Tiered Preparedness & Response Approach

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Oil Spill Response Thailand 2017

Session Overview

- *What is Tiered Preparedness and Response (TPR)?*
- *Why is Tiered Preparedness and Response used?*
- *How has Tiered Preparedness and Response Evolved?*
- *Tiered Preparedness and Response in Oil Spill Planning*

What is Tiered Preparedness and Response?

TPR is an internationally recognized planning approach used to;

Define and structure levels of oil spill response capabilities

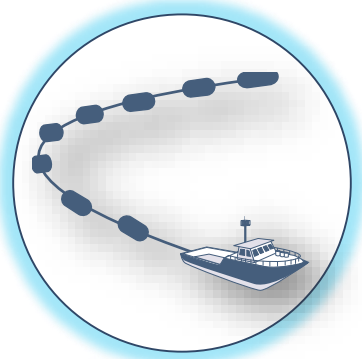
<u>NOT</u> to categorize the size and scope of a spill

Plan for appropriate resources to be rapidly mobilized and cascaded to an incident location

Enable response escalation for an oil spill of any magnitude

TPR considers the following resources;

RESPONDERS



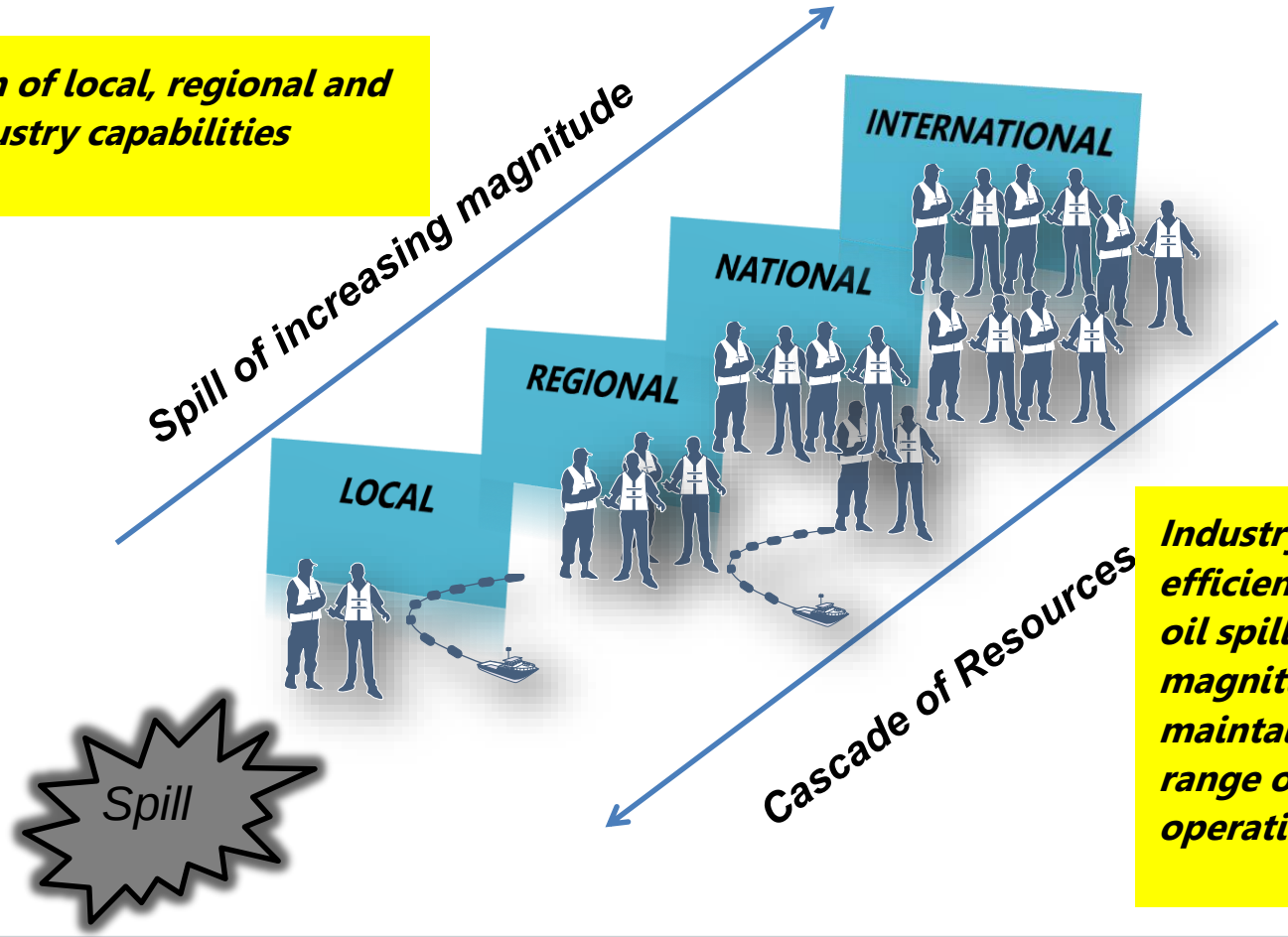
EQUIPMENT

ADDITIONAL SUPPORT

Why is Tiered Preparedness and Response used?

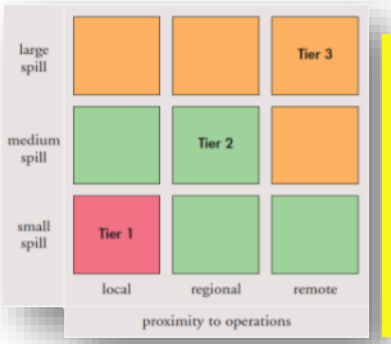
Tiered Preparedness and Response enables

Integration of local, regional and global industry capabilities



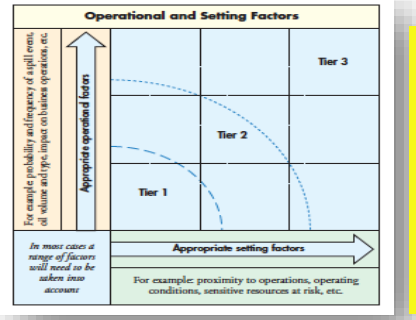
Industry's ability to efficiently respond to an oil spill of any magnitude without maintaining the entire range of response at each operating facility

How has Tiered Preparedness & Response evolved?



