SECTION V

RISK ASSESSMENT AND ITS USE IN MANAGEMENT - A STATE-OF-ART REVIEW

by
A.I. Sors

One of the major environmental issues at present is the control of risks due to the formulation, manufacture, use, and disposal of chemicals. Control measures of various kinds are being designed and implemented in many countries, as well as through international organizations. The extent and type of controls are based upon assessments of the risks - as well as the benefits - of the chemicals.

The purpose of this review is to outline current methods of risk assessment and examine how these are, or could be, applied to the management of toxic chemicals. Thus, the coverage of this review extends to risk management, which attempts to incorporate both scientific analysis and political judgement. Within this framework, the main methods available, their status and limitations, and the major issues involved will be identified.

In setting such a broad task, the coverage is - of necessity - fairly general, with illustrative examples included where appropriate. The review is largely aimed at the users rather than the producers of risk assessments, even though the latter probably do not exist as a clearly identified group. The term "user" means the decision-maker or risk manager at international, national and local levels. The review addresses assessment of direct risk to human health; impacts on nonhuman targets are not considered.

Scope of Risk Assessment and Management

Coping with risk has always been a feature of life in all societies. A variety of means have emerged for human beings to deal with environmental risks, and these coping actions can either be classified as adaptations or adjustments (1). Adaptation usually occurs through gradual, long-term responses, both natural (e.g. selection processes) and cultural (e.g. societal taboos, norms). Adjustments tend to be shorter term, conscious responses including the regulation of risky activities.