TITLE	Reference	Last amendment (CL or IHC/A)	1st Edition Reference
IHO RESPONSE TO DISASTERS	1/2005 as amended	A-2	K4.5

1 Introduction

~~The 2004 and 2011 Indian Ocean and Japan tsunami~~In recent years, huge earthquakes, tsunamis, hurricanes and other natural disasters occurred all over the world and not only severely affected local communities through the widespread loss of life and the extensive destruction of most facilities, but also severely affected safety of navigation through the destruction of port facilities and the creation of new navigational obstacles. A huge number of refugees were created and immediately suffered from shortages of food, water and fuel. In such circumstances support by sea transport was vital and depended on the immediate restoration of appropriate hydrographic and charting services.

~~Hydrographic Offices should therefore plan to respond immediately after the occurrence of such severe disasters within their area of responsibility, which may vary from Member State to Member State.~~

It should be noted that "the Sendai Framework for Disaster Risk Reduction 2015-2030" was adopted at the 3rd UN World Conference on Disaster Risk Reduction (WCDRR3), where international organizations are expected to implement activities to understand and manage disaster risks.

Various data and information obtained from hydrographic and charting activities are beneficial for sharing information right after a disaster, the development of restoration plans for damaged coastal areas and for strategies for disaster risk reduction. It would be important to provide hydrographic information effectively in the process from the occurrence of the disaster to the recovery.

The International Hydrographic Organization, its Member States and the Regional Hydrographic Commissions should ensure ~~that appropriate procedures and guidelines are in place~~adequate preparedness so as to enable an immediate and appropriate response to any future disaster affecting coastal areas of the world.

~~These procedures should provide guidance to be followed at the national, regional and international levels within the over-arching structure of the IHO.~~

~~Such procedures and guidelines should aim to:~~

~~- ensure the immediate assessment of damage and its effect on the safety of navigation of national and international shipping,~~
~~- immediately inform mariners and other interested parties of relevant damage and any dangers, particularly with respect to navigational hazards,~~
~~- re-establish the basic key maritime transportation routes, and~~
~~- ensure that charts and other hydrographic information of affected areas are updated as soon as possible.~~

~~The procedures and guidelines should identify the type of actions required and the likely support from Hydrographic Offices needed to recover from the damage.~~

~~Appropriate global or regional actions can be co-ordinated through the IHO Secretariat, in liaison with the relevant Regional Hydrographic Commissions, IHO Member States, other Coastal States and relevant International Organizations, as appropriate to the circumstances, based on the general framework described in section 2 below.~~

~~It is also very important for Coastal States to collect relevant coastal and bathymetric data in their areas of responsibility and to make this available to the appropriate organizations to support the establishment and improvement of tsunami early warning systems, protection of coastal areas and relevant simulation studies. In particular, Coastal States should cooperate and support the IOC Tsunami Warning Programme (www.ioc-tsunami.org) in setting up sea level and tide gauges networks, procedures and systems for the exchange and~~

~~transmission of near real time sea level data. One to five minute transmission of sea level data, properly sampled (~ 1 min rather than 15 min or 1 h) is recommended for specific gauges likely to provide early warnings of tsunamis and storm surges. Any necessary regional cooperation for the collection of data can be coordinated through the Regional Hydrographic Commission with other States in the Region and regional bodies of other International Organizations as appropriate, such as the IOC.~~

~~**2 Procedures and Guidelines**~~

Hydrographic Offices should therefore be part of the National Plan developed beforehand to respond immediately after the occurrence of such severe disasters and participate in and cooperate in the development and implementation of the restoration plans for the damaged coastal areas and the strategies for disaster risk reduction within their area of responsibility, which may vary from Member State to Member State. As such following activities can be identified with the overarching framework of the IHO convention and general regulations.

2 Activities

a) By Coastal States:

All Coastal States ~~should have~~are encouraged to develop contingency plans ~~developed~~ in advance in order to be prepared in case a disaster occurs. ~~After the occurrence of a disaster affecting coastal areas under its jurisdiction, each State should promulgate Maritime Safety Information~~The specific roles and ~~conduct a preliminary survey to confirm the principal transportation routes, according to the extent of the damage.~~
~~In response to the reconstruction of ports, each State should undertake hydrographic surveys so as to keep the charts updated. These actions should be coordinated with neighbouring States, Regional~~ tasks of the Hydrographic ~~Commissions and others as appropriate.~~

~~It is important that each~~Offices within these Coastal ~~State provides both a senior point of contact and a working point of contact for communication and coordination purposes; this could include the Director of the Hydrographic Service or Maritime Safety Agency or other appropriate persons with the appropriate authority and who are familiar with maritime procedures~~States depend on the individual national governance structures.

