



## Identify and Maintain an Appropriate Response Capability

*Dong Xin, OSRL*

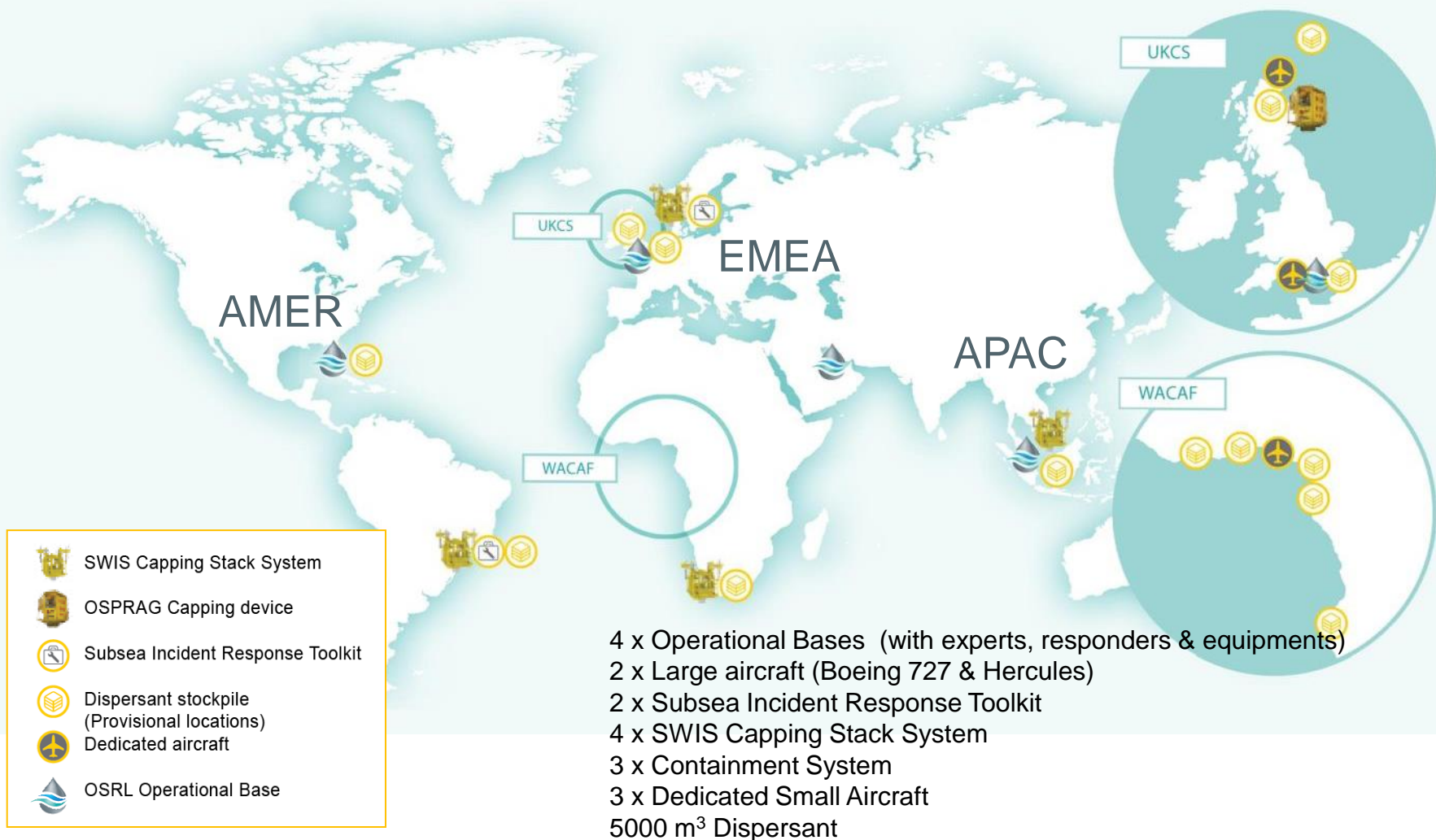
# Oil Spill Response Limited (OSRL)

