Probst and Thomas C. Beierle

In most countries, the development of environmental programs follows a similar pattern. Early efforts concentrate on direct threats to public health, such as contaminated drinking water and air pollution. Only after these problems are addressed does management of wastes deemed “hazardous” rise to the top of the environmental agenda. Many countries in North America and Europe enacted legislation instituting hazardous waste requirements during the 1970s. By the late 1980s, hazardous waste management programs could be considered “fully operational” in many of these developed countries. In most, attention has now turned to minimizing waste production in the first place.

Few developing countries have effective hazardous waste management programs, but many are seeking to institute them. Looking back at the experience of countries with mature programs, it is possible to identify some key components of success.

- A definition of what constitutes “hazardous waste”;
- Requirements for how wastes are to be treated, stored, and disposed;
- Information on the origin, type, and quantities of waste generation;
- A designated agency (or agencies) to set regulatory requirements and see that they are enforced;
- Adequate capacity in modern waste management facilities so that wastes can be treated, stored, and disposed of in an environmentally sound fashion;
- A “culture of compliance” where meeting requirements is the norm, and waste generators and those operating waste management facilities—as well as the general public—believe government requirements will be systematically monitored and fairly enforced.

Some of these elements are easier to achieve than others, and all of them take time. Even in developed countries with well-established and credible environmental programs, such as the United States and Germany, creating an effective program took ten to fifteen years. Some developing countries, such as Thailand, Malaysia, and Indonesia, have been actively involved in regulating hazardous waste for the past five to ten years, but still have a long way to go. In many ways, the central challenge is creating incentives for proper hazardous waste treatment and disposal, the demand for which is driven

ties are built. One of the difficulties for countries seeking to encourage better waste management is that few, if any, high quality waste treatment and disposal facilities usually exist, absent requirements for proper waste management. Yet without these facilities, waste generators often cannot comply with new requirements for proper treatment and disposal (unless they build their own facilities on site, as some large generators do).

What lessons can we offer countries embarking on this challenge? First, the time it takes to see a marked improvement in hazardous waste management is

measured in decades, not years. Second, there is no “correct” approach to creating a program that will work in every country, or every situation. Each country has a unique economy, legal and cultural institutions, and governmental system to consider. Third—and perhaps most important for success—is the existence of credible and effective regulatory and enforcement institutions. Absent these, sound requirements may be on the books, but are

unlikely to be met. Finally, in those countries lacking effective regulatory and enforcement systems, direct public financing of hazardous waste infrastructure may be the best policy for ensuring that modern waste treatment and disposal facilities are built, and equally important, for encouraging (through subsidized disposal fees) that these facilities are in fact in demand. ☺

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largely by regulatory requirements.

Absent such requirements, it is unlikely that hazardous waste generators will pay the price for proper waste management. One of the concerns about instituting more stringent—and costly—requirements is that it makes proper waste treatment and disposal *more* expensive, thus creating a powerful incentive for *improper* waste disposal. One answer may be for government to subsidize the cost of proper waste disposal, at least in the early years of new hazardous waste requirements.

In fact, in many countries, government plays an important role in ensuring that modern treatment and disposal facili-