

Chapter 4

Opportunities for Advancement

In order to advance HAB prediction and response, it is first necessary to identify areas for improvement in current services and programs. The following approaches have been or will be used to accomplish this: 1) federal agencies were given the opportunity to highlight issues of concern during the process of collecting information for this report, 2) the *HARRNESS*⁹ report included detailed recommendations, many of which directly affect prediction and response, and 3) the *HABHRCA* 2004 legislation mandated that a summary of this report be published in the Federal Register to solicit comments from the public on how HAB prediction and response might be improved. The public comments were summarized and included in (3) below. All of this information and recommendations from *HARR-HD*¹⁰, which provides a detailed implementation plan for social science research critical to achieve the goals of *HARRNESS*⁹, will be used by the IWG-4H to shape the next report, the *RDDTT Plan*, through the workshop process (see Next Steps). The *RDDTT Plan* will establish research priorities and put forth a coordinated strategy for improving current efforts in HAB prediction and response.

(1) Approaches for Improving Prediction and Response Identified by Federal Agencies

As part of the process for developing this report, federal agencies were asked to identify areas where prediction and response could be improved. The following approaches were identified and are organized into the broad categories planned for the RDDTT workshop (see Next Steps):

A. HAB infrastructure development.

The following types of infrastructure were specifically identified as priorities for enhancing

prediction and response capacity (in no particular order of priority):

i. Increase availability of certified toxin standards, labeled toxins, and information on protocols and methods for toxin analysis. Some toxin standards are available in the U.S., such as radiolabeled saxitoxin, and a few others are available from Canada, but many other toxin standards, especially certified compounds, are not available.

ii. Make reference materials more generally available. Reference materials include molecular probes for cell identification, clonal cell isolates and genetic material for research and refinement of assays, and contaminated and control animal and human tissue samples for developing new protocols and examining past events.

iii. Improve researcher training in HAB identification and toxin analysis to ensure a timely response to events, sustain long term monitoring, and facilitate research to improve prediction and response.

iv. Locate observing systems with HAB-specific and environmental sensors in areas where HABs occur frequently. Integration and coordination of observing system data will allow easier data access for scientists and managers. Concomitant model development will use the data from these systems for early warning and prediction.

v. Make satellite coverage of ocean and coastal zones more comprehensive, add more calibration moorings for satellite data, and integrate existing satellite data into observing systems. New remote sensing technologies will provide better spatial and temporal