- ▶ Largest international industry funded cooperative
- ▶ Owned by major oil and gas production / transportation companies
- ▶ Train and respond effectively anywhere in the world



40 + Participate Members & 100+ Associate Members

# Global Response Capability



# What do we do?



## Preparedness



- ▶ Training
- ▶ Contingency planning
- ▶ Oil spill modelling
- ▶ Exercises and drills
- ▶ Equipment hire
- ▶ Personnel Secondments



## Response



- ▶ Technical advice
- ▶ Specialist personnel
- ▶ Equipment and transportation
- ▶ Aerial dispersant application
- ▶ Response integration

# Why Do We Need An Oil Spill Response Capability?

- ▶ <sup>1</sup>World oil supply 97 Million barrels per day
- ▶ <sup>2</sup>Seaborne oil trade accounts for 10 Billion tonne-miles per year
- ▶ Oil spill prevention is working to reduce the volume of oil spilled, but spills still happen
- ▶ <sup>3</sup>The ocean is the greatest supplier of essential resources in the world;
  - Natural services are worth \$21 trillion a year
  - Oxygen for 1 of every 2 breaths we breathe
  - Jobs for 350 million people
- ▶ Our common aim is to protect our shared values!



<sup>1</sup> Source U.S. Energy Information Administration

<sup>2</sup> Source ITOPF

<sup>3</sup> Source World Economic Forum

# The Overall Approach

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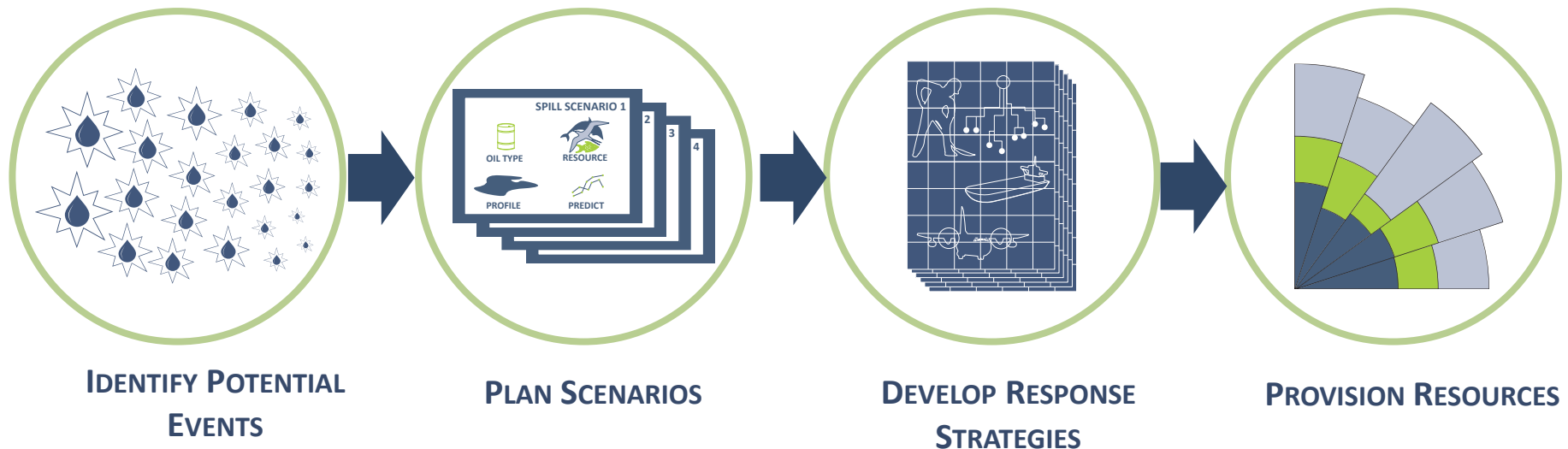
- ▶ How do we identify and maintain appropriate response capability?
  - Risk Based Preparedness Process
  - Tiered Preparedness and Response
  - Overcome Barriers



