SOUTH ASIA REGIONAL ENVIRONMENTAL SECURITY FORUM

TABLE-TOP EXERCISE SUMMARY

Co-Sponsored by: | Maldives National Defence Force and the U.S. Pacific Command

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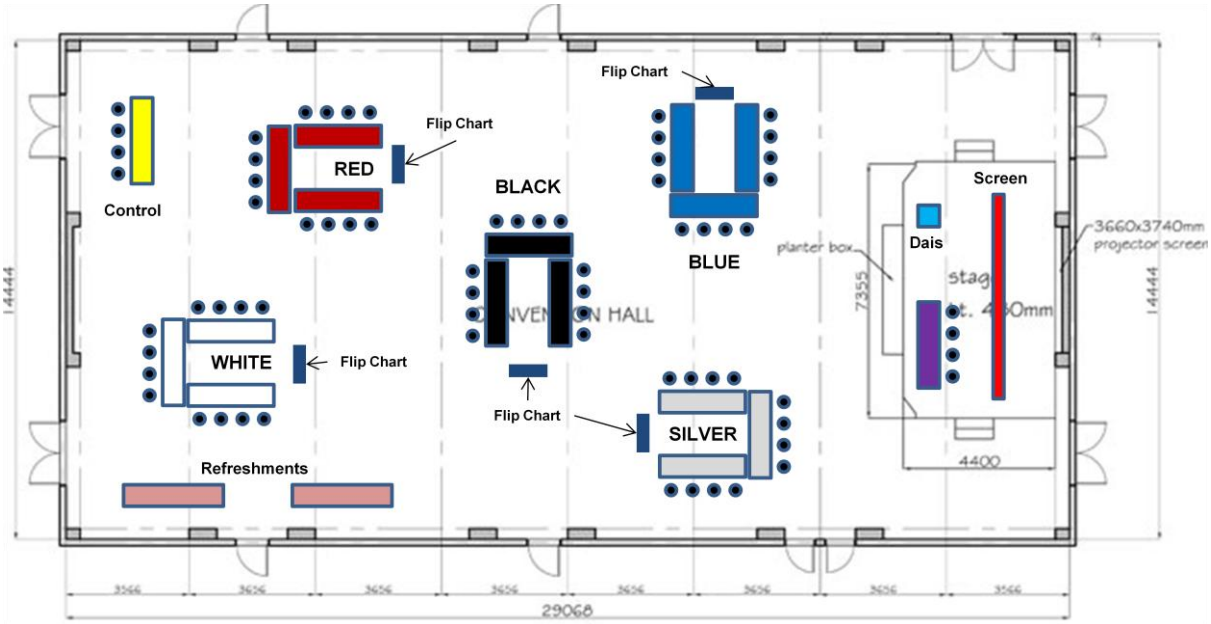
EXECUTIVE SUMMARY

The South Asia Regional Environmental Security Forum (RESF) Table-Top Exercise (TTX) was conducted on 04 June 2014. The main objective of the TTX was to evaluate how regional South Asia partners could work together to overcome an environmental disaster impacting their shared marine environment. Injections were developed to examine all four major RESF themes, including water, energy, waste management, and resource protection.

Before the TTX commenced, participants were divided into five work groups. The TTX was planned to maximize interoperability and coordination by having seat assignments arranged with as much diversity as possible. This included dividing participants by their subject matter expertise, rank, country of origin, sex, etc. Each work group was color-coded. The colors were Black, Blue, Red, Silver and White. The room configuration was:



The TTX commenced with a member of the Control Group taking the stage and explaining the instructions for the TTX. The instruction and themes were presented via Microsoft PowerPoint, and shown on a large screen visible to everyone. Upon conclusion of the instructions, the exercise scenario was then read aloud to all participants. The TTX then started shortly afterwards.

Injections were delivered by the Control Group to the work groups using the following methods"

1. The injections were shown on a large screen in the front of each work group room.

2. The injections were printed and hung on easel boards adjacent to each work group.

3. The injections were printed in the event booklet, and participants could flip to the TTX section to view the information.

