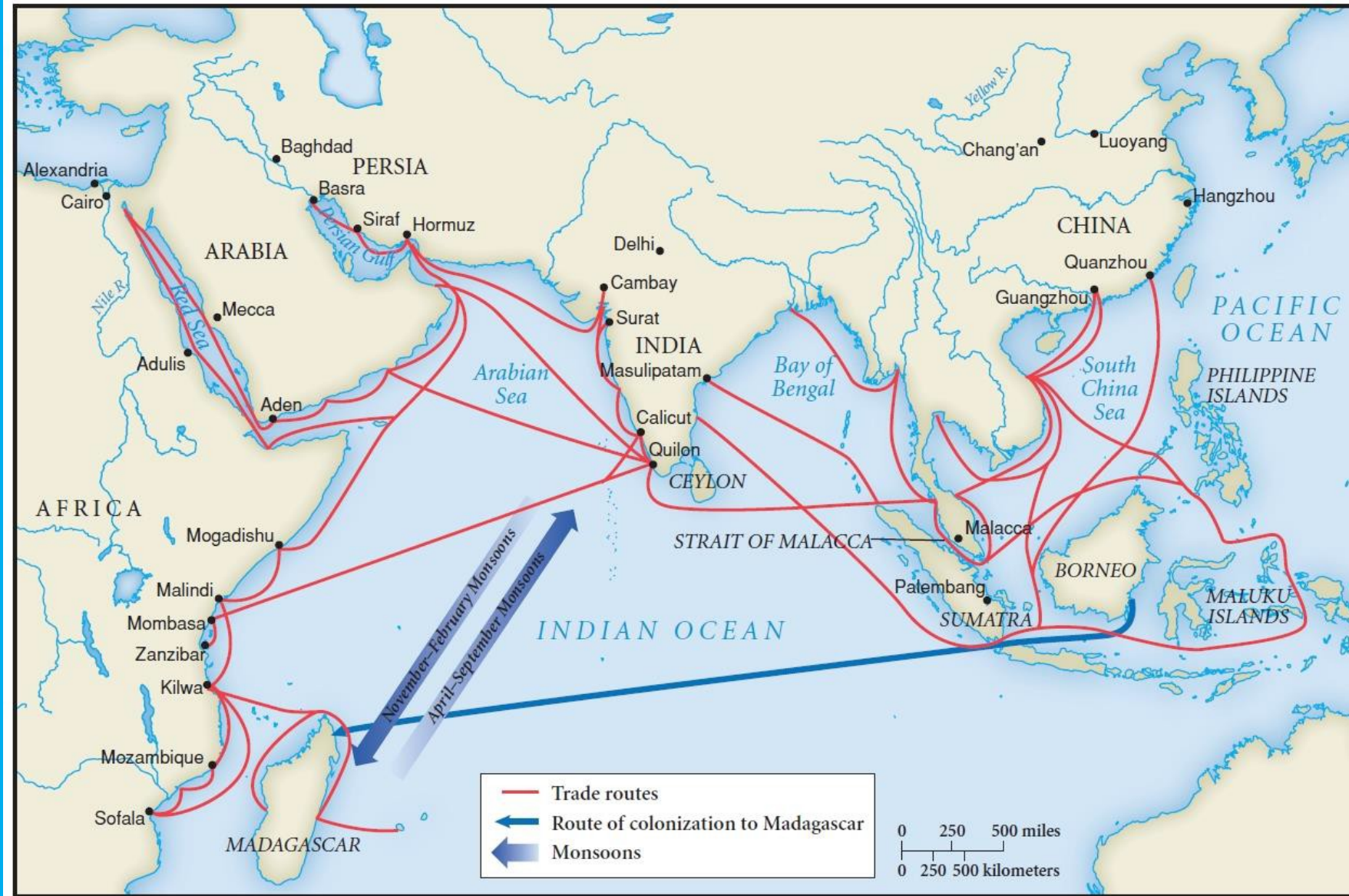# Maritime Security is burdened by thousand of years of history and tradition

Maritime Domain Awareness (MDA):
  The effective understanding of anything associated with the global maritime domain that could impact the security, safety, economy or environment of a nation.

Maritime Domain Awareness is a component of and key enabler for Maritime Security.

