



PRACTICAL ASPECTS OF A NOSCP

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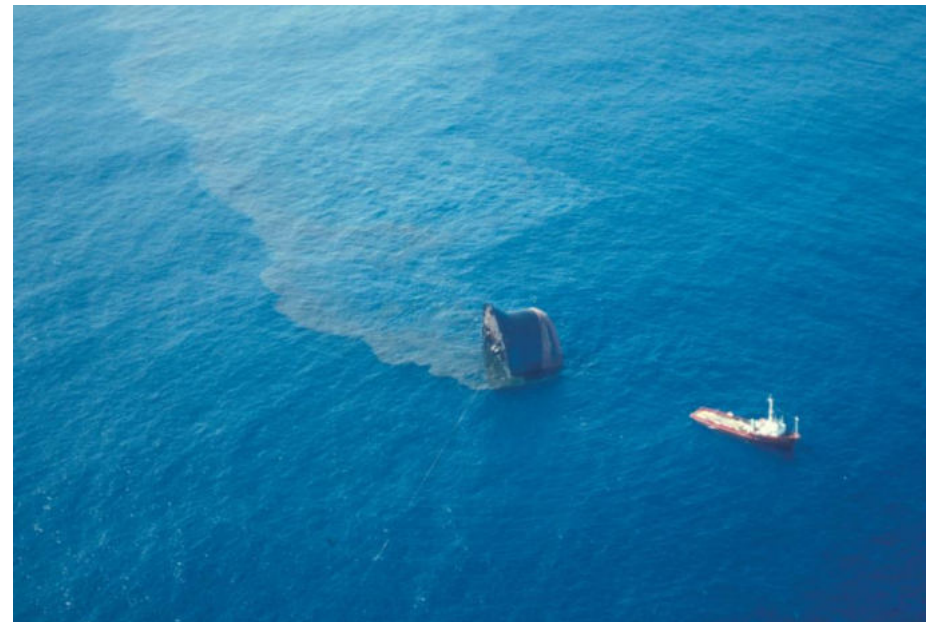
Technical Adviser

GI WACAF Webinar

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- Annexe Contents
- Co-operation with Oil Industry
- Specialist Expertise Capabilities
- Sensitivities
- Logistics
- Response Strategies
 - At-Sea Response
 - Shoreline Protection
 - Shoreline Clean-Up
- Waste Management
- Wildlife Response
- Training and Exercise



ITOPF is a not-for-profit, scientific advisory organisation based in London but active globally.

Technical services include:



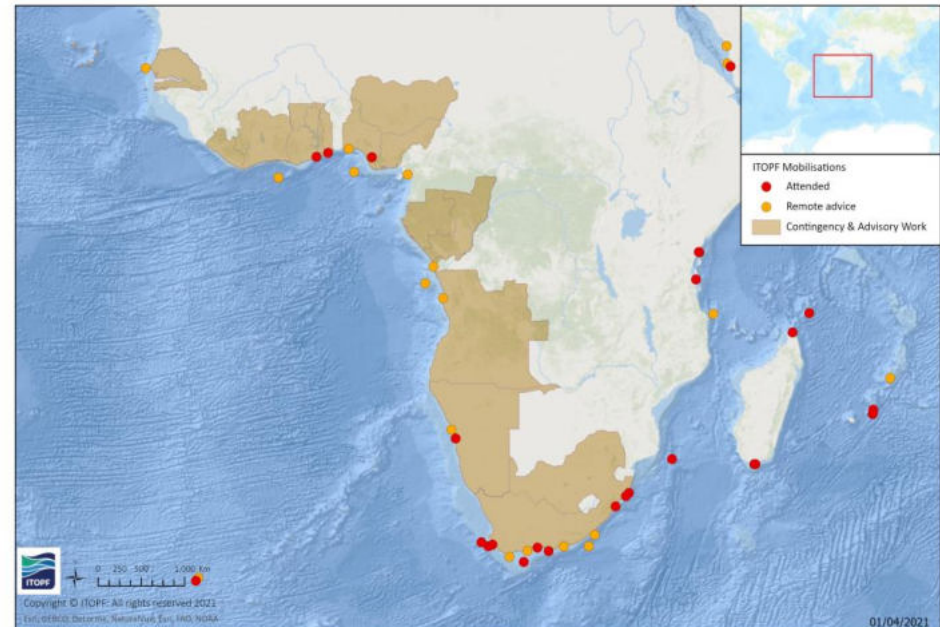
ITOPF & GI WACAF



ITOPF has been working alongside the GI WACAF Project for 11 years.