# Risk Based Preparedness

*Identifying Required Response Capability*

# Risk Based Preparedness Process



Source: JIP Oil Spill Preparedness and Response Framework





## Identify Potential Events

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- What can go wrong?
- Up to and include the credible worst case.
- Site specific.
- Potentially help to identify further prevention measures.

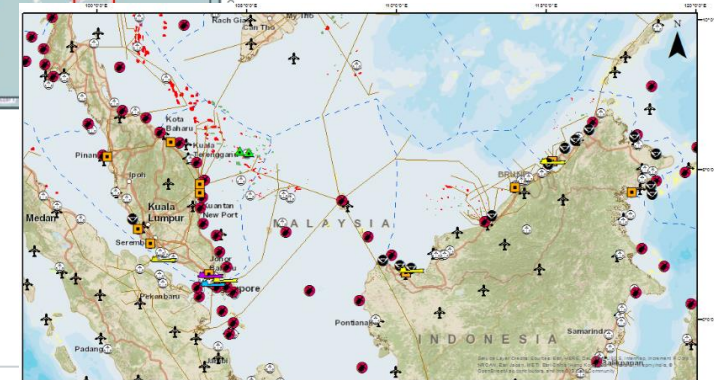
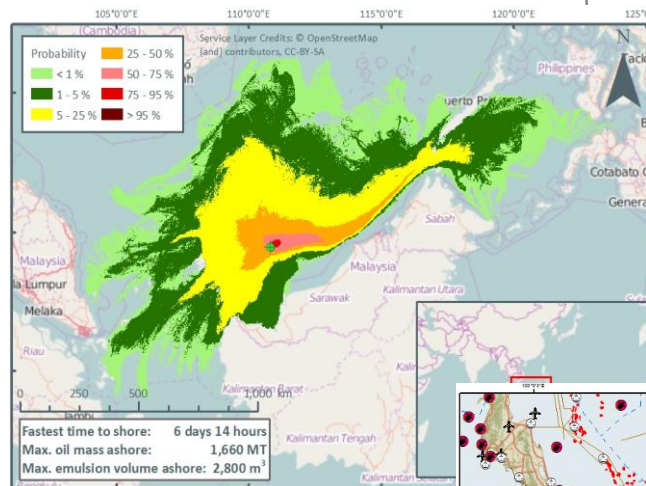
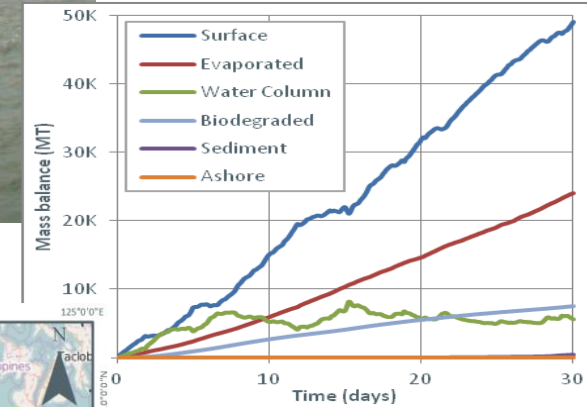
- Small operational/maintenance spills due to minor incidents
- Loss of well control leading to a blowout
- Ruptured flow lines, pipelines, risers, subsea equipment due to earthquake
- Loss of containment due to tank storage failure
- Loss of containment during offloading/transfers/bunkering
- Loss of containment from ship collision
- Loss of containment from ship grounding
- Loss of containment due to explosion

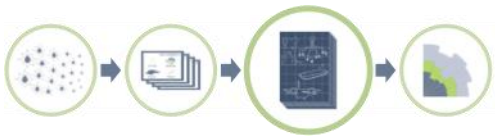
Source: JIP 12 GPG Contingency Planning for Oil Spills on Water



## Plan Scenarios

- What type of oil and how much?
- Where could it happen?
- What are the local conditions?
- Where could the spilled oil go and how might it behave in the environment?
- What impacts could it have and how severe could the consequence be?