Box Model

- Spill Location
- Spill Volume



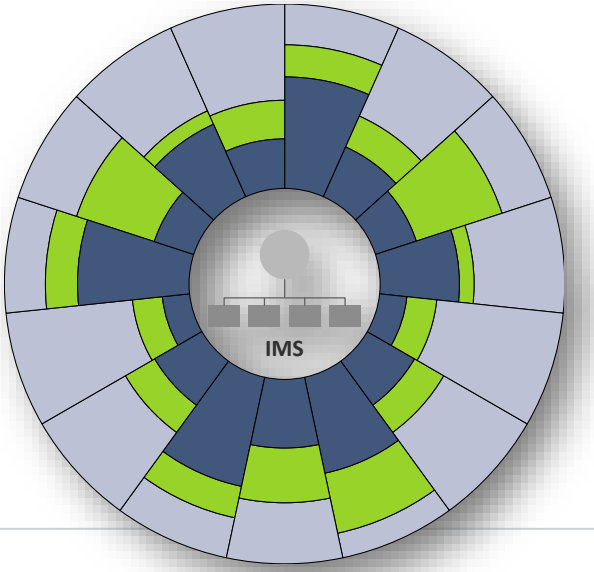
Concentric Circle Model

- Operational Factors
- Environmental Settings

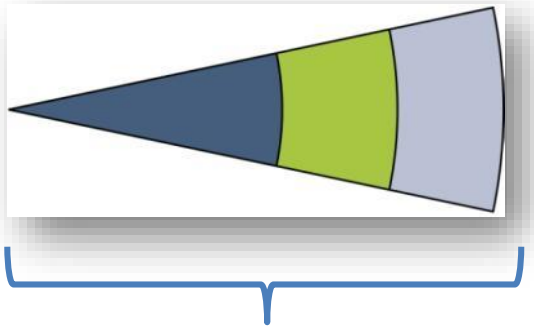
1980's ~ ~ ~ ~ ~ **2007** ~ ~ ~ ~ ~ **2013**

Response Capability Wheel

- "Response Tool Box"
- Resources provisioned according to risk

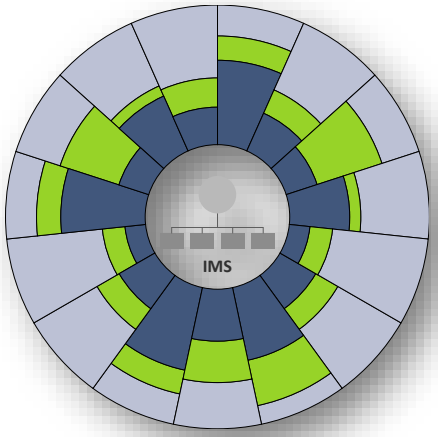


Tiered Preparedness and Response Model

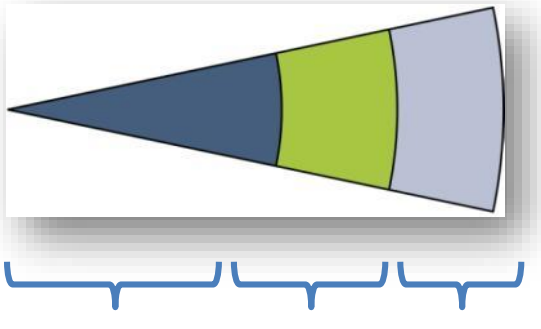


- ***Each wedge represents a response capability***
- ***e.g. Offshore Dispersants***