ITOPF has attended multiple workshops and hosted table-top exercises in many GI WACAF countries in subjects such as:

- Oil spill preparedness and response
- Waste management
- International co-operation and legislation
- Wildlife response
- Aerial surveillance
- Shoreline clean-up



ANNEXE CONTENTS

- Contact details for relevant government authorities, response organisations and technical experts
- Inventory of available resources and contact details of operators
- Contact details of third-party suppliers of materials and services (PPE and waste contractors)
- Sensitivity mapping, shoreline types and priorities for protection
- Access routes and waste storage / disposal sites
- Guidelines for dispersant use in different areas
- Guidelines for use of preferred response techniques, including boom deployment plans
- Logistical support (e.g., accommodation, catering and security for workforce)
- Example forms for recording expenditure
- Sources of funding and compensation

Information Directory

Operational references

- Contact details and remit of relevant government agencies and other response organisations
- Inventory of available resources and contact details of operators
- Contact details of third party suppliers of materials and services
- Sensitive area maps
- Restrictions on dispersant use

Sample documents

- Example equipment charter and hire agreements
- Sample pro-forma daily aerial, at-sea and shoreline progress reports
- Example forms for recording expenditure

Supplementary information

- List of approved response products
- Guidelines for observation and recording oil at-sea and on shore
- Guidelines for use of preferred response techniques, including booming plans
- Guidelines for sampling and for monitoring contamination levels
- Sources of funding and compensation
- Information necessary to expedite cost recovery
- Legislation stating statutory powers of the plan holder

CO-OPERATION WITH OIL INDUSTRY

- Co-operation between all parties (government authorities, oil industry and technical experts) during planning and operational phase of NOSCP is crucial for a successful response
- List of oil industry's capabilities should be included in NOSCP
 - Oil spill response equipment stockpiles / availability
 - Non-specialist machinery availability (e.g., excavators, workforce)
- Compatibility between oil industry's contingency plan and the NOSCP should be sought
- Oil industry representatives should be present during training exercises to ensure that roles and responsibilities are understood
- Clarification of agreement should be sought for the provision of oil industry assets in the event of a spill not under their liability
- Agreed contractual terms for oil industry-owned equipment could be appended to NOSCP