The injections were delivered in two phases, and each phase ran for one hour. The first phase focused on initial response to cleaning up fuel and industrial chemicals spilled into the ocean as a

result of a shipwreck. The second phase featured injections on recovering from the shipwreck, and mitigating future incidents.

The same injections and questions were presented to each of the five work groups. There were approximately two injections per phase of the discussion. Each work group had to consult amongst their members to answer the associated questions. Facilitators were present in each work group to assist with the process and explain the details of the questions. The facilitators were:

GROUP	FACILITATOR 1	FACILITATOR 2
RED	Dr. Ari Nathan (STATE)	CPT Hassan Amir (MNDF)
BLUE	Ms. Nicole Griffin (MARFORPAC)	CPT Ibrahim Ashraf (MNDF)
WHITE	Col Kevin Thomas (USPACOM)	CPT Mohamed Nadheem Ibrahim (MNDF)
BLACK	Mr. Kawakahi Amina (USPACOM)	FLT Ibrahim Thaufeeq (MNDF)
SILVER	Ms. Michelle Haynes (USACE)	FLT Ahmed Moomin (MNDF)

Each work group had approximately 30 minutes to collectively work through an injection and prepare answers to the questions posed. Responses to inject questions were recorded by a work group member or facilitator, and it was written on the easel paper provided. If a work group facilitator felt that his/her work group needed more time responding to an injection, then the work group was allocated additional time. When answering an injection question, the goal was not to see how quickly each question could be answered. Rather, the goal of each injection was to spark collaborative dialog and seek common goals to solving regional maritime protection challenges.

The phases of the discussion were broken up by one break so that participants did not become overwhelmed by the questions.

At the end of the TTX, a short After-Action Review (AAR) was conducted by all work groups. Work groups were given 15 minutes to prepare a summary of their responses to the injections. Facilitators for each work group identified a spokesperson, and this spokesperson briefed the work group results to all participants. Each work group outbrief lasted no more than 5-10 minutes. The final responses have been recorded in this summary for future reference.

SCENARIO

South Asia
Regional Environmental Security Forum

Narrative

On the open sea to the east of the Maldives, a large container vessel is tilling a path through the massive expanse of water. The ship sways in a laborious and methodical fashion, with its passengers in the doldrums of given the oppressive June heat. Routine checks are performed, and the ship's captain seems satisfied with the melancholy approach. The crew is fatigued and weathered by the length of the trip. It has been one month since the comfort of their last call. Occasionally, a glimpse of land emerges in the distance, but the mirage fades under the brilliant sun.

