



WORK GROUP 3 ENVIRONMENTAL SECURITY

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WORK GROUP 3

“UNDERSTANDING ENVIRONMENTAL SECURITY”

1. DIFFERENT PERSPECTIVES ON ES
2. ES AT PORTS/HARBORS
3. FRAMEWORKS
4. EXAMPLES & LESSONS LEARNED
5. FUTURE FOCUS, PATH FORWARD, & DATA NEEDS



DEFINITION OF ENVIRONMENTAL SECURITY

- Belluck et al (2005) definition:
 - *“environmental security involves actions that guard against environmental degradation in order to preserve or protect human, material, and natural resources at scales ranging from global to local in a sustainable manner”*
- General and applies to the many aspects of ES



1. DIFFERENT PERSPECTIVES ON ES

- 3 CATEGORIES OF THREATS:
 - MAN-MADE & NATURAL GRADUAL EVENTS
 - (e.g., bird flu, gradual pollution, climate change)
 - NATURAL CATASTROPHIC EVENTS
 - (e.g., extreme weather, water, earthquakes)
 - MAN-MADE CATASTROPHIC EVENTS
 - (e.g., terrorism, sudden pollution, unanticipated accidents)

- TERRORISM IS ONLY ONE ASPECT OF SECURITY



1. DIFFERENT PERSPECTIVES ON ES

- TIPPING POINTS:
 - 1 – the slow and gradual (e.g., climate change)
 - 2 – the dramatic (e.g., 9-11, 11-9 events)
- CHAOS THEORY APPLIES TO ES
 - Predictability of patterns
 - We know what will likely occur, and may know how it will occur, but don't know when change will happen



1. DIFFERENT PERSPECTIVES ON ES

- TIME & SPATIAL SCALES
 - Global security
 - Local, regional, national, & trans-national security
- HIERARCHIAL SCALES
 - Asking the correct security questions !
 - What are we protecting ?
 - Ecology = Species, population, community, ecosystem
 - Emergent properties of different hierarchical levels– the whole is not equal to the sum of the parts
 - Social dynamics at different levels of organization



2. FOCUS

THE FOCUS OF THIS DISCUSSION
IS PORTS / HARBORS....

PLACED IN THE CONTEXT OF ECOLOGICAL AND
SOCIO-ECONOMIC & POLITICAL FACTORS



3. ES FRAMEWORK FOR PORTS / HARBORS (P/H)

- ADDRESS THE 3 CATEGORIES OF THREATS
 - MAN-MADE & NATURAL GRADUAL EVENTS
 - NATURAL CATASTROPHIC EVENT
 - MAN-MADE CATASTROPHIC EVENTS
- DPSIR FRAMEWORK APPLIES HERE
 - = DRIVERS / PRESSURES / STATES / IMPACTS / RESPONSE
 - PRESSURES ARE KEY !
- CONTINUOUS IMPROVEMENT PROCESS:
 - ISO14,000; 6-SIGMA; ADAPTIVE MNGMT



4. LESSONS LEARNED AT PORTS / HARBORS

- USING EXAMPLES TO ILLUSTRATE DIFFERENT ES ISSUES:
 - VENICE – STORMWATER TREATMENT
 - ROTTERDAM – MNGMT LARGE PORTS
 - AQABA – WATER & POLLUTION
 - ISTANBUL REGION – EARTHQUAKES
 - CONSTANTSA, ROMANIA – STORMS
 - NEW ORLEANS – TERROR & DISASTER RECOVERY
 - USA/CANADA – INVASIVE SPECIES (SHIPPING / BALLAST)
 - ALEXANDRIA & SUEZ CANAL, EGYPT – RESOURCE GATEWAY



5. FUTURE FOCUS, PATH FORWARD & DATA GAPS

- RECOGNITION THAT ES CHANGES OVER TIME:
 - ES SYSTEMS NEED TO BE FLEXIBLE
 - PATH FORWARD NEEDS TO BE DYNAMIC, ITERATIVE EXAMINATION
- CONSIDERATIONS:
 - IDENTIFY DATA GAPS
 - CONTINUALLY REASSESS TECHNOLOGY NEEDS TO DEFINE MONITORING AND ANALYSIS
- NEED TO HARMONIZE REGULATIONS & COMMUNICATION



5. EXAMPLES OF DATA GAPS

- EXAMPLES OF TECHNOLOGY NEEDS:
 - WASTEWATER TREATMENT
 - WASTE MANAGEMENT
 - SLUDGE MANAGEMENT
 - DESALINATION
 - STORM PREVENTION

- EXAMPLES OF MONITORING NEEDS:
 - ENVIRONMENTAL
 - ECONOMIC
 - SOCIAL