- **The Importance of MDA**
- **Governmental and Non-Governmental Responses to the MDA Challenge**
- **Area of Responsibility/Area of Interest**
- **A Changing Threat Environment**
- **Common MDA Tools**
- **Integrating Weather Data**
- **Training and Education**
- **Summary**
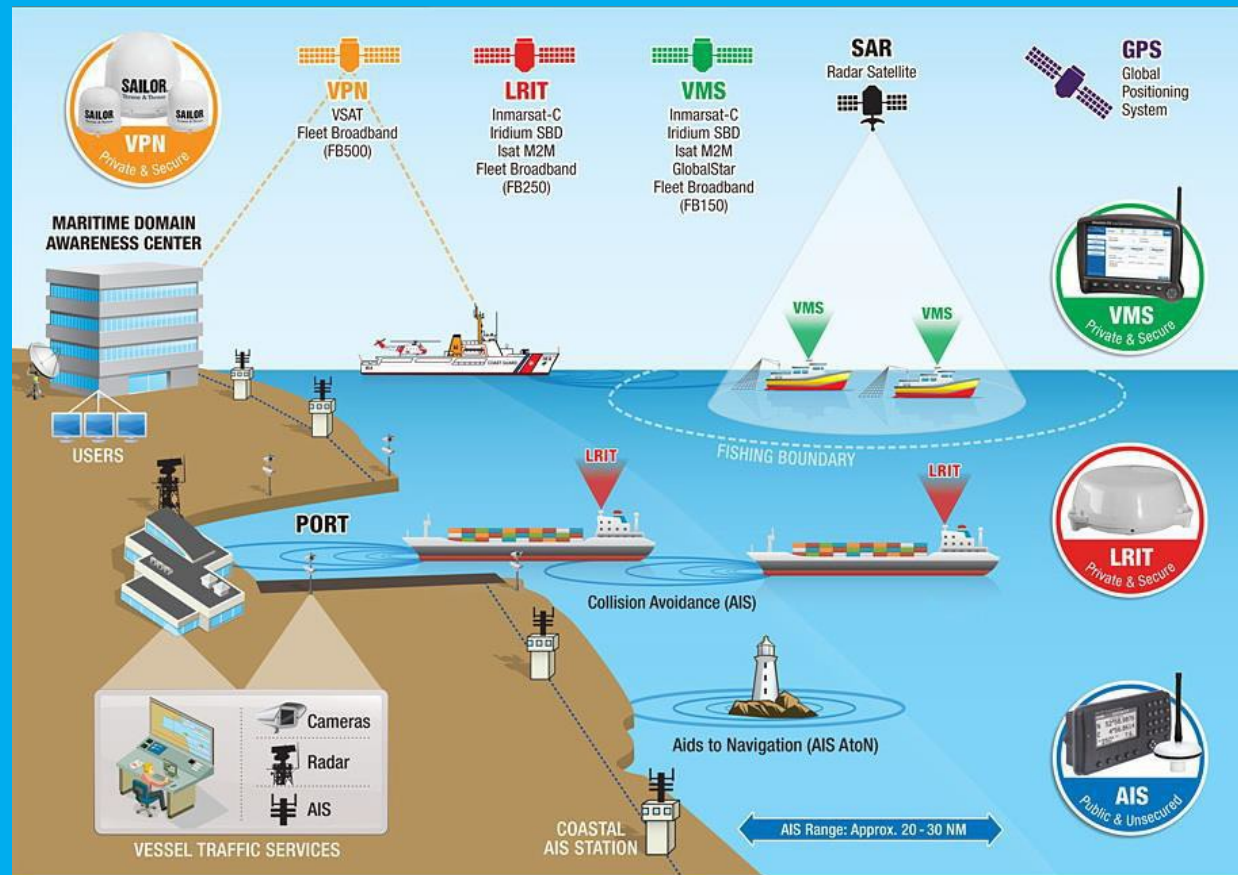
Enabling Maritime Domain Awareness