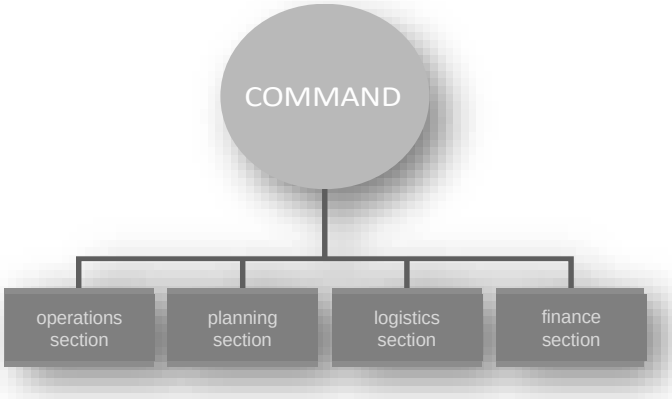
THE MODEL



Capability Wheel



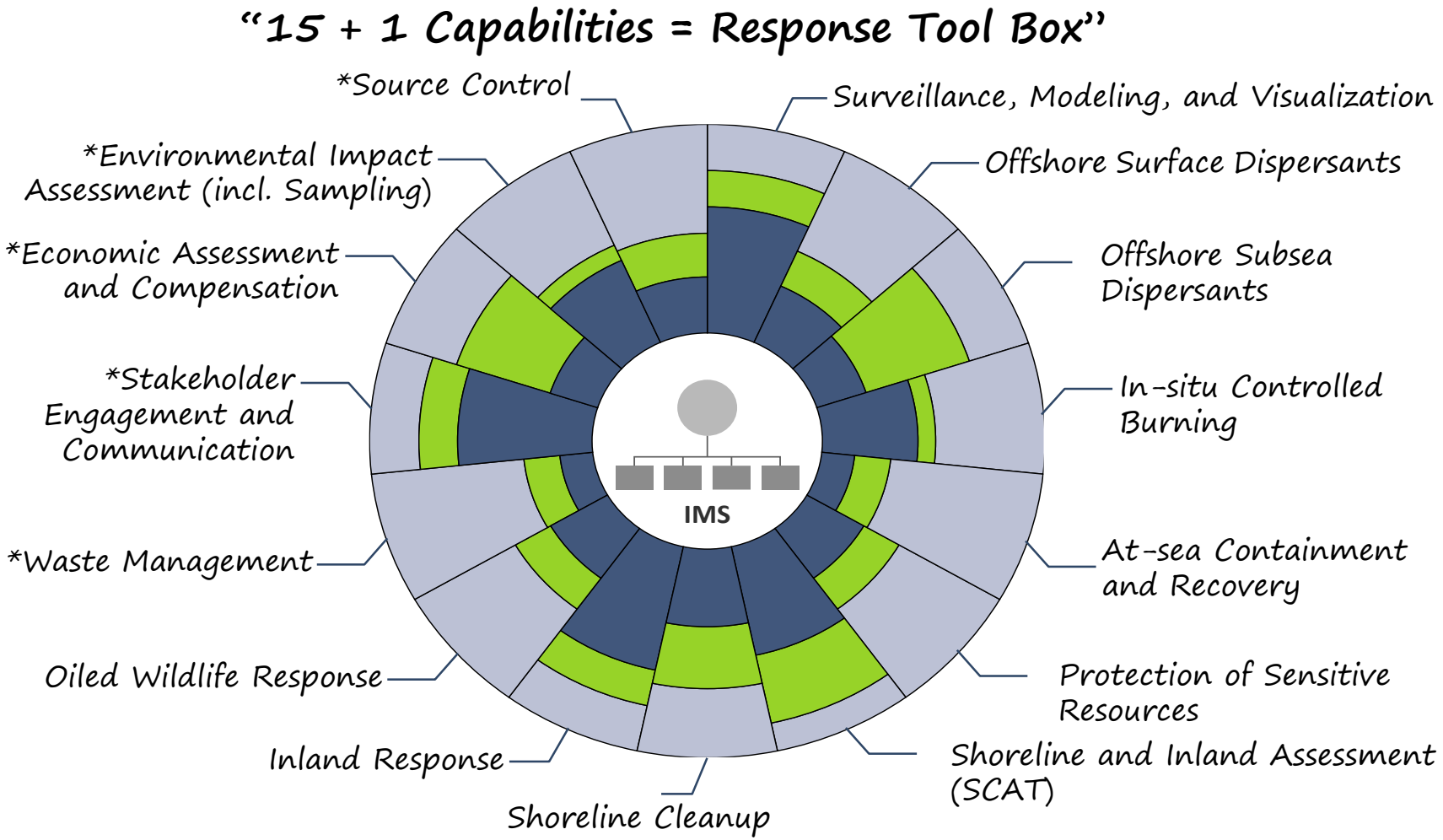
- ***Each wedge is subdivided to illustrate the available/required resources available for each tier***



- ***Incident Management System is at the centre of the wheel***

- ***Tier 1 : Local Resources***
- ***Tier 2 : Regional /National Resources***
- ***Tier 3 : International Resources***

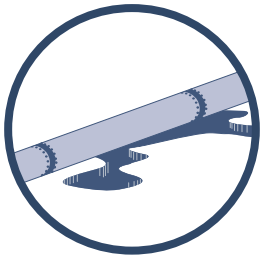
Capabilities of Tiered Preparedness & Response



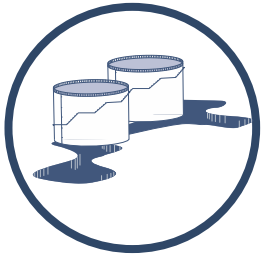
*These capabilities may not be provided by oil spill response organizations, but must be considered by operators in planning.