Contingency plans ~~should~~may contain the following key elements as appropriate:

i) ~~i)~~ Immediately upon the occurrence of a disaster, including tsunami, promulgate appropriate navigational warnings and necessary information and advice to shipping through existing channels (e.g. NAVTEX, SafetyNET, etc…) ~~.~~using appropriate ways, such as graphical information on maps. In addition and following further monitoring and assessment, promulgate updated warnings, information and advice in accordance with the development of the event.

ii) ~~ii)~~ Co-operate with the NAVAREA Co-ordinator and other national co-ordinators so that warnings, information and advice can be made available to mariners beyond the area of national jurisdiction as soon as is practicable.

iii) ~~iii)~~ Assess the extent of damage to the coastal area particularly to ports, harbours, straits, approaches, and other restricted areas.

iv) ~~iv)~~ Assess, in co-operation with other national agencies, for example, lighthouse and port authorities, the extent of damage to navigational aids.

v) ~~v)~~ Prioritize actions and allocate resources in order to identify requirements and undertake preliminary re-surveys starting with the most critical areas for navigation, aiming at ensuring the passage of support and supplies through maritime channels and ports, and the marking of new dangers where necessary.

vi) ~~vi)~~ Assess the specific effects on shipping of the existence of obstacles and any changes to the seafloor that can hinder navigation, taking full account of the effects of drifting obstacles which may also hinder preliminary survey results.

~~vii) Inform the Chair of the Regional Hydrographic Commission and the IHO Secretariat of the situation, providing details of the damage, actions taken and indicating what support, if any, is needed.~~

vii) ~~viii)~~ Take the following action to assess and define new hydrographic or cartographic requirements, including:

1. ~~1.~~ Conducting hydrographic surveys in harbours and approaches as soon as practicable wherever the depth is likely to have changed due to geomorphic change, obstacles, or accumulation of sediment. Surveys should be progressed incrementally in support of progress in reconstruction of port facilities.

2. ~~2.~~ Checking and confirming relevant benchmarks. Re-defining chart datum, if necessary.

3. ~~3.~~ Providing nautical information as soon as practicable. Providing chart correction information or new editions of charts incrementally according to priorities and available resources. Indicating newly surveyed areas in chart correction information or on new editions of charts –in order to highlight areas of more reliable information in areas where significant changes of depth have taken place.

4. ~~ix) Provide follow-up reports~~Noting that, in case of earthquake, the ground level may continue to change for many years due to post-seismic crustal deformation, which may accumulate and affect charted depths significantly.

Also, actions to be taken in ordinary period may contain the following key elements as appropriate:

1) Prepare equipment and information and conduct exercises to implement the contingency plan effectively.
2) Share information about disaster response with the Chair of the ~~Regional Hydrographic Commission~~RHC and the IHO Secretariat at appropriate. This includes support requests for the immediate disaster response as well as the recovery response, for instance enabling entry survey or subsequent updating of nautical charts.

It is also very important for Coastal States to collect relevant coastal and bathymetric data in their areas of responsibility and to make this available to the appropriate organizations to support the establishment and improvement of tsunami early warning systems, protection of coastal areas and relevant simulation studies. In particular, Coastal States should cooperate and support the IOC Tsunami Warning Programme (www.ioc-tsunami.org) in setting up sea-level and tide gauges networks, procedures and systems for the exchange and transmission of near real time sea-level data[1]. One to five minute transmission of sea-level data, properly sampled (~1 min rather than 15 min or 1 h) is recommended for specific gauges likely to provide early warnings of tsunamis and storm surges. Any necessary regional cooperation for the collection of data can be coordinated through the Regional Hydrographic Commission with other States in the Region and regional bodies of other International Organizations as appropriate, such as the IOC.

b) By Regional Hydrographic Commissions:

~~The Chair of the~~ Regional Hydrographic ~~Commission will be responsible for co-ordinating the actions needed within the Region. In order to achieve this, the~~ Commissions (RHC) should ~~develop a '~~include disaster~~' action plan, aimed at supporting States in the area to assess the hydrographic damage, provide support~~ preparedness and ~~co-ordinate actions and efforts. These plans will be focused on the following:~~

~~i) Communicating, by the quickest means available, with the focal points of the States in the Region, in order to make an initial evaluation of the extent of the damage.~~

~~ii) Deciding whether a Regional technical task team needs to visit States in the area to support the evaluation of the damage and support needed.~~

~~iii) Deciding, based on the information collected, whether an Extraordinary Meeting of the RHC is needed, in order to discuss in detail the problems, evaluate the damage and respond to requests for support.~~

[1] See also "Manual on Sea Level: Measurement and Interpretation Volume IV" https://www.psmsl.org/train_and_info/training/manuals/

~~iv) Deciding if the Chair needs to take a co-ordinating role in assessing damage, providing support and broadcasting information to mariners.~~

~~v) Informing the IHO Secretariat on the situation, the actions taken and the need, if any, for external support.~~