## Develop Response Strategies

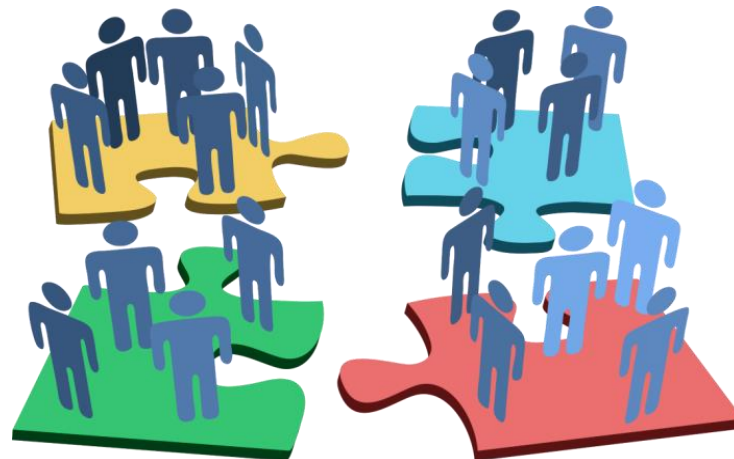
- What techniques are needed?
- How much of each technique is needed?
- What is the response timeframe?
- How will the response adapt over time?
- Strategies are developed for each planning scenario, and incorporate stakeholder engagement.
- Using NEBA as a tool.





## Provision Resources

- ▶ Tiered Preparedness and Response (TPR) principle to arrange resources.
- ▶ Cooperation to bolster one's own capabilities through sharing





# Tiered Preparedness and Response

*Establish Appropriate Response Capability*

# Tiered Preparedness and Response

- ▶ A planning approach to:
  - Define different levels of response capability provision;
  - Not used to define the size or scope of a spill;
  - Plan for suitable resources to be mobilized and cascaded to an incident location efficiently;
  - Enable response escalation for an oil spill of any magnitude.
- ▶ The following resources are considered :