Collect, fuse, identify, track, and disseminate information

Intelligence

Sensors

Open Source Data
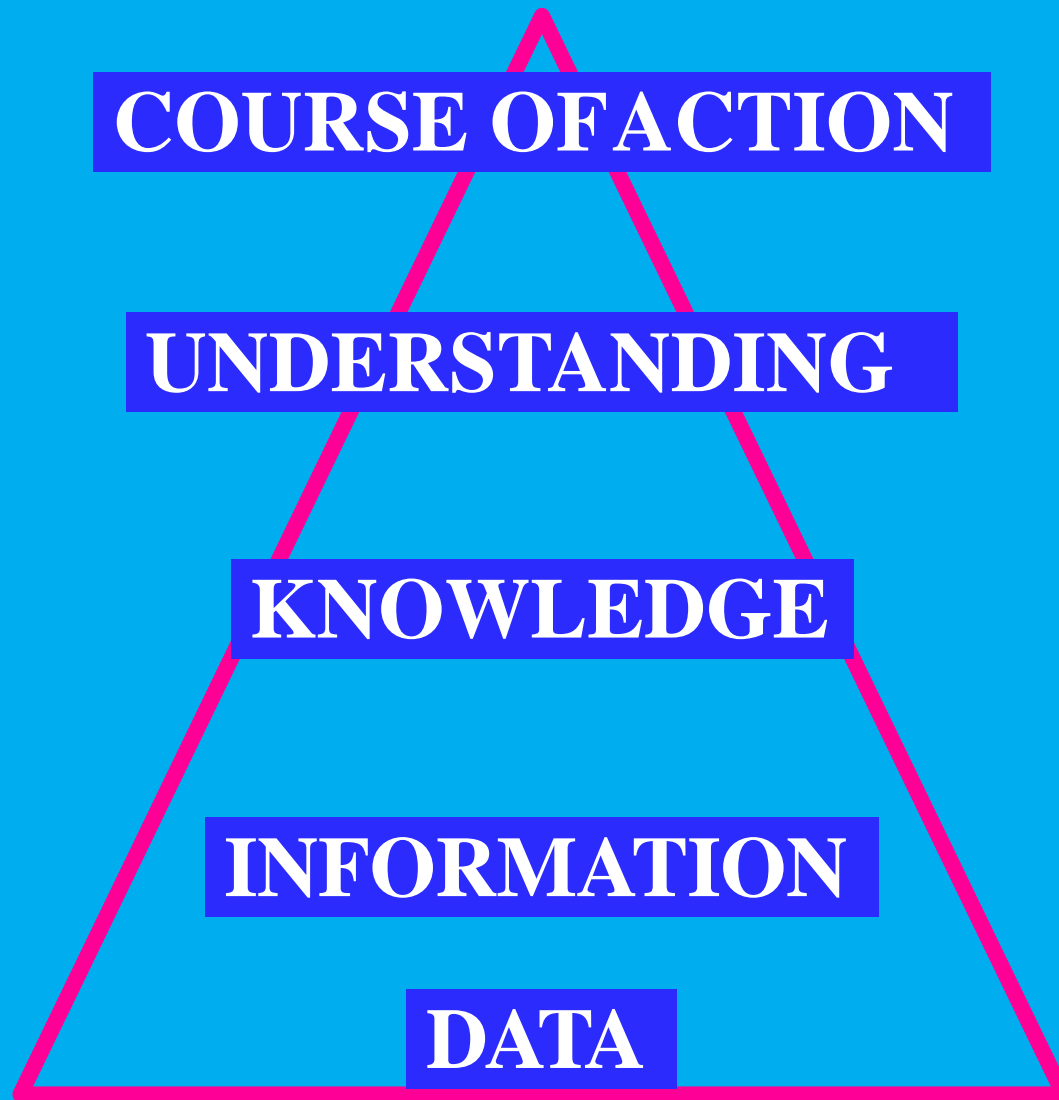
Commercial Vessels

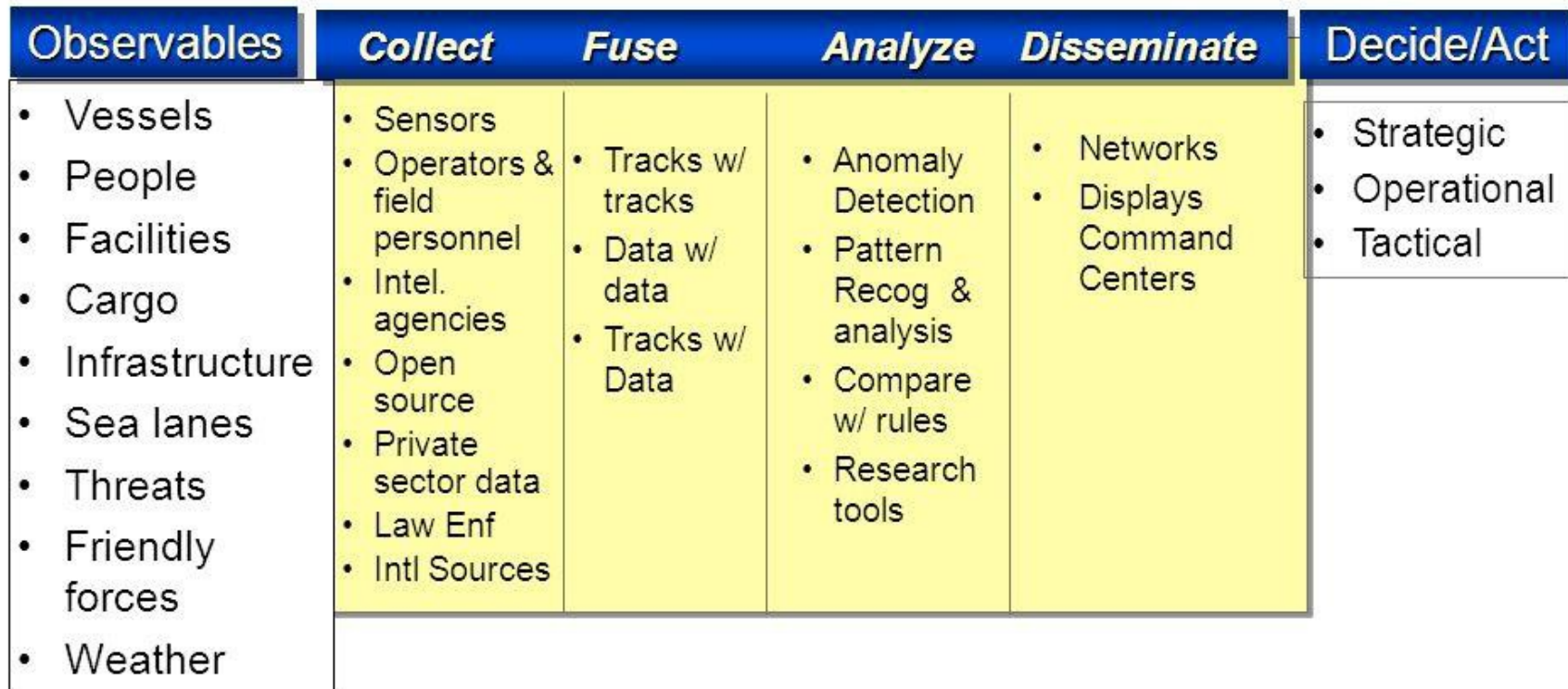Other Fusion Centers

National Leadership

Law Enforcement

Interdiction Platforms

JIATF-South, SIFC, NMIC, RMIFC, and many more….

Information Exchanges between countries and organizations important to build trust

MDA SITUATIONAL AWARENESS

Observables	Collect	Fuse	Analyze	Disseminate	Decide/Act
• Vessels • People • Facilities • Cargo • Infrastructure • Sea lanes • Threats • Friendly forces • Weather	• Sensors • Operators & field personnel • Intel. agencies • Open source • Private sector data • Law Enf • Intl Sources	• Tracks w/ tracks • Data w/ data • Tracks w/ Data	• Anomaly Detection • Pattern Recog & analysis • Compare w/ rules • Research tools	• Networks • Displays Command Centers	• Strategic • Operational • Tactical

Overview

- **The Importance of MDA**
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Examples of Interagency/Multinational Maritime Information Sharing Organizations