~~vi) Monitoring the progress of the actions agreed in the area, keeping Member States in the Region and IHO Secretariat informed accordingly.~~

i) ~~viii) Including this issue as a permanent~~response into Agenda item on RHC meetings ~~in order to monitor the readiness of the Commission to respond to disasters and conducting regular table-top exercises to evaluate the procedures.~~as appropriate.
ii) The Chair of a RHC may act as a broker for hydrographic demand (from the affected countries) and supply (by countries offering assets).
iii) RHC should consider the implementation of capacity building for disaster preparedness and response as appropriate.

c) By the IHO Secretariat:

i) The IHO Secretariat ~~will co-ordinate the~~should promote actions ~~required of Member States~~ by member states and ~~Regional Hydrographic Commissions in order to assess damage and will co-operate with other International Organizations~~RHCs above as appropriate ~~to co-ordinate any external support required.~~

The IHO Secretariat ~~will undertake the following tasks:~~

~~i) Communicate with the Chairs of the Regional Hydrographic Commissions and, where necessary, directly with Member States in the region(s) affected, in order to collect information relating to the scale of the damage, actions taken, the support needed and the desirability of a regional meeting.~~

~~ii) Participate as appropriate in meetings organized by the RHC or Member States, to determine problems and the actions required to remedy the situation~~

ii) ~~iii) Co-operate with other International Organizations, informing them of matters affecting the safety of navigation, the needs of Member States, and actions taken and seeking where appropriate, support from these Organizations~~should promote sharing best practices regarding disaster preparedness and response provided by member states for the ~~repair of the damage.~~world resilience.

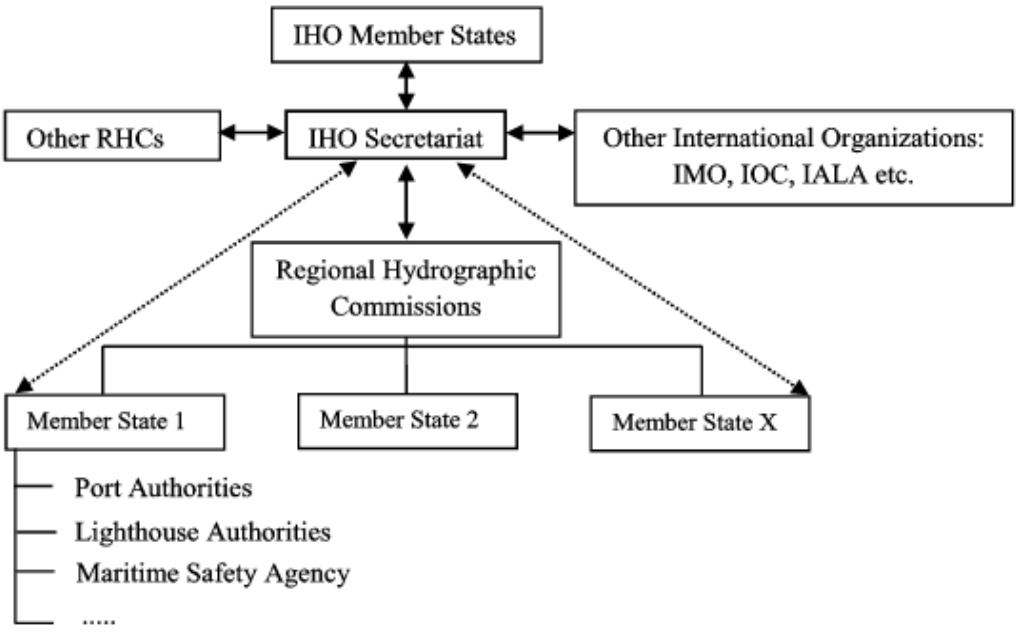
~~iv) Invite other International Organizations to participate in Regional Meetings, in order to contribute to the discussions and to the required actions.~~

~~v) Monitor developments and inform Member States on all issues associated with the damage, actions taken and support needed.~~

~~vi) Investigate the willingness of Member States to provide support and co-ordinate the appropriate actions with the affected States in close co-operation with the Chair of the RHC.~~

~~vii) Participate in discussions at RHC meetings to monitor requirements, develop responses to possible disasters and test the procedures and readiness to respond by tabletop exercises.~~

~~3 IHO Disaster Reaction Organization~~



3 Diplomatic clearance

Effective disaster response predicates on diplomatic clearance to actually deploy the offered hydrographic assets in theatre. It is the responsibility of affected Coastal States to institute procedures to progress 'hydrographic' requests timely through their Nations Diplomatic channels. As it is the national responsibility of the Member States offering such support, to use those channels. The IHO secretariat and Chairs of the RHC have no means to absorb these national responsibilities.