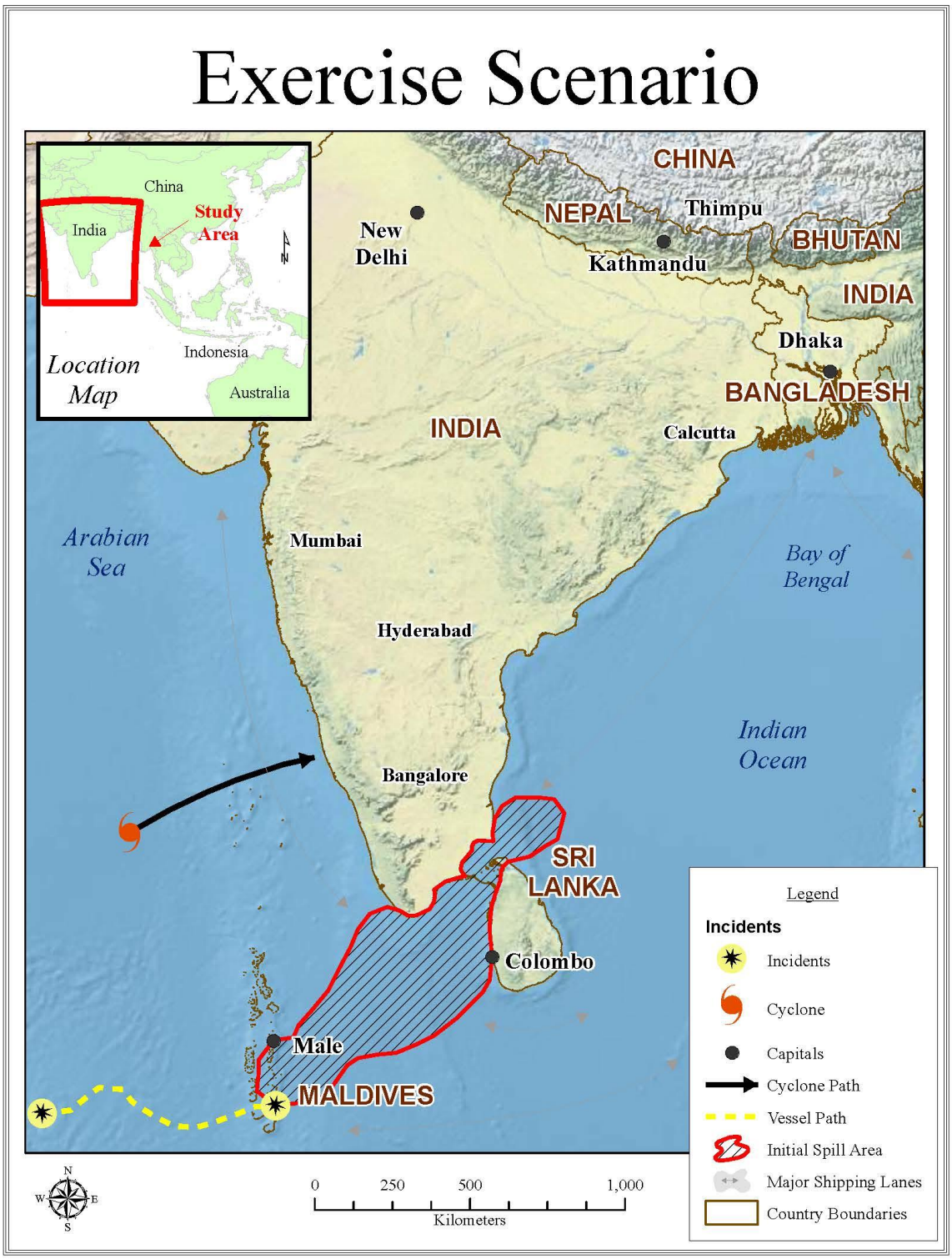
In the distance, two small boats are seen racing towards the ship. The boats jump rhythmically out of the water like fish surfacing for air. Whitewash surrounds the boats, indicating their determination to catch the container ship. As the speeding boats near, the captain remains unaware of their approach. The emptiness that has obscured his view the past 30 days seems to have also retarded his ability to comprehend the new threat. Suddenly, the two boats approach the container ship, and the armed men rapidly board the ship like ants climbing a fruit tree. The container ship crew is startled by the occupation, and before they can react, they are held at gunpoint. The marauders make their way to the ship's navigation deck, and take the captain and his crew hostage. They command the vessel and quarantine the crew in the berthing room, in hopes for a hefty ransom.

With full control of the container ship, the pirates begin to steam towards the Maldives. The unfamiliar controls leave the pirates preceding forward in a reckless manner. The ship slaps against the ocean in thunderous claps that jostle loose the cargo. Suddenly, components of the ship's payload launch into the ocean like dogs unleashed after days of confinement. Containers of industrial detergent pour overboard and deposit into the abyss. The pirates are unable to control the ship's movement, as more and more containers fall overboard. In an attempt to gain control, the pirates flail feverishly at the controls. They have now become dangerously close to a patch of isolated reef, and crash into the submerged hazard. The ship jerks to its starboard, pouring out fuel and oil from its damaged hull. The remaining industrial containers

tumble into the water. Quickly, the ship begins to take on water as pollutants cover the reef and enshroud the marine life.

In the chaos, the pirates abandon ship in a small lifeboat. The original crew remain locked in the berthing room, fatigued and injured from the accident. Eventually, the crew free themselves from confinement, evaluates the situation, and decides that the damage is too severe to manage alone. The captain orders them to a remaining lifeboat, and they abandon ship through the polluted water. The captain remains with the crippled ship, as it sways in the surf. To compound matters, a cyclone is expected to make landfall in India soon, which will accelerate the currents, and the spill, into the Bay of Bengal and towards Bangladesh. An environmental disaster is imminent, impacting the countries of India, the Maldives, Sri Lanka and Bangladesh.