ExxonMobil



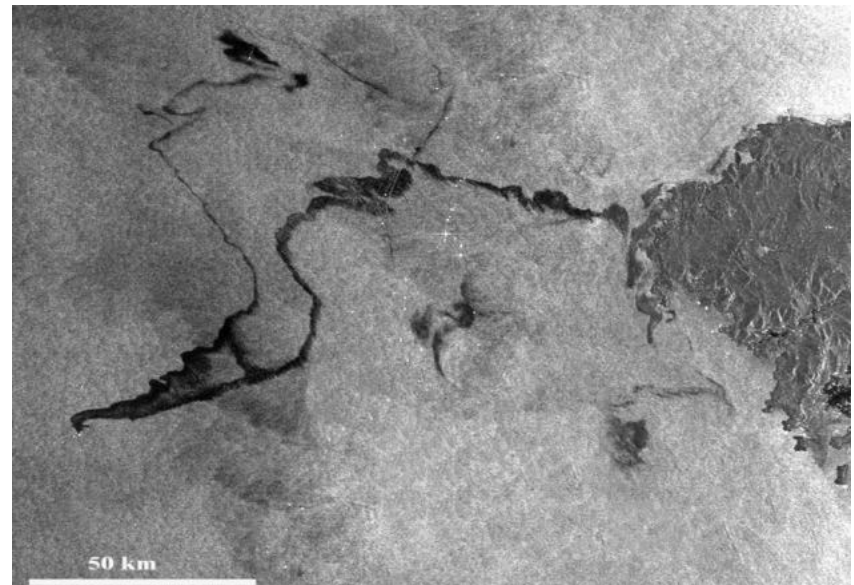
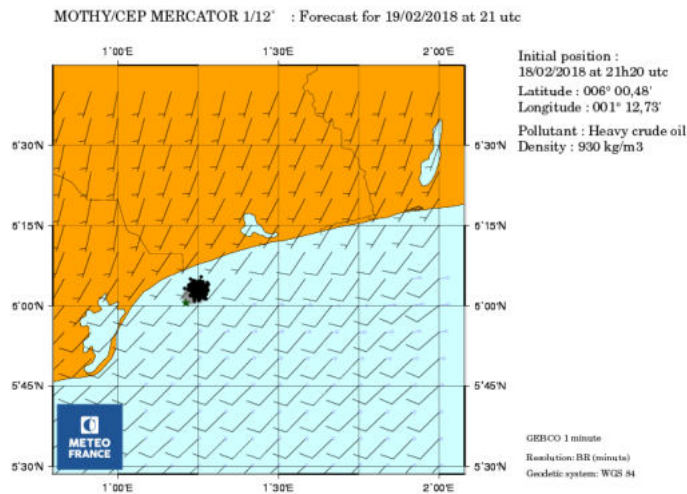
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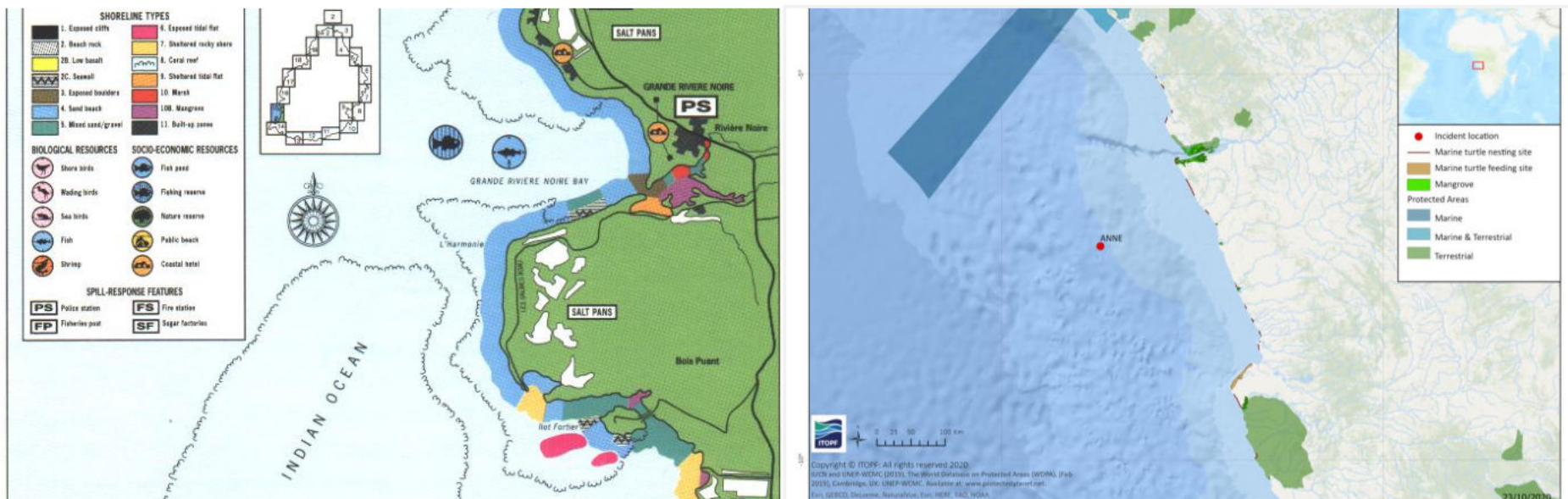


- NOSCP should contain:
 - Trajectory modelling / remote sensing capabilities (e.g. WebGNOME, Sentinel)
 - Technical expertise available (e.g. consultants, specialist responders)

- The reader should be able to rapidly find list of expertise to contact in the event of an incident

- Capabilities should be divided into:
 - National
 - Regional
 - International





- A NOSCP should contain maps with locations of different habitats/shoreline types/sensitive areas.
- Reader can quickly establish affected areas and appropriate measures to be taken
- Crucial to prioritising areas of high environmental and economic sensitivity
- If resources are limited – prioritisation is key
- Seasonal variation can greatly alter protection priorities

ACCESS TO SHORES

- Shoreline accessibility is crucial for responders
- Accessibility should be included in sensitivity mapping
- Big difference between theoretical and physical clean-up operations
- Shorelines inaccessible to machinery
- Presence of large logs on-shore preventing vehicular access (common in Gulf of Guinea)
- Hazardous shorelines for personnel to navigate



TYPES OF SUBSTRATE

Different types of substrate provide different clean-up challenges

ROCKY SHORE

- Difficult to access
- Mechanical equipment unable to assist
- Manual recovery of oil is primarily used