RESPONDERS

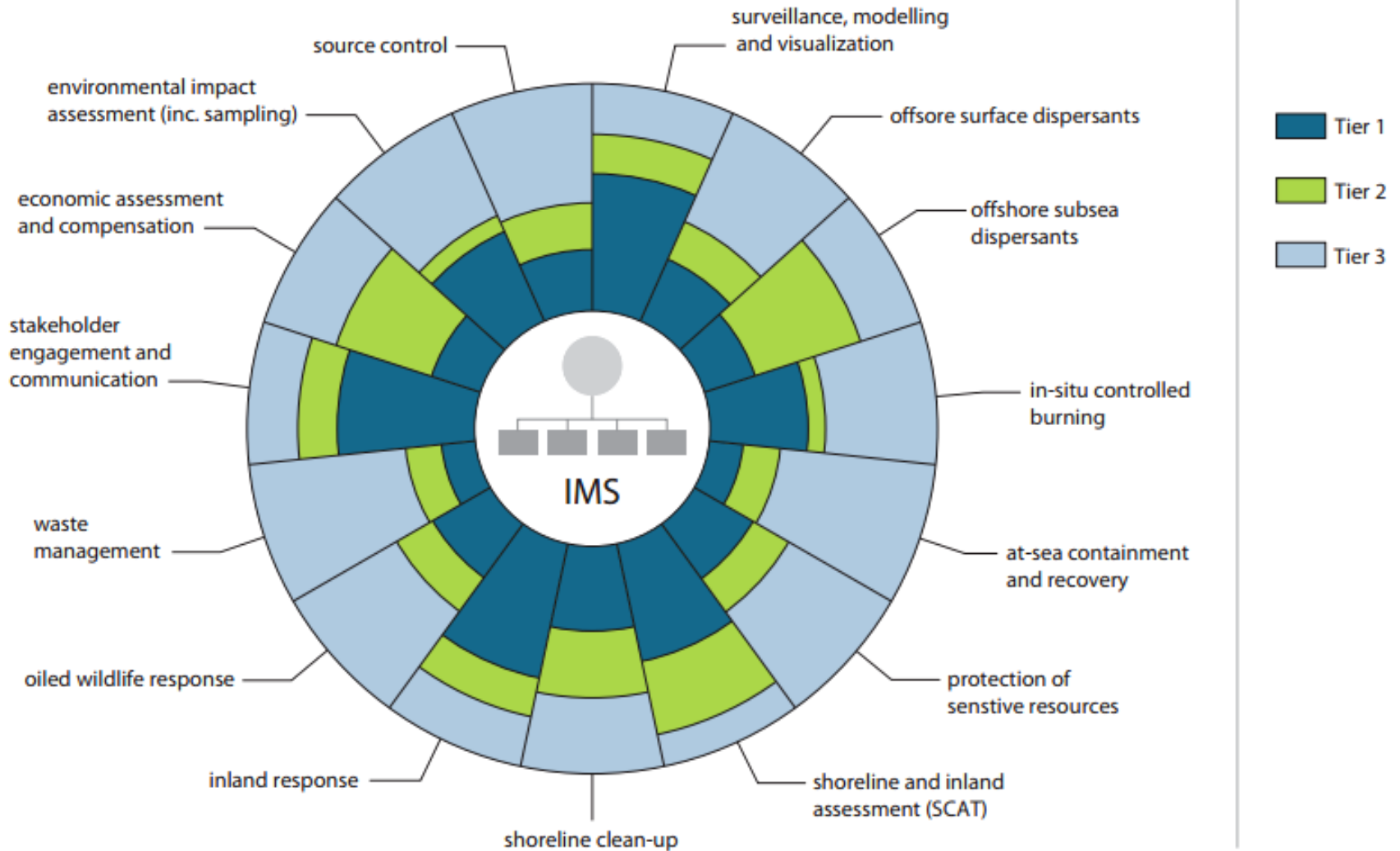


EQUIPMENT



ADDITIONAL SUPPORT

# The Complete Model



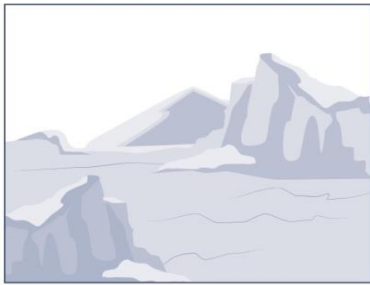
# Tailored Tiered Response

Example: Offshore Surface Dispersants

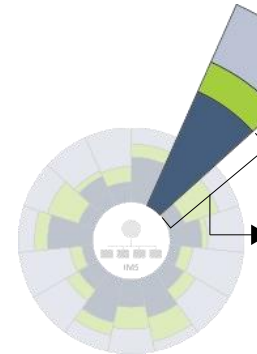
## Location

## Factors

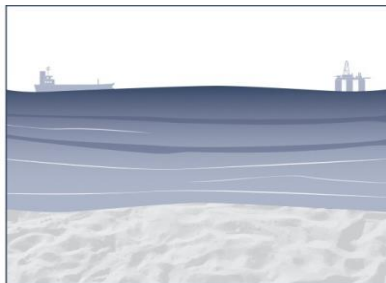
## Dispersant Response



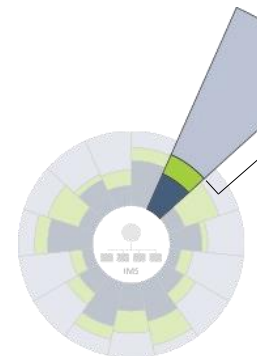
A remote location in a country with access challenges and/or severe weather