MAP


Exercise Scenario
China
India
Study Area
Indonesia
Australia
Location Map
CHINA
NEPAL
Thimpu
BHUTAN
New Delhi
Kathmandu
INDIA
Dhaka
BANGLADESH
INDIA
Calcutta
Arabian Sea
Mumbai
Bay of Bengal
Hyderabad
Indian Ocean
Bangalore
SRI LANKA
Colombo
Male
MALDIVES
N
W
E
S
0
250
500
1,000
Kilometers
Legend
Incidents
Incidents
Cyclone
Capitals
Cyclone Path
Vessel Path
Initial Spill Area
Major Shipping Lanes
Country Boundaries

MASTER SCENARIO EVENT LIST

Inject Number	Inject Type	Inject Time	Send From	Send To	Inject Summary
			PHASE 1: PLANNING (1330-1430)		
1	Expected Action	1330	SIMCELL	ALL	Devastation from the shipwreck is widespread. Fish are dead throughout the South Asian region. Pollutants still leaking from the ship and containers. Pirates remain at-large. Reef extensively damaged.
2	Expected Action	1400	SIMCELL	ALL	Cultural antiquities were also aboard the wrecked vessel. Spill has severely impacted economies and food/water supplies for several countries. Pirates have been captured.
-	Contextual	1430	SIMCELL	ALL	**PAUSE**
			PHASE 2: OPERATIONS (1500-1600)		
3	Expected Action	1500	SIMCELL	ALL	Refuse stored in the hull of ship needs to be extracted before additional leakage occurs in the sensitive ecosystem. Fuel and industrial pollutants continue to detrimentally impact the environment. Regional security measures need to be employed to ensure pirates cannot capture another commercial vessel.
4	Expected Action	1530	SIMCELL	ALL	Spill has been contained. To remove the vessel from the reef, a platform is required to be erected. Placement of the platform is critical to avoid additional environmental impacts. Furthermore, the salvage needs to utilize a cost-effective alternative energy solution.
-	Contextual	1600	SIMCELL	ALL	**END**

INJECTION 1

Inject #:	**1**	Inject Time:	1330
Delivery Method:	Flip Chart, PPT, Verbal Announcement	Objective(s):	To evaluate the immediate actions required to respond to the shipwreck and conduct an environmental baseline survey
From:	SIMCELL	To:	All Participants
Inject:	Devastation from the shipwreck is widespread. Currently, oil and industrial pollutants can be found in Exclusive Economic Zone (EEZ) waters of the Maldives, India, Sri Lanka and Bangladesh. The industrial hazardous material from the containers remains unknown, but appears to be a liquid petroleum or detergent that is toxic. Large amounts of dead fish are washing up along the shorelines of the aforementioned countries. Pollutants are still leaking from the ship and its sunken containers. The area of coral reef where the ship crashed appears significantly damaged, and the ship's hull is still lodged on it. Additionally, the pirates that caused the damage have not been located. Their whereabouts remain unknown. 		
Questions:	1. What will be the priority of actions required to mitigate the situation? Please order the list below. <u>BLACK GROUP</u> a. Apprehend the pirates. (5) b. Conduct an environmental baseline survey to determine the extent of the spill and damage caused. (6) c. Remove the sunken ship. (7) d. Contain the ship seepage. (2) e. Contain the chemical spill. (1) f. Evaluate the hazard of industrial elements. (4) g. Coordinate with regional partners and authorities since the spill extends beyond one country's Exclusive Economic Zone. (3) <u>BLUE GROUP</u> 1. Get a hold of the Captain and get expert eyes on the situation (MNDF) 2. Activate regional plan/Agencies 3. Alert public of hazards I. Notification		

II. Evaluations & activation of plan
III. Joint response OPS @sea
IV. Joint response OPS @Shore

4. Disaster Management regional oil spill contingency plan

RED GROUP

a. Notify maritime authorities
b. Catch Pirates
c. Stabilize the ship to prevent further damage
d. Conduct EBS to estimate damage
e. Frame decision
f. Identify stakeholders
g. Remove ship
h. Contain seepage
i. Contain chemical spill
j. Evaluate hazard of industrial waste
k. Coordinate with regional partners
l. Notify coral response agencies

SILVER GROUP

No response

WHITE GROUP

No response

2. How will an environmental baseline survey be completed at the shipwreck site?

BLACK GROUP

- Multinational National /Multi-Disciplinary Survey.
- Extinct of Site Contamination.
- Identify Potential Vulnerability's
- To work out the action plan to fight back.