- **IMB Piracy Reporting Centre (1992) Malaysia**
- **The Joint Interagency Task Force – South (1999) U.S.**
- **The Border Protection Command (2004) Australia**
- **Coast Watch South/System (CWS) (2008) Philippines**
- **The Information Fusion Centre (2009) Singapore**
- **South Africa MDA Centres (2012) South Africa**
- **Indian Ocean Coastal Surveillance (2014) India**
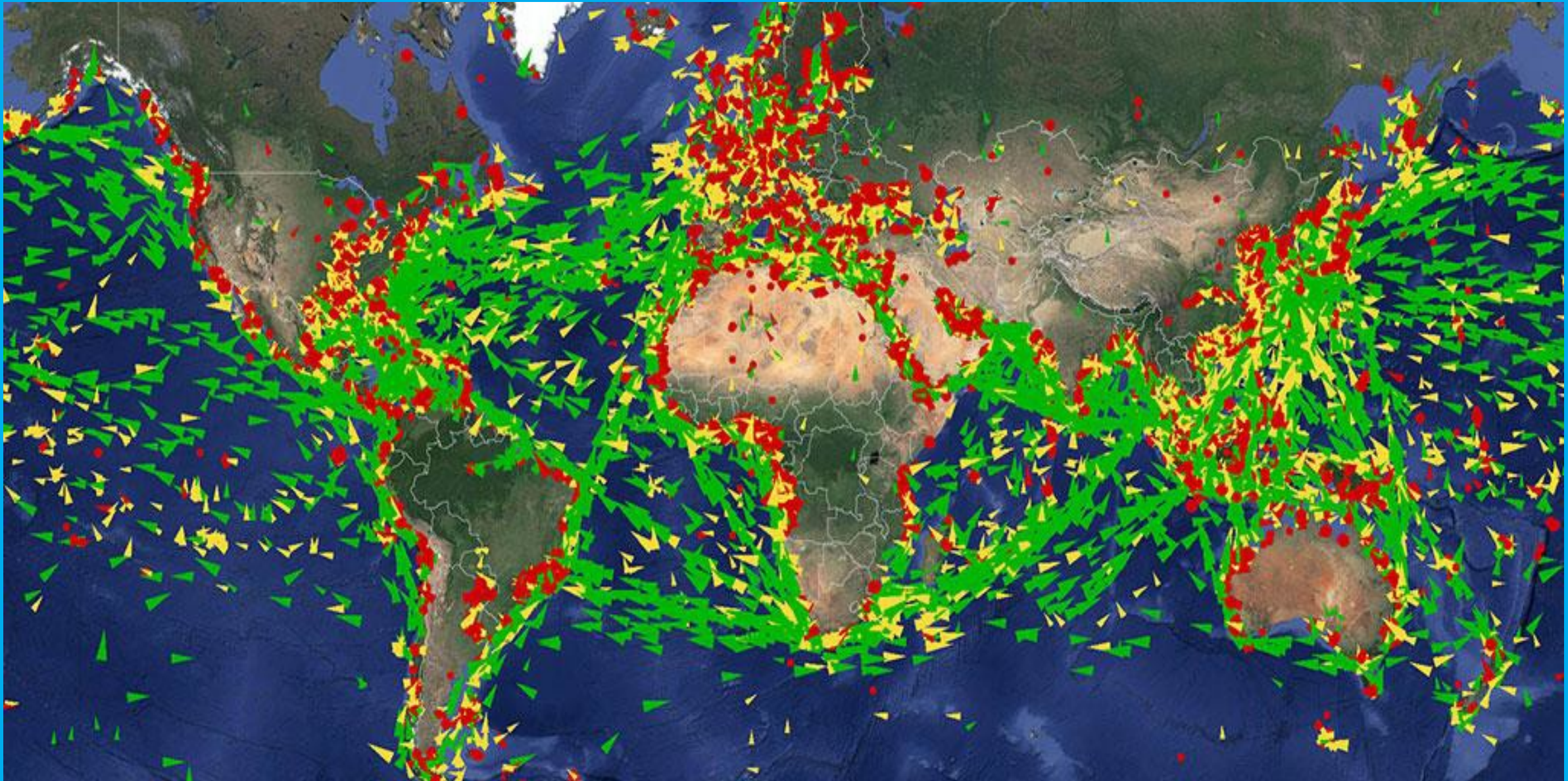- **Regional Maritime Information Fusion Center (Mad)**

Extensive Global Linkages

65 Operational Centres in 35 countries

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Global Maritime Picture

Maritime Domain Awareness

ACCIDENTS AT SEA

Some of the world's most iconic oceans are also the most at risk. The South China Sea and East Indies, east Mediterranean and Black Sea, North Sea and British Isles were found to be dangerous hotspots for accidents involving ships. WWF is reinforcing the importance of ensuring that vessels are built, maintained and operated to a high standard so as to lower the risk of accidents.