SANDY SHORE

- Easier to access with multiple entry points for vehicles and mechanical equipment

PORT

- Easily accessible with mechanical equipment usually already present



- Makes up a large area of African coastline
- Highly productive and biodiverse tropical soft-sediment habitat
- Mangroves should be designated as a **priority area** in NOSCP

Clean-up considerations

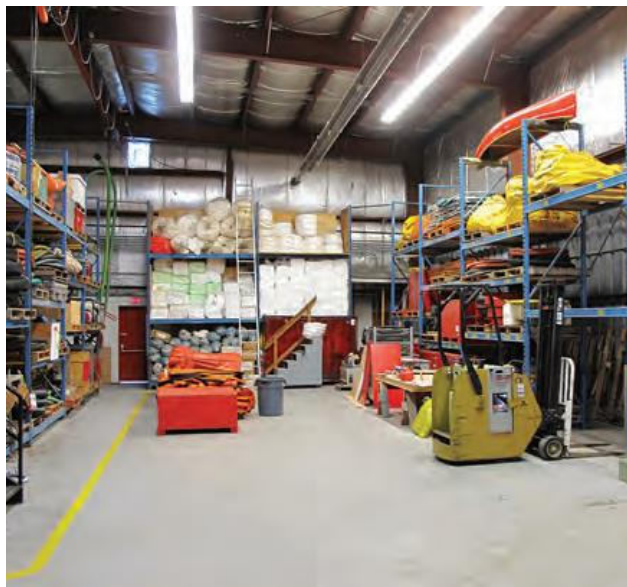
- Areas may be difficult to access – low bearing capacity of soft-sediment
- Use of machinery **not appropriate** for this shoreline type
- Potential for response to cause more damage than oil spill due to trampling and disturbance of the mangrove



ECONOMIC SENSITIVITIES - FISHING

- Important part of African economy and livelihoods
- Crucial areas that should be included in sensitivity mapping
- 'No use zone' for dispersants should be detailed in NOSCP in areas close to fisheries
- Authorities responsible for seafood safety should work through contingency arrangements, such as criteria under which fishing restrictions would be imposed / lifted





The NOSCP should contain the following logistical information:

- Marine assets available and mobilisation times
- List of relevant contractors available nationally
- List of equipment suppliers
 - Including non-oil spill response equipment (construction / agricultural machinery)
- Oil industry assets available
- International assets available (co-operation agreements)

RESPONSE STRATEGIES

- Dependent on phase/nature of the oil spill
- Dependent on type of oil spilled
- Should be divided into:
 - At-sea response – emergency phase
 - Shoreline protection – emergency phase
 - Shoreline clean-up – operational phase



Supporting information required in NOSCP

- Policies for dispersant use and in-situ burning
- List of permitted dispersants and availability
- Vessel / aerial application availability
- Weather conditions suitable for dispersant use

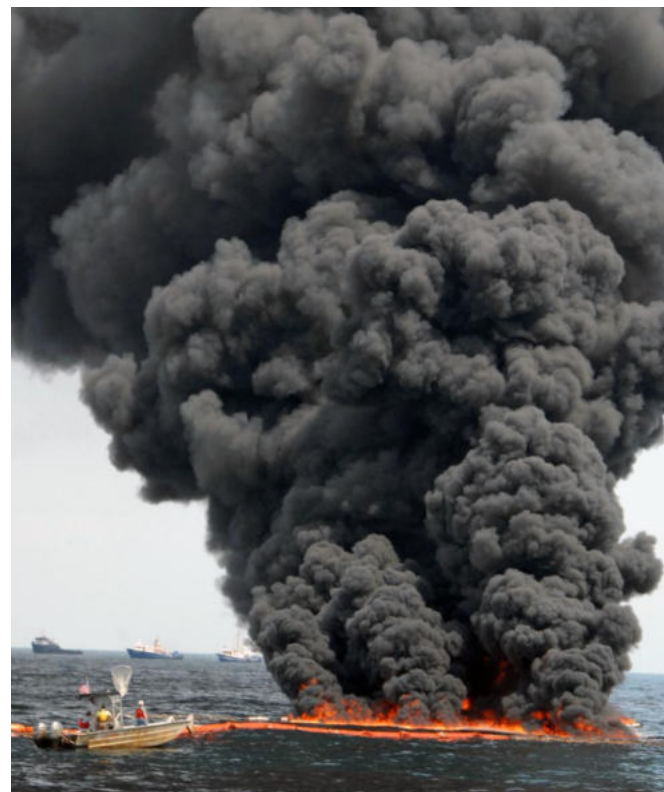
At-sea response linked with sensitivity mapping

