

Waste Prevention Audits of River Basins

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Contaminated sediments are a serious problem in coastal areas worldwide, and the problems are magnified in enclosed coastal seas. Dredging for maintenance and expansion of ports and harbors in these areas is often hampered when sediments are severely contaminated, and both dredging and disposal of dredged materials pose environmental threats.

The London Convention of 1972 (formerly known as the London Dumping Convention) has incorporated into its new Waste Assessment Framework a recommendation for waste prevention audits to be conducted prior to the permitting of any materials to be disposed at sea, including dredged materials. While waste prevention audits are most commonly applied to industries, when applied to river basins, they should be valuable as a tool for clean-up and prevention of contaminated sediments in rivers and their receiving basins -- be they large inland seas, coastal estuaries or enclosed coastal seas.

A waste prevention audit on a drainage basin includes the identification of all sources of toxic pollutants into the river system and identifies the most critical needs for reduction of inputs and opportunities for implementing those reductions. Using the information provided by the audit, responsible government agencies in consultation with users and polluters, can develop and implement a waste reduction strategy.

This paper proposes a process for river basin audits that is comparable to the waste prevention (or reduction) audits for industry. Several steps of information gathering and decision making are identified: (1) the initial identification of contaminants in sediments proposed for dredging and disposal; (2) the identification of upstream sources of the contaminants; (3) prioritization of waste reduction actions; (3) technical analysis of reduction methods; (4) full economic analysis of waste reduction costs compared to costs of waste management (including environmental costs); and (6) monitoring and assessment of progress in reduction of sediment contamination. Sediment waste prevention audits pose particular problems of assigning responsibility for conducting and financing the information gathering and implementation of a waste reduction strategy. Several options are considered, and all require cooperation among a host of users of the coastal marine and river environments. The potentially powerful linkage between dredging permits and waste prevention audits is considered with the understanding that such a linkage should not in the end cripple commercial ports but rather enable them to be maintained in the future with reduced risk to the coastal marine environment.