Preparing for Response

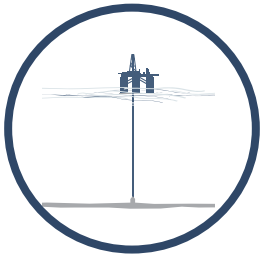
Identify Sources



ONSHORE

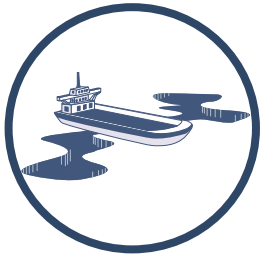


INLAND



SUBSEA

NEAR SHORE



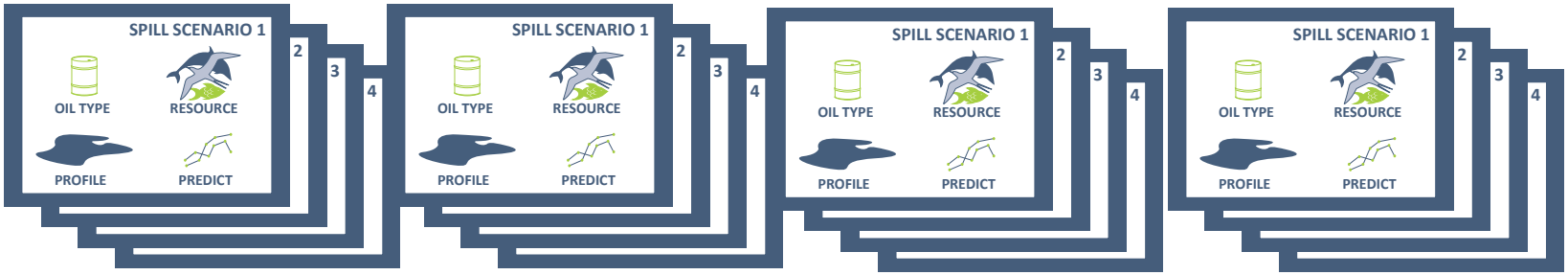
OFFSHORE

List Events

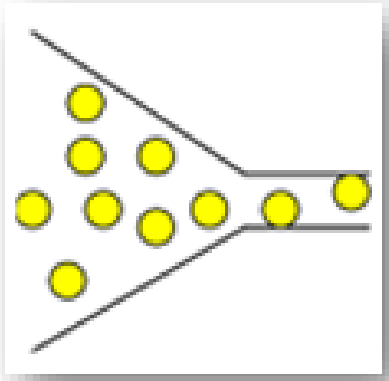
1) Full bore rupture, continuous release until relief well completed after 100 days
2) Catastrophic failure of fuel storage tank at the marine shore base
3) Collision of Supply vessel resulting in complete loss of inventory
4) Accidental disconnection of riser resulting in instantaneous release
5)……
6)……
7)……
8)……

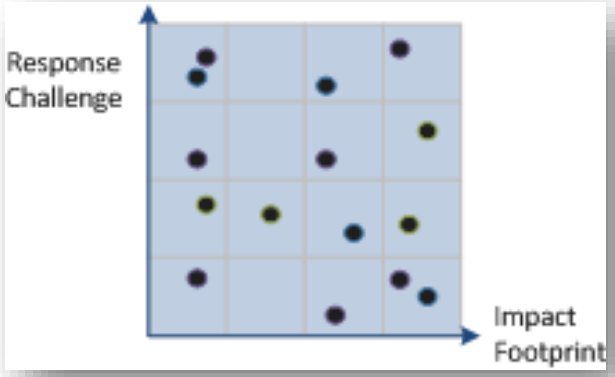
Preparing for Response

Plan Scenarios



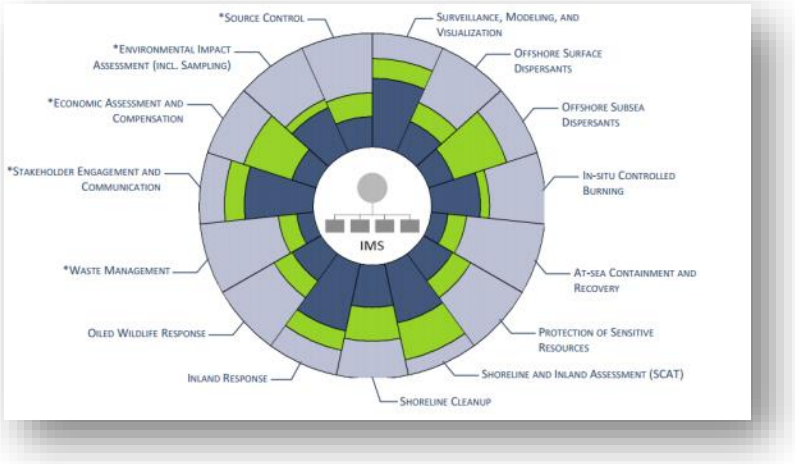
Appraisal/ Screening / Selection





Response Capability Assessment

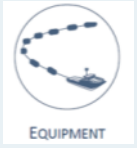
1. **Planning Process**
   - Identify, assess and prioritise oil spill planning scenarios
   - Response strategy
   - Response capability & its requirements
     - IMS
     - Surveillance, modelling, and visualisation
     - Offshore surface dispersant
     - Offshore subsea dispersant
     - In-situ controlled burning
     - At-sea containment and recovery
     - Protection of sensitive resources
     - Shoreline and inland assessment (SCAT)
     - Shoreline cleanup
     - Inland response
     - Oiled wildlife response
     - Waste management
     - Stakeholder Engagement and Communication
     - Economic Assessment and Compensation
     - Environmental Impact Assessment (incl. Sampling)
     - Source Control
2. **Legislation, Regulations and Agreements**
3. **Emergency Response Documents**
   Oil Spill Contingency Plans /Tactical Response Plans /Source Control Plan
4. **Oil Spill Training and Exercise Programme**
5. **Sustainability and Continuous Improvements**



Tiered Capability

Work out your TPR Wheel

Tier 1 Tier 2 Tier 3

Tiered Capability / Resources	Tier 1 – Resources necessary to handle a local spill and/or provide an initial response	Tier 2 – National or regional resources necessary to supplement a Tier 1 response	Tier 3 – Global resources necessary for spills that require substantial additional response
Responders 	• Trained response staff on-site / available for emergencies • OSR trained local contractors	• Dedicated response staff and additional responders provided by mutual aid agreements • Locally sourced workforce supervised by Tier 2 provider	• Dedicated response staff with specialised skills • Tier 3 responders integrate with local and Tier 2 responders
Equipment 	• On-site or locally available, rapid mobilisation • Amount/type commensurate to risk and location factors • Known deployment times • Supporting logistics provided	• Tier 1 resources for initial response PLUS industry response toolbox • Amount/type appropriate for scenarios	• Tier 1 and 2 resources used in initial response PLUS industry's global response toolbox • Amount/type appropriate for potential scenarios
Additional Support 	• Readily available non-specialised equipment, support or technical advice at the time of need	• Designated OSR cooperatives • Specialised Tier 3 services • Cooperation at local/regional government level • Network of additional responders	• Dedicated industry Tier 3 response centres • Government or cooperative Tier 3 capabilities • Network of additional expert responders
Planning Scenarios	• Tank overfill, leaking valve, transfer hose	• Ruptured pipeline, difficult terrain • Spill crossed regional boundaries	• Damaged tanker releasing oil from cargo tank and likely to impact coastline • Accidental discharge of modest oil volume in ecologically sensitive location

Generating a Capability Wheel

Step 1: Click the button to generate a new wheel

Generate new wheel

Step 2: For each category highlight the capacity available or the lack of for Tier 3 and press the Tier 3 button. Repeat the process for each capability to indicate how the required capacity should be met through a combination of the three Tiers.