BLUE GROUP

No response

RED GROUP

- Maldives Environmental Protection Agency will lead the EBS.
- Indian Coast Guard – Tri-lateral (SAR + initial spill response)

- Identify critical areas

SILVER GROUP

No response

WHITE GROUP

Divers will sample the corals to determine manage. The results will be shown in a Geographic Information System (GIS).

What are the differences between countries in this approach?

BLACK GROUP

No response

BLUE GROUP

No response

RED GROUP

- Technical experience
- Multinational under unified command
- Approach
- Resources
- US: Contractor – based OPS for Salvage

SILVER GROUP

No response

WHITE GROUP

No response

What are the differences between civilian institutions and the military?

All groups provided no response.

	Would a partner from outside of the region be permitted to assist? BLACK GROUP No response BLUE GROUP No response RED GROUP Yes and No SILVER GROUP No response WHITE GROUP No response Is there any political sensitivity to outside assistance? All groups provided no response.

INJECTION 2

Inject #:	**2**	Inject Time:	1400
Delivery Method:	Flip Chart, PPT, Verbal Announcement	Objective(s):	To examine heritage and preservation considerations; to evaluate public relation strategies; to identify potential resources for environmental response in the region
From:	SIMCELL	To:	All Participants
Inject:	To complicate matters, cultural antiquities from Nepal and Bhutan were aboard the sunken vessel. They were being shipped to Bangkok for a temporary exhibition at a museum there. The antiquities appear recoverable, but they have been exposed to some of the pollutants. The container holding them floated and crashed into a reef, where they were exposed.  Meanwhile, the spill from the shipwreck has severely impacted the economies, food supply and water supply of several countries. The Maldives marine fisheries are currently unapproachable due to the amount of pollutants. Ports are closed. Offshore aquaculture businesses in India have experienced catastrophic loss. Sri Lankan and Bangladeshi fisherman are also experiencing difficulty, especially subsistence and commercial boats. In more positive news, the pirates have been captured by the Maldives National Defence Force.		
Questions:	1. What heritage and preservation practices can be employed to save the cultural antiquities? <u>BLACK GROUP</u> • Locate and salvage • Isolate and call the experts <u>BLUE GROUP</u> • Send police to island to retrieve • Communicate W1 Island preserve • Reward for info/ retrieval of antiquities • Contact countries (Bhutan/Nepal) to come-> preserve / restore		

RED GROUP

Maldives lacks preservation methods & skills. Therefore, they would bring representatives from Nepal and Bhutan to support.

SILVER GROUP

- Proper ID & tagging documentation
- Move to a place where it can be treated
- Employ experts for best practices
- Religions & cultural considerations

WHITE GROUP

Talk to the countries of origin tactical experts

2. What can individual governments, as well as regional institutions do, to warn the public about contaminated water and food sources?

BLACK GROUP

- Travel announcements.
- Media / Social Media.
- Villa Elder or Leaders.
- Radio Communication / For Fisherman.
- Governments should warn about eating polluted fishes.
- Alert the medical authorities.

BLUE GROUP

- Activate the regional disaster management and oil spill response plans
- Ensure public health agencies (HOSP) are notified
- Ask Maldives resort s and water agencies for extra capacity

RED GROUP

Individual Government: Employ medical experts, involve local community, and broadcast national messages

Regional Bodies: Distribute SMS messages and employ a Crisis Media Manager for the operation.