- Reader should be able to quickly identify if spill is located in dispersant-permitted area
- If in sensitive environment – dispersant banned

Supporting information required for in-situ burning

- Type of oil suitable for in-situ burning
- Fire boom resources / stockpile availability

Limitations of at-sea response techniques need to be clearly stated in NOSCP



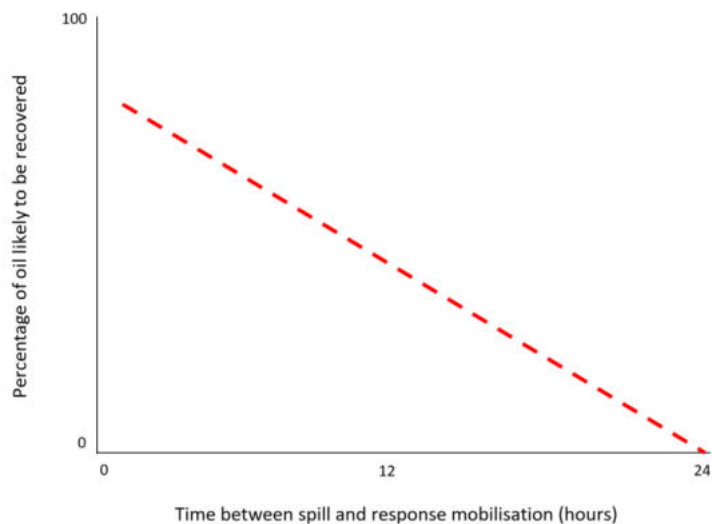
AT-SEA RESPONSE – CONTAINMENT & RECOVERY

Supporting information required in NOSCP

- Suitable type of oil
- Suitable weather conditions
- Oil spill response vessel availability
- Boom / skimmer equipment availability

Limitations need to be clearly stated in NOSCP

- Longer mobilisation time = increased spreading of oil and reduced containment efficacy





- Unlikely that all the resources at risk can be defended successfully
- Essential to consider extent to which defence and protection of resource is practicable
- Deployment plan is required for each boom to ensure rapid sealing off of priority areas
- Regular training/exercises are essential for testing speed and efficacy of boom deployment plan
- Supporting information required for shoreline protection planning:
 - Boom stockpiles available / condition / location
 - Boom deployment plans
 - Weather conditions in which boom deployment would be ineffective

Step 1: Shoreline surveys to gather information

- Aerial surveillance / boat surveys / ground truthing on shoreline undertaken
- Identify oil extent / characteristics / shoreline type / access issues

Step 2: Prioritisation of sites / trade offs

- Priority areas should be easily accessible from sensitivity map within NOSCP
- Seasonal variability of priorities taking into account

Step 3: Selection of clean-up techniques

- Dependent on substrate type / access issues
- Contact details for clean-up personnel (government / army / fire brigade / local manpower)
- List of PPE providers and logistics of PPE distribution to workforce

Step 4: Execution of operations

- Delineation of shoreline into sections and division of workforce into teams
- **Phase 1**: bulk / mobile oil removal
- **Phase 2**: buried / residual oil removal

Step 5: Re-assessment and termination

- Endpoints established at the beginning of the clean-up
- Surveys with relevant parties to agree on termination of clean-up operations

SHORELINE CLEAN-UP TECHNIQUES

Sites		Expo- sure	Manuel recovery	Low pressure flushing	Mechanical screening	Hot water high pressure	Concrete mixer	Recovery of effluents
Harbour facilities	Quay	+	+	+	+	+	+	+
		-	+	+	+	+	+	+
	Riprap	+	+	+	+	+	+	+
		-	+	+	+	+	+	+
Rocks	Cliff	+	+	+	+	+	+	+
		-	+	+	+	+	+	+
	Reef flat	+	+	+	+	+	+	+
		-	+	+	+	+	+	+
	Boulders	+	+	+	+	+	+	+
		-	+	+	+	+	+	+
Beach	Shingle	+	+	+	+	+	+	+
		-	+	+	+	+	+	+
	Coarse sand	+	+	+	+	+	+	+
		-	+	+	+	+	+	+
	Fine sand	+	+	+	+	+	+	+
		-	+	+	+	+	+	+
Marsh		-	+	+	+	+	+	+

 to be given priority consideration
 may be useful
 to be considered under certain conditions
 inappropriate
 fluid to slightly viscous oil
 viscous to highly viscous oil