ACCIDENTS HOT SPOTS

NORTH SEA AND BRITISH ISLES

JAPAN AND KOREAN SEA

EAST MEDITERRANEAN AND BLACK SEA

SOUTH CHINA SEA AND EAST-INDIES

The Coral Triangle

50% GENERAL CARGO VESSELS ACCOUNT FOR NEARLY 50% OF ALL VESSEL TYPES LOST AT SEA

FOUNDERING

50% OF ANNUAL SHIP LOSSES

Sinking due to rough weather, leaks or breaking in two, but not collisions, causes 50% of all annual ship losses.

90% SHIPPING DELIVERS 90% OF ALL WORLD TRADE

GROUNDING

Wrecked or stranded vessels caused by striking the sea bottom, shore or underwater wrecks is the second most common cause of ship losses

PRESTIGE OIL SPILL

In 2002, the Prestige oil tanker sunk resulting in over 70,000 tonnes of oil being released into the Atlantic Ocean off the Spanish coast. It caused not only devastating environmental impacts but economic losses estimated at over €8 billion. But out of this disaster came a bridge of trust between fishermen and environmentalists that still exist today.
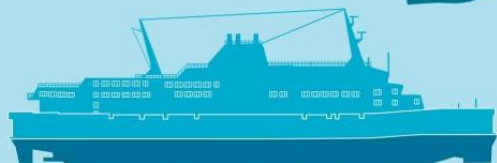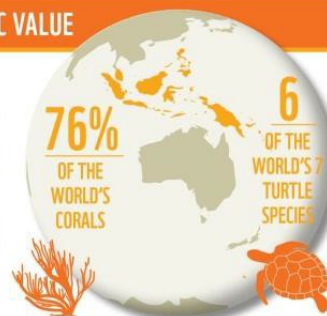
WWF FOR SAFER SEAS

· The shipping industry needs to promote greater owner and operator responsibility
· Ships should register with better flag states
· Highlight irresponsible and badly performing flag states
· Bad and unsafe practices should be scrutinized publicly

DEFINITION OF FLAG STATE

The flag state is the country the ship is registered to and that has the authority and responsibility to enforce regulations over vessels.

172 IN 2010 172 VESSELS WERE LOST AT SEA

THE RISK FACTORS

The greatest probability of a shipping accident occurring is when all of the following factors act together:

Key hotspot locations **+** Vessels over 10 years old **+** Poorly performing flag states **+** Being a general cargo or fishing vessel **=**
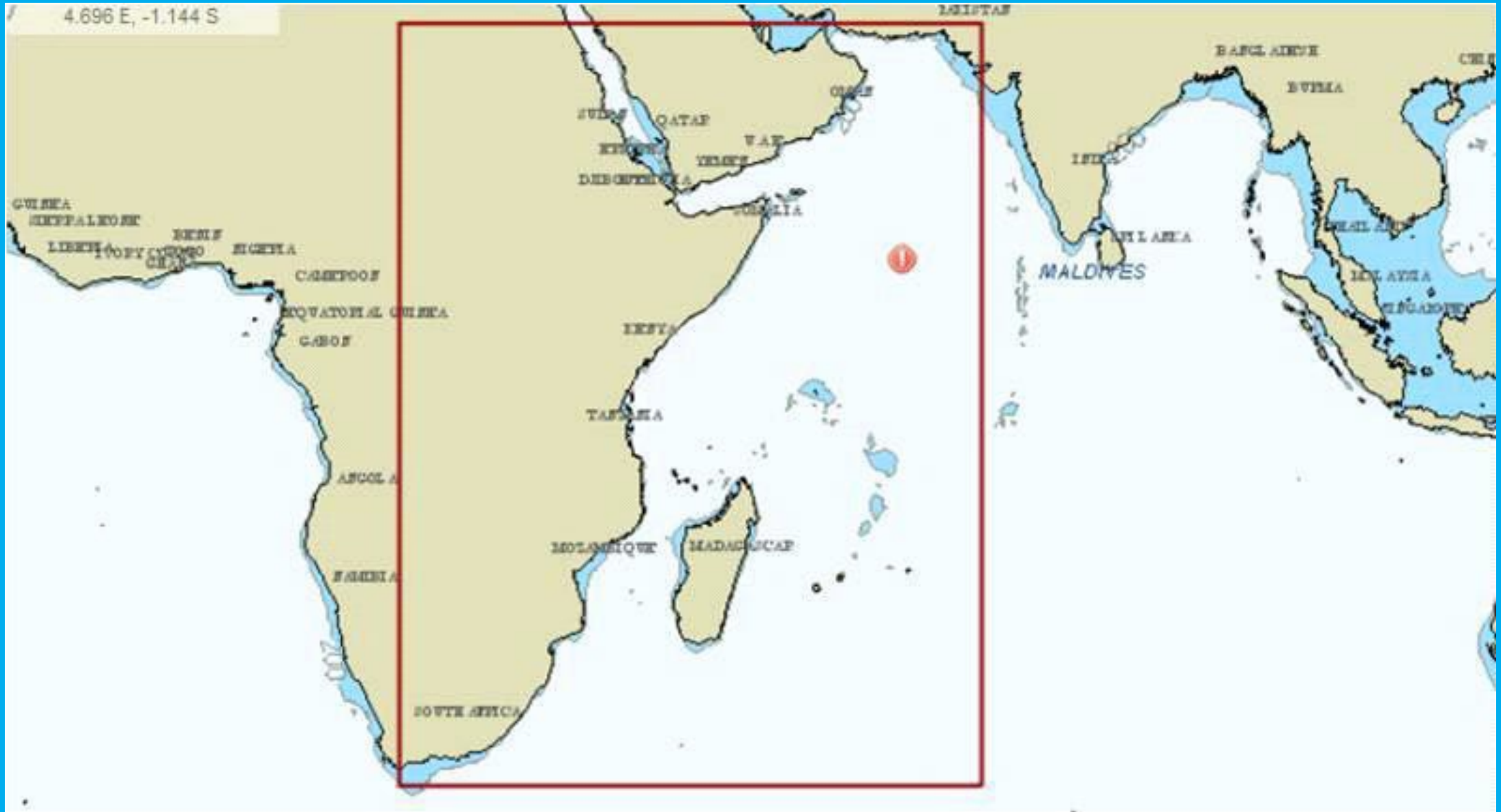
THE CORAL TRIANGLE'S ECONOMIC VALUE

Shipping accidents in the Coral Triangle could severely impact the livelihoods and food security of the 120 million people that rely on the areas resources.