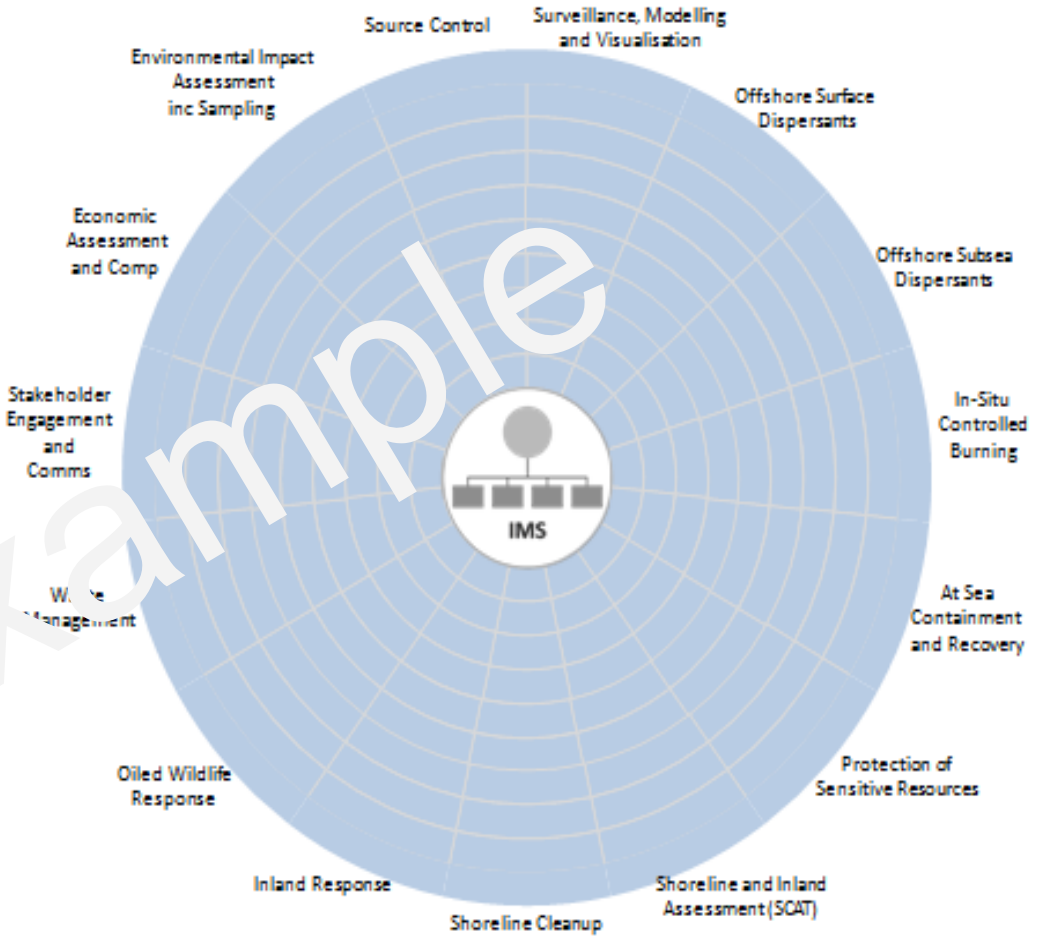
Response Capability	Proportion of required capability from each Tier									
Surveillance, Modelling and Visualisation										
Offshore Surface Dispersants										
Offshore Subsea Dispersants										
In Situ Controlled Burning										
At Sea Containment and Recovery										
Protection of sensitive Resources										
Shoreline and Inland Assessment (SCAT)										
Shoreline Cleanup										
Inland Response										
Oiled Wildlife Response										
Waste Management										
Stakeholder Engagement and Communications										
Economic Assessment & Compensation										
Environmental Impact Assessment including Sampling										
Source Control										

