Conclusion

In its ongoing assessment of nonnuclear industrial waste disposal, OTA will continue its investigation of the advantages and disadvantages of degree-of-hazard classification and the potential for incorporating it into a regulatory policy framework. Further evaluation is needed to answer the questions raised here and to identify, if not resolve, the uncertainties that can emerge when developing a classification and management system based on degree-of-hazard, rather than some qualitative use of the concept only. Of particular importance is an assessment of how to implement such a scheme — no t necessarily as a replacement, but as a growing component of the current program. For example, it may be appropriate to maintain the national framework as it currently exists and to incorporate degree-of-hazard classification in areas dealing with permitting or liability requirements. Another alternative is to allow the States, as ultimate managers of the nonnuclear industrial hazardous waste (NIHW) problem, to develop degree-of-hazard classification and management systems within their programs. If this were a practical outcome of an implementation analysis, then efforts to develop uniform criteria within the Environmental Protection Agency (EPA) regulations would be desirable. Full implementation of such a system requires developing a set of technological criteria and treatment/disposal alternatives for managing the various classes of waste. The availability of these alternatives is another area of some uncertainty that requires further investigation.

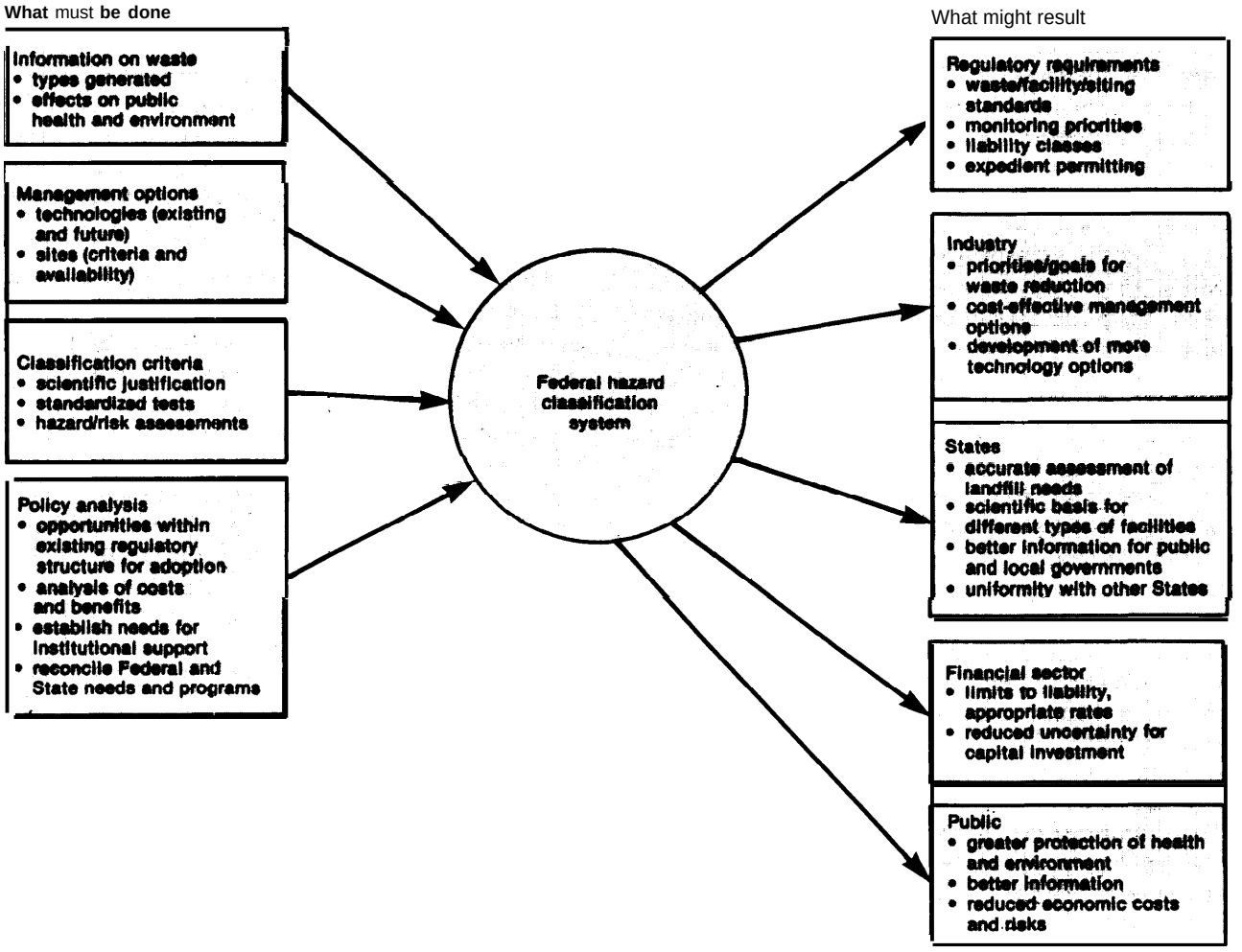
Figure 4 summarizes those areas that require further research, development, and analysis, and the possible benefits of implementing a Federal hazard classification system for management of industrial waste. Before a Federal system can be designed and implemented it will be necessary to develop information about waste generation, management needs and options, classification criteria, and policy opportunities, and the costs of obtaining these, Without addressing these information needs and the uncertainties surrounding them, the optimistic results indicated in figure 4 may not occur or classification could have negative impacts on a national waste management effort. If properly developed, however, a hazard classification system might provide a cost-effective means of handling the hazards posed by management of industrial waste. However, an analysis of the current approach and a degree-of-hazard approach is needed.

The problems and uncertainties of developing and applying a degree-of-hazard classification and management system to NIHW might be resolved by combining the interests of the public for health protection, the needs of industry, the initiative of State programs, and the efforts of the scientific community, The anticipation of a greater potential for protecting human health and the environment and long-term economic benefits provides an important incentive for reconsidering this concept as a potentially cost-effective way to manage NIHW.

Development of an efficient management system, whether it follows a classification approach or not, requires that certain factors be taken into account. The system must be designed to maximize compliance and must be enforceable; therefore, it is necessary to consider ultimate ease of administration and capability for institutional compliance. If the system undergoes frequent and unrealistic changes, tremendous problems can result, as was emphasized by the Conservation Foundation's report on low-level radioactive waste disposal. **(18)**

> The proper role of the scientist in defining and classifying . . . waste, now often unclear, frustrating and constantly changing, is also a key element in establishing an administratively workable system. Scientists initially develop the information used in promulgating standards and then are required to comply with and implement classification systems that have emerged from the political process. However, the rules that emerge from the standards-setting process may not reflect the actual capability or practice of those who must comply with them.

Figure 4.—Research, Development, and Analysis Requirements and Possible Benefits of Implementation of a Hazard Classification System



SOURCE: Off Ice of Technology Assessment.

Finally, resource constraints must be assessed realistically. A well-designed, cost-effective management system will make certain that the limited resources–whether economic or manpower—are directed toward waste that pose the greatest risks for both the short and long terms for human health or the environment.