SILVER GROUP

- HPA, media campaign (main-stream, social media, etc)
- Alerts /preventing misinformation
- Suggestions / recommendations

WHITE GROUP

- Use all media resources (ex. televisions) to deliver the message.
- It is the responsibility of individual governments to warn.
- All coordinating agencies should put out a common message.

3. What practices will be implemented by governments to identify alternative food and water sources?

BLACK GROUP

- Push Military as an organizing force
- Integrate with local administration
- International Aids-can fish
- Seek and distribute bottled water

BLUE GROUP

Ask for international help (ex. USPACOM and Maldivian RED CRESENT) and transportation

RED GROUP

- Collect rainwater
- Decentralize food distribution
- Request foreign resources

SILVER GROUP

No response

WHITE GROUP

NGOs will distribute food and water.

4. What equipment and resources can each country provide to assist with the spill response efforts? Please provide a list.

BLACK GROUP

- Aircraft carriage
- Floating reverse
- Working force
- Maps
- Protective clothing
- Clean-up equipment
- Planes, helicopters

BLUE GROUP

Refer back to plan – salvage experts regional spill response plan Annex 3 – personnel and equipment

RED GROUP

- Salvage equipment
- Tug vessel
- Booms
- Aviation assets to track oil spill movement
- Insurance
- Commercial Assistance

SILVER GROUP

No response

WHITE GROUP

- US: Aerial surveillance, satellite images, equipment, etc.
- Australia:- Oil spill equipment
- Thailand: - Food
- Maldives:- Bottled water
- Sri Lanka:- Logistics support
- India:- Food supply, engineering support, etc.
- Arabian countries:- Fuel

INJECTION 3

Inject #:	**3**	Inject Time:	1500
Delivery Method:	Flip Chart, PPT, Verbal Announcement	Objective(s):	To examine hazardous material considerations in environmental response; to inspect the role of militaries in trans-boundary environmental issues; to evaluate how various parties respond to public demand for change and regional cooperation
From:	SIMCELL	To:	All Participants
Inject:	Divers responding to the environmental disaster have discovered hazardous materials stored in the sunken hull. The waste was being transported to Southeast Asia to be incinerated. There is a desperate need to extract the waste before it impacts the sensitive ecosystem. Additionally, fuel and industrial pollutants continue to detrimentally impact the environment. The spread of contaminants has nearly been contained, but the problem is not fully mitigated. Clean-up crews from across the globe have been deployed and are actively working together to recover from the environmental disaster.  Lastly, the public is demanding a regional security solution be developed to ensure pirates cannot capture another commercial vessel and cause more damage to the environment, economies, and citizens. Many remain fearful that another incident could occur.		
Questions:	1. Should an attempt be made to extract the hazardous waste from the ship? All work groups responded YES. If so, what techniques can be deployed to extract the waste from the ship without causing additional damage to the ocean environment? <u>BLACK GROUP</u> • Figure out what it is? Thermal imaging / X-ray etc • Seal the hull • Consider separating the hull from the ship		

BLUE GROUP

The generators provide waste characterization information to salvage company to AID/guide removal waste efforts (i.e. remote pumping, etc.) generator to fund

RED GROUP

No response

SILVER GROUP

Find command salvage companies or a partner country who can provide expertise

WHITE GROUP

- Seal the containers and extract the pollutants
- Contact salvage companies to remove the chemicals

2. Should representative militaries be involved in environmental response if the incident has occurred outside of their territory?

BLACK GROUP

Yes. Given that the military has prior training and SOPs for this subject, they should be involved.

BLUE GROUP

Yes. A Joint Task Force should be established.

RED GROUP

Yes. A unified command should be created. It should start with a trilateral response from the Maldives, India and Sri Lanka.

SILVER GROUP

Yes

WHITE GROUP

Yes

3. What regional measures can be enacted to quell fears regarding counter-piracy in South Asia?

BLACK GROUP

A Joint Task Force can be activated.

- Joint intelligence networks
- Extradition treaty
- Permissible joint pursuit
- Integrate fisherman into surveillance network

BLUE GROUP

- Continue with CTF 150
- Have public affairs issue message (affected parties – chamber of commerce, shipping companies, Maldives resident/fisherman)

RED GROUP

- Stop piracy from Somalia
- Increase security on ships
- Employ regional mechanisms with countries assigned as leads for certain AORs

SILVER GROUP

Regional setup

WHITE GROUP

An anti-piracy task force should be established.