CLEAN VERSION

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1 Introduction

In recent years, huge earthquakes, tsunamis, hurricanes and other natural disasters occurred all over the world and not only severely affected local communities through the widespread loss of life and the extensive destruction of most facilities, but also severely affected safety of navigation through the destruction of port facilities and the creation of new navigational obstacles. A huge number of refugees were created and immediately suffered from shortages of food, water and fuel. In such circumstances support by sea transport was vital and depended on the immediate restoration of appropriate hydrographic and charting services.

It should be noted that "the Sendai Framework for Disaster Risk Reduction 2015-2030" was adopted at the 3rd UN World Conference on Disaster Risk Reduction (WCDRR3), where international organizations are expected to implement activities to understand and manage disaster risks.

Various data and information obtained from hydrographic and charting activities are beneficial for sharing information right after a disaster, the development of restoration plans for damaged coastal areas and for strategies for disaster risk reduction. It would be important to provide hydrographic information effectively in the process from the occurrence of the disaster to the recovery.

The International Hydrographic Organization, its Member States and the Regional Hydrographic Commissions should ensure adequate preparedness so as to enable an immediate and appropriate response to any future disaster affecting coastal areas of the world.

Hydrographic Offices should therefore be part of the National Plan developed beforehand to respond immediately after the occurrence of such severe disasters and participate in and cooperate in the development and implementation of the restoration plans for the damaged coastal areas and the strategies for disaster risk reduction within their area of responsibility, which may vary from Member State to Member State. As such following activities can be identified with the overarching framework of the IHO convention and general regulations.

2 Activities

a) By coastal States:

All coastal States are encouraged to develop contingency plans in advance in order to be prepared in case a disaster occurs. The specific roles and tasks of the Hydrographic Offices within these coastal States depend on the individual national governance structures.

Contingency plans may contain the following key elements as appropriate:

i) Immediately upon the occurrence of a disaster, including tsunami, promulgate appropriate navigational warnings and necessary information and advice to shipping through existing channels (e.g. NAVTEX, SafetyNET, etc.) using appropriate ways, such as graphical information on maps. In addition, and following further monitoring and assessment, promulgate updated warnings, information and advice in accordance with the development of the event.

ii) Cooperate with the NAVAREA Coordinator and other national coordinators so that warnings, information and advice can be made available to mariners beyond the area of national jurisdiction as soon as is practicable.

iii) Assess the extent of damage to the coastal area particularly to ports, harbours, straits, approaches, and other

restricted areas.

iv) Assess, in cooperation with other national agencies, for example, lighthouse and port authorities, the extent of damage to navigational aids.

v) Prioritize actions and allocate resources in order to identify requirements and undertake preliminary re-surveys starting with the most critical areas for navigation, aiming at ensuring the passage of support and supplies through maritime channels and ports, and the marking of new dangers where necessary.

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vii) Take the following action to assess and define new hydrographic or cartographic requirements, including:

1. Conducting hydrographic surveys in harbours and approaches as soon as practicable wherever the depth is likely to have changed due to geomorphic change, obstacles, or accumulation of sediment. Surveys should be progressed incrementally in support of progress in reconstruction of port facilities.

2. Checking and confirming relevant benchmarks. Re-defining chart datum, if necessary.

3. Providing nautical information as soon as practicable. Providing chart correction information or new editions of charts incrementally according to priorities and available resources. Indicating newly surveyed areas in chart correction information or on new editions of charts in order to highlight areas of more reliable information in areas where significant changes of depth have taken place.

4. Noting that, in case of earthquake, the ground level may continue to change for many years due to post-seismic crustal deformation, which may accumulate and affect charted depths significantly.

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1) Prepare equipment and information and conduct exercises to implement the contingency plan effectively.
2) Share information about disaster response with the Chair of the RHC and the IHO Secretariat at appropriate. This includes support requests for the immediate disaster response as well as the recovery response, for instance enabling entry survey or subsequent updating of nautical charts.

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b) By Regional Hydrographic Commissions:

i) Regional Hydrographic Commissions (RHC) should include disaster preparedness and response into Agenda item on RHC meetings as appropriate.
ii) The Chair of a RHC may act as a broker for hydrographic demand (from the affected countries) and supply (by countries offering assets).
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c) By the IHO Secretariat:

i) The IHO Secretariat should promote actions by Member States and RHCs above as appropriate.
ii) The IHO Secretariat should promote sharing best practices regarding disaster preparedness and response provided by Member States for the world resilience.

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Effective disaster response predicates on diplomatic clearance to actually deploy the offered hydrographic assets in theatre. It is the responsibility of affected coastal States to institute procedures to progress 'hydrographic' requests timely through their Nations' Diplomatic channels. As it is the national responsibility of the Member States offering such support, to use those channels. The IHO secretariat and Chairs of the RHC have no means to absorb these national responsibilities.