Greater local capacity due to limitations of external resources entering the country



A coastal location adjacent to a Tier 3 response center



Greater external support due to ease of access and proximity to Tier 3 response center





# Overcome Barriers

*Maintaining Capability for Success*

# Common Barriers and Targets for Success

## **Underestimating the magnitude of the problem**

- ▶ Underestimating the volume of oil spill, or the scale of the response required
- ▶ Prudent over-response is required

## **Not wanting to escalate or ask for help**

- ▶ A proactive culture is required involving trust within organisations
- ▶ Secure collaboration in industry, between industry and government and between governments:
  - Encourage cooperation
  - Mutual assistance

# Common Barriers and Targets for Success

## Not considering all response options

### ► Net Environmental Benefit Analysis

- All applicable response options should be considered
- Select only response options to minimize impacts
- Engage with stakeholders
- Where possible difficult decisions should be made prior to an incident



# Common Barriers and Targets for Success

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## **Lack of familiarity and understanding**

- ▶ All personnel should be appropriately trained and competent to perform the required role
- ▶ Response capabilities should be regularly exercised and tested;
  - Exercises should be carried out and involve all parties
  - Lessons identified should be captured and actioned, making them lessons learnt

# Common Barriers and Targets for Success

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## **Protracted immigration and customs clearance**

- ▶ Key stakeholders such as customs and immigration should be:
  - Consulted and made part of the solution
  - Involved in exercises
- ▶ Legitimate process to expedite clearance should be understood and tested
- ▶ Logistical plans should be drawn-up covering mobilisation through to demobilisation



# A Case Study

# Case Study – 2013 Rayong Spill

- ▶ Time: 27 July 2013
- ▶ Location: Rayong, Thailand
- ▶ Source: leak from single buoy mooring (SBM) hose
- ▶ Oil spill: 50 tonnes - Oman Export Blend Crude
- ▶ Sensitivities: Ko Samet – Tourist beach



# Tiered Capability in a Response

Response Options	Tier 1 & 2	Tier 3
Source control	By incident owner	-
Surveillance modelling and visualization	Aerial surveillance	Trajectory Modelling
Offshore dispersants	Vessel dispersant application	OSRL Hercules: Aerial dispersant application
At-sea containment and recovery	Tier 1/2 response personnel and equipment, VOOs	-
Shoreline Assessment (SCAT)	-	SCAT Team
Shoreline cleanup	Thai military personnel, and local contractors	-
Waste management	Local contractors	-



# Summary - How Can We Plan for Success

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- ▶ Provide resources and capability against the risks
- ▶ Apply Tiered Preparedness and Response to promote collaboration and partnership
- ▶ Involve all relevant stakeholders and overcome common barriers together

# Thank you - Stay in touch

[www.oilspillresponse.com](http://www.oilspillresponse.com)

## Subsea Well Intervention Service

- ▶ [www.swis-oilspillresponse.com](http://www.swis-oilspillresponse.com)  
[subseaservices@oilspillresponse.com](mailto:subseaservices@oilspillresponse.com)

## Training courses

- ▶ [www.oilspillresponsetraining.com](http://www.oilspillresponsetraining.com)  
[training\\_uk@oilspillresponse.com](mailto:training_uk@oilspillresponse.com)  
[training\\_sg@oilspillresponse.com](mailto:training_sg@oilspillresponse.com)

## Spill preparedness (Technical handbooks and other reference materials)

- ▶ [osrl.cotoco.com](http://osrl.cotoco.com)  
[preparedness@oilspillresponse.com](mailto:preparedness@oilspillresponse.com)

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