N/A | T1 | T2 | T3

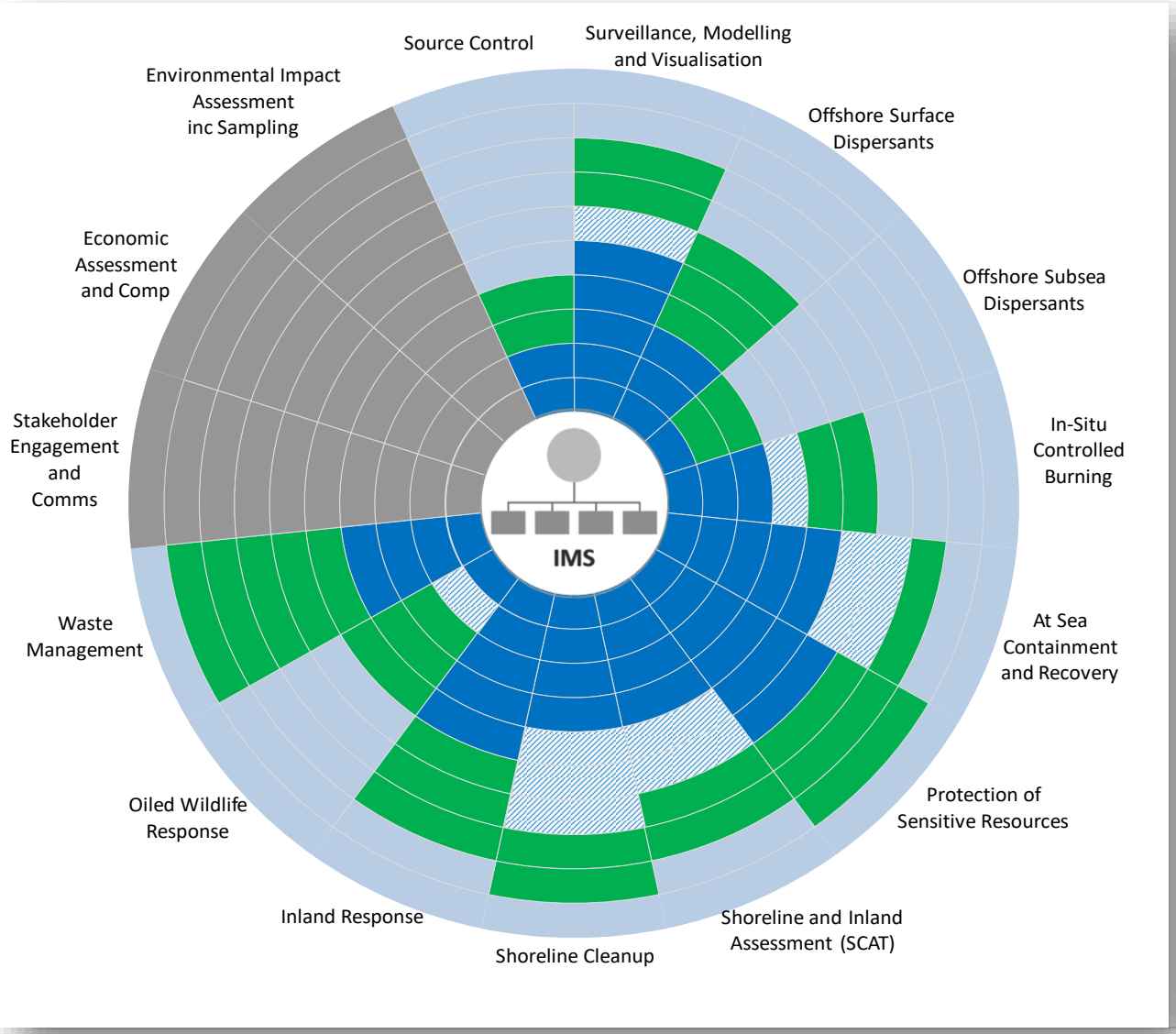
T1 Lack | T2 Lack | T3 Lack

Step 3: Click 'generate my wheel' to visualise how the required spill response capability should be provided through each of the three tiers.

Generate my wheel



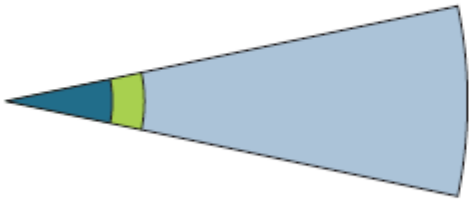
Existing capability level / status reflected on TPR wheel



Tier 1	Tier 1 Lack
Tier 2	Tier 2 Lack
Tier 3	Tier 3 Lack
Out of Scope	

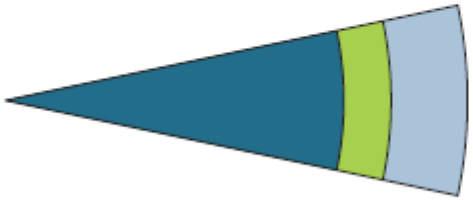
Tiered capability of surface dispersant provision

- Example Scenario 1

	Tier 1	Tier 2	Tier 3
Operation A: This operation can be well served by Tier 3 due to strong logistical links, which have been tested and are robust enough to minimize the need for stronger local or regional capability.			
	Some locally available dispersant capability exists, in this case through vessel-mounted spray systems.	An additional 10 m^3 of dispersant is provided through a mutual aid agreement.	The majority of surface dispersant capability is provided through Tier 3, in this case through wide-area aerial capability and access to large dispersant stocks.

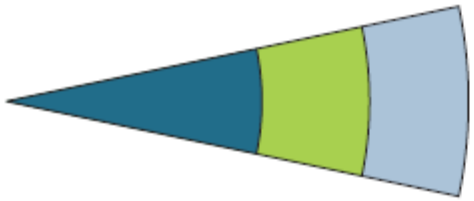
Tiered capability of surface dispersant provision

- Example Scenario 2

	Tier 1	Tier 2	Tier 3
Operation B: This operation is very remote and the logistical framework is uncertain due to weather and political instability. Tier 3 support is available but local conditions have driven a need to build local Tier 1 capability to a level that can mitigate most of the risk.			
	Locally provided dispersant capability through a large pre-positioned stockpile, vessel and helicopter-mounted application systems.	An additional 10 m^3 of dispersant is provided through a mutual aid agreement.	Further stocks of dispersant are available from the Tier 3 provider, in addition to a larger aerial dispersant delivery system.