Initial clean-up techniques

Source: CEDRE

Sites		Expo- sure	Leave alone	Skimming Pumping	Mechanical collection	Manual recovery	Mechanical screening	Flushing	Flooding	Nets
Harbour facilities	Quay	+	+	+	+	+	+	+	+	+
		-	+	+	+	+	+	+	+	+
	Riprap	+	+	+	+	+	+	+	+	+
		-	+	+	+	+	+	+	+	+
Rocks	Cliff	+	+	+	+	+	+	+	+	+
		-	+	+	+	+	+	+	+	+
	Reef flat	+	+	+	+	+	+	+	+	+
		-	+	+	+	+	+	+	+	+
	Boulders	+	+	+	+	+	+	+	+	+
		-	+	+	+	+	+	+	+	+
Beach	Shingle	+	+	+	+	+	+	+	+	+
		-	+	+	+	+	+	+	+	+
	Coarse sand	+	+	+	+	+	+	+	+	+
		-	+	+	+	+	+	+	+	+
	Fine sand	+	+	+	+	+	+	+	+	+
		-	+	+	+	+	+	+	+	+
Marsh		-	+	+	+	+	+	+	+	+

 to be given priority consideration
 may be useful
 to be considered under certain conditions
 inappropriate
 fluid to slightly viscous oil
 viscous to highly viscous oil

Final clean-up techniques

Simple but effective matrix to predict most effective clean-up techniques by shoreline type

Allows the reader to quickly assess what clean-up methods can be used according to the substrate type

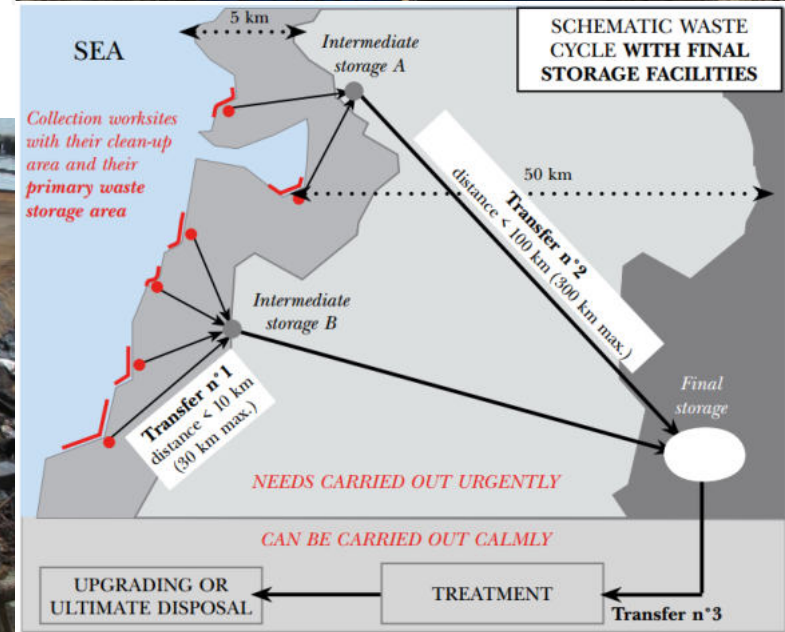
WASTE MANAGEMENT

Waste logistics

- Initial storage / segregation of waste streams
- Licensed waste transporters procured
- Intermediate and final storage areas identified

Waste treatment / disposal / reuse

- Licensed waste treatment sites identified
- Environmental and legal considerations for waste reuse / recycling
- Different disposal routes per waste streams





- A wildlife response plan should be incorporated into the NOSCP
 - Euthanasia – routinely undertaken to reduce suffering by some countries
 - Rehabilitation – capture, cleaning, treatment and release undertaken by other countries
- NOSCPs should contain contact details for vets / specialist care organisations as well as regional and international assistance
- At local level, existing/potential treatment centres should be identified
- Contact details for suppliers of equipment and feed should be included



- A timetable for training and exercises needs to be set out in the NOSCP
- Training programmes should be for:
 - Marine response teams
 - Shoreline response teams
 - Interested parties
- Regular and realistic exercises:
 - Ensure contingency arrangements function properly
 - Test roles and responsibilities to ensure they are understood
 - Assess equipment's availability and performance
 - Ensure contact details are up to date



Thank you for listening – any questions?

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