

Assessing the feasibility of marine oil spill contingency plans from an information perspective

Abstract

This paper evaluates the feasibility of marine oil spill contingency plans (OSCPs) systematically from the perspective of information availability and accuracy. A conceptual model integrating the fundamental elements of contingency plans is introduced, and the relevant information flows for marine oil spill emergency response processes are identified. The Dempster–Shafer (D-S) reasoning approach was adopted to develop a series of models for assessing the information-related feasibility of contingency plans. The models were validated through a case study, which proved that simplifying information requirements and improving the availability and accuracy of key information are effective methods of improving the information-related feasibility of contingency plans. Such research issues as improving the availability and accuracy of information and obtaining experts' subjective opinions require further investigation. The main contributions of this study are identifying the importance of information for implementing OSCP and developing a well-structured analysis framework and an appropriate method for assessing the information-related feasibility of OSCP.