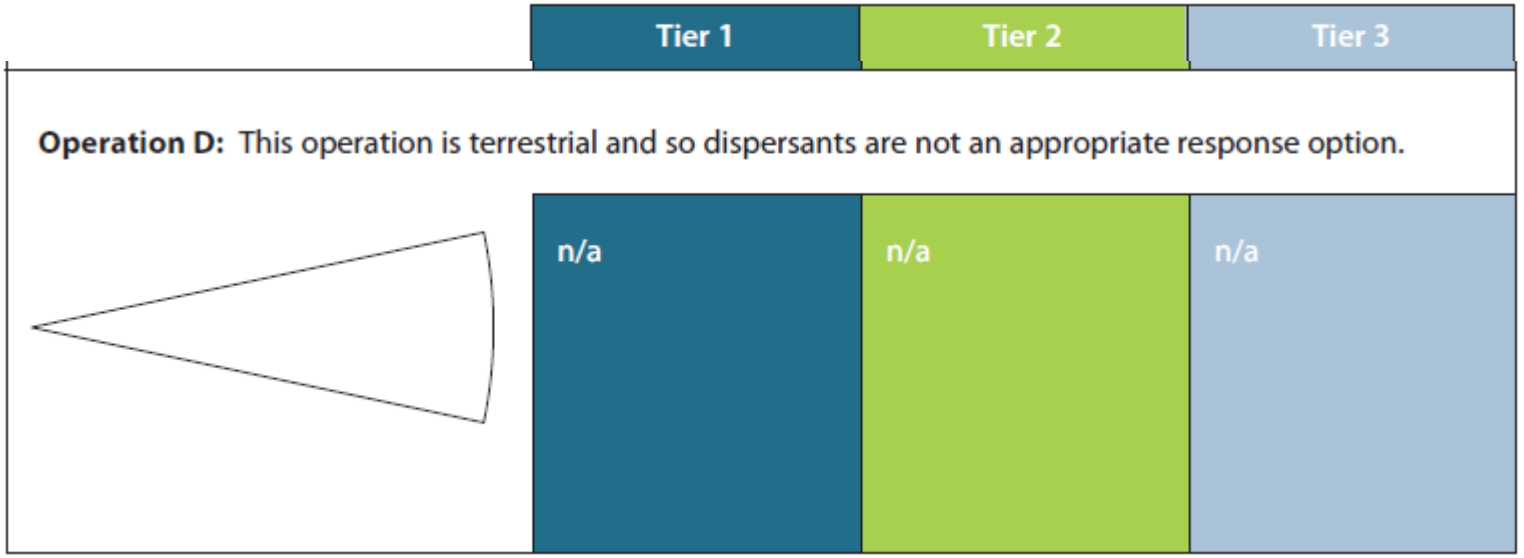
Tiered capability of surface dispersant provision

- Example Scenario 3

	Tier 1	Tier 2	Tier 3
Operation C: This operation is well served by a Tier 2 organization that is close by; however, due to the risk of oiling of sensitive mangrove systems in the vicinity, the rapid first strike Tier 1 capability is bolstered.			
	Robust locally provided dispersant capability through the pre-positioning of vessel mounted application systems in the field.	An additional 100 m^3 of dispersant and a small fixed-wing aerial system is provided through a mutual aid agreement.	Further stocks of dispersant are available from the Tier 3 provider, in addition to a large aerial dispersant delivery system.

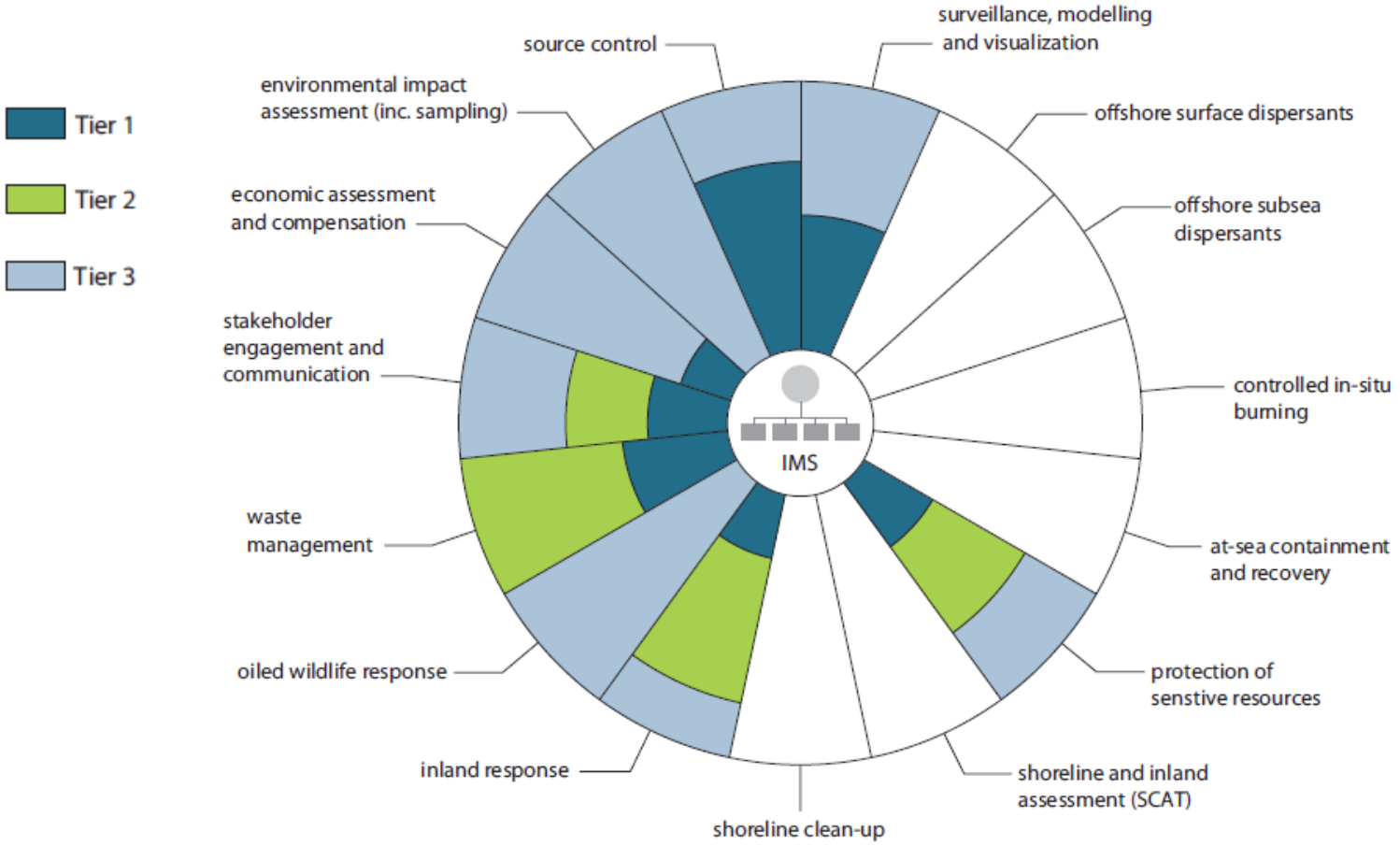
Tiered capability of surface dispersant provision

- Example Scenario 4



Scenario Planning Example

- Illustration: Inland pipeline



SUMMARY

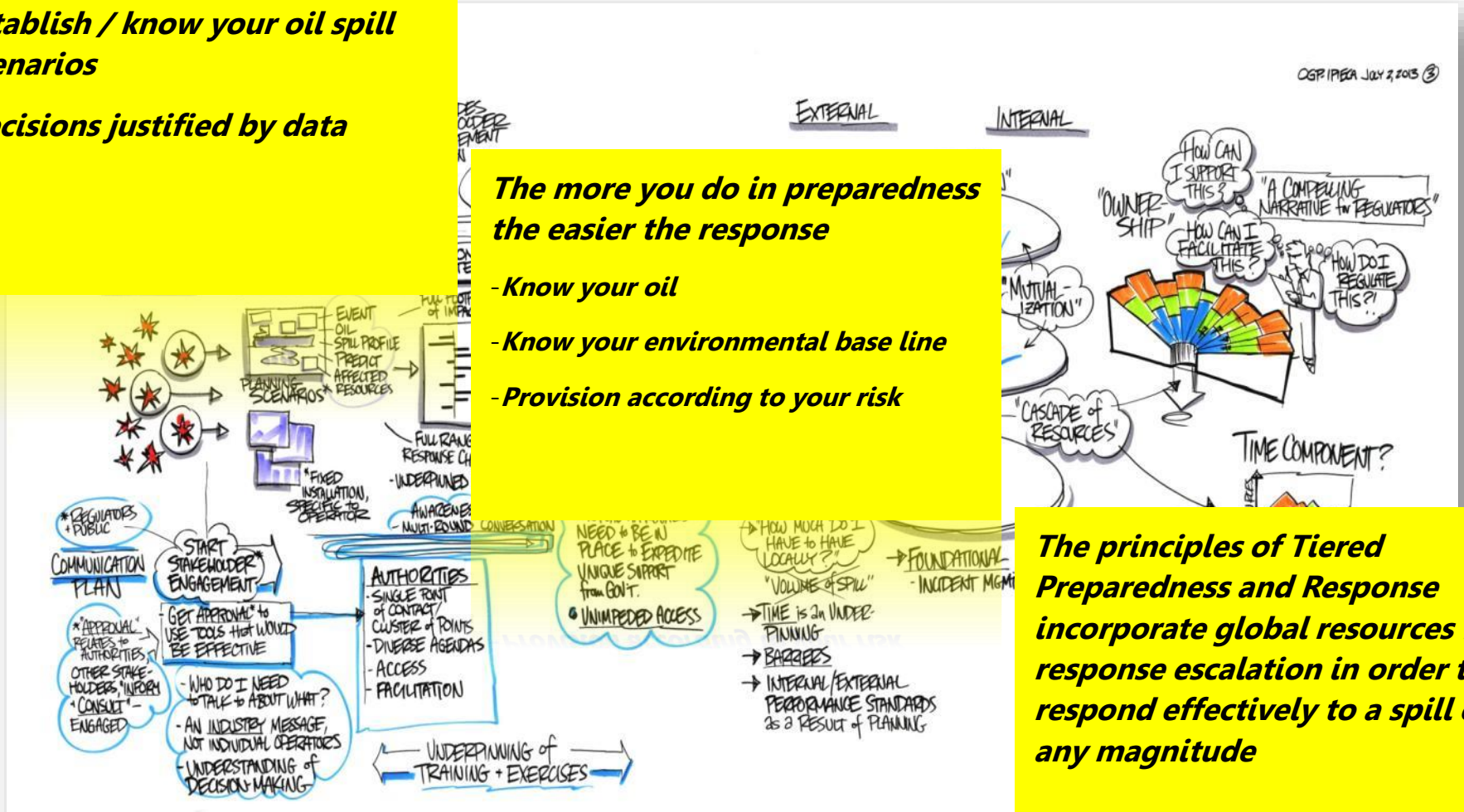
Not one size fits all

Establish / know your oil spill scenarios

Decisions justified by data

The more you do in preparedness the easier the response

- ***Know your oil***
- ***Know your environmental base line***
- ***Provision according to your risk***



The principles of Tiered Preparedness and Response incorporate global resources for response escalation in order to respond effectively to a spill of any magnitude

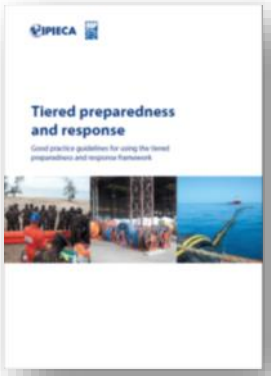
References

"Glance & Scan" Level

- ***PowerPoint Presentation***

OGP/IPIECA JIP Website:

http://oilspillresponseproject.org



"Read" Level

- ***Good Practice Guidance document***

Thank You…….

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Spill preparedness (Technical handbooks and other reference materials)

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