4. What processes can be implemented to better monitor hazardous waste transport through South Asia and international waters?

BLACK GROUP

Stop and Search Procedures

- Better monitoring and enforcement
- Inspection at ports
- Regional protocol for production of whistle blower
- Joint regional data base for transportation of hazardous materials
- Separate sea lance for ships containing hazardous materials

	BLUE GROUP Activate SAARC Disaster Management Centre to deal with hazardous waste transport. RED GROUP No response SILVER GROUP Maritime domain awareness WHITE GROUP • Inspect ships at port • Put armed security on board • Request Navy and/or Coast Guard escort.

INJECTION 4

Inject #:	**4**	Inject Time:	1530
Delivery Method:	Flip Chart, PPT, Verbal Announcement	Objective(s):	To identify alternative energy solutions to support the recovery of the environment; to examine public-private partnership opportunities; to discover regional mitigation solutions for the long-term recovery of the environment
From:	SIMCELL	To:	All Participants
Inject:	Good news! Through the hard work of dedicated civilians and the military, the spill at the ship has been contained. However, the vessel still on the reef, and there is a need to extract it for salvage. To remove the vessel, a temporary platform could be erected so a hoist can lift it, place the remains on a barge, and transport it to the nearest port. The sighting of the platform is critical to avoid additional environmental impacts. Furthermore, the extraction needs to utilize a cost-effective alternative energy solution as traditional oil-based fuel supplies are not currently available. 		
Questions:	1. What will be the criteria to properly position the platform? Please mark the location on the map. <u>BLACK GROUP</u> No response <u>BLUE GROUP</u> Usually Leeward side, but hazards being pushed there, so the windward side of weak is preferred (location noted on map) <u>RED GROUP</u> No response <u>SILVER GROUP</u> • Do no harm • Technically achievable		

- Cost effectiveness

WHITE GROUP

- Position in the best location to lift the ship (depth/stability/Waves/current etc…)
- Alternative: float the ship

2. Could public-private partnerships be used to salvage the vessel?

All work groups responded YES.

What are the advantages and disadvantages of doing so?

BLACK GROUP

Advantages

- Expertise
- Tech / Equipments
- Faster

Disadvantages

- Local community
- Legal complexities
- Company may not be sensitive to local ecosystems

BLUE GROUP

Private companies have salvage expertise.

RED GROUP

- The ability to pay someone to conduct environmental services
- The entity that wrecked the ship should have to pay for the damages

SILVER GROUP

- Make use of private experience and expertise
- Public sector can absorb some of the cost involved
- No clear line of authority
- Catalyst of interest

WHITE GROUP

- Profit motivation
- Expertise
- Technical capabilities
- Cost-saving

3. What energy conservation measures could the recovery mission incorporate to reduce the cost of the salvage operation?

BLACK GROUP

- Burn Debris from salvage
- Waste heat recovery using sea water
- Limit operations to daylight hours

BLUE GROUP

- N/A resources are required to reduce risk
- Save energy by doing it quickly

RED GROUP

Wind

SILVER GROUP

- Convert the shipwreck into a dive site
- Let the ship breakers take care of it (commercially viable)
- Alternative energy sources
    - Bio –diesel
    - Solar
    - Wind

WHITE GROUP

Renewable energy

4. What long-term mitigation projects can be operationalized at the shipwreck site to enhance the environment and its condition?

BLACK GROUP

Separate HAZMAT; leave remains as an ecosystem for reef.

	BLUE GROUP • Monitoring -> start with EBS now, then do monitoring. • Compare with un-impacted areas. • Try to control transplanting to grow coral / attract fish (temp groins). RED GROUP • Alternate energy sources for water • Environmental study • Implement a mitigation plan SILVER GROUP • Electric therapy for the week • Coordinated counter piracy operations, exercises, drills • Contingency plans for spills WHITE GROUP • Ship wreck dive site • Restoration • No fishing in the area for fish to recover • Public awareness campaign