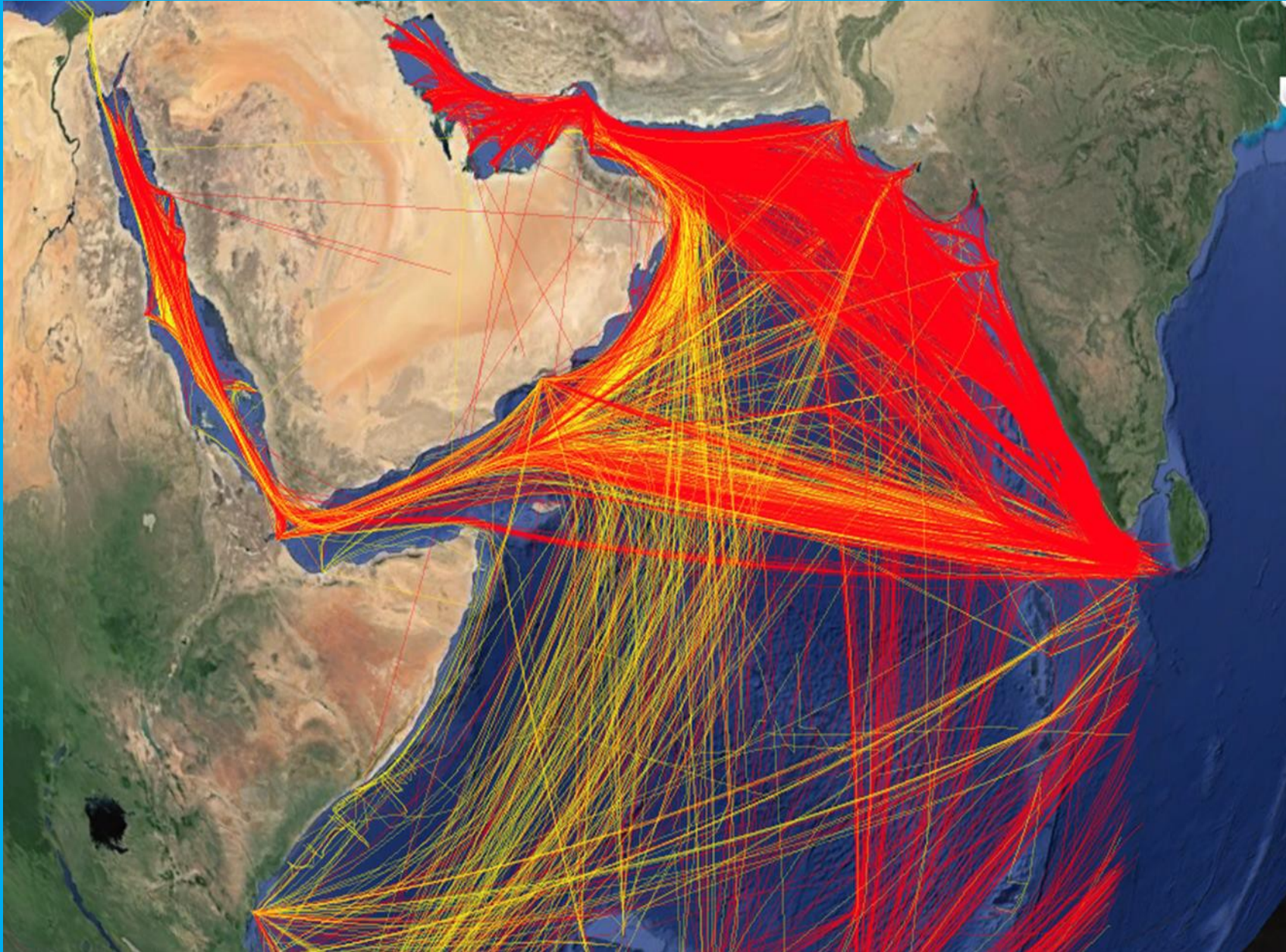Marine resources contribute to a growing nature-based tourism industry, valued at over US$12 billion annually

76% OF THE WORLD'S CORALS

6 OF THE WORLD'S 7 TURTLE SPECIES

Tuna spawning and nursery grounds support a multi-billion dollar tuna industry and supply millions of consumers worldwide

Area of Responsibility & Area of Interest

Monitoring Daily Vessel Traffic

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Transnational Maritime Threat

- **Flag (Open Registry?)**
- **Owner?**
- **Crew?**
- **Passengers?**
- **Cargo?**
- **Command & Control?**
- **Return address to retaliate?**

A much more complex and challenging intelligence problem

Common MDA Tools

Automatic Identification System (AIS)

Cooperative Situational Information Integrated System (CSSII)

Maritime Safety and Security Information System

Long Range Identification and Tracking (LRIT)

Maritime Electronic Highway

Computer Assisted Maritime Threat Evaluation System (CAMTES)

Sea link Advance Analysis (S2A)

Maritime Safety and Security Information System (MSSIS)

Integrating Weather Data

Weather Avoidance

Maritime Domain Awareness Training and Education

Current Training and Education: no shared vision

- Stove-piped by agencies

- Not integral to careers

- Ad hoc and self-initiated

- Emphasis on credentials
- No focal-points for tool-building or lesson-learning

New Training and Education Vision

- Joint, Interagency and Multinational

- Integral to careers, with enough time to accommodate

- Strategic and organization driven

- Emphasis on job skills
- Create focal-points for tool-building and lesson-learning

• **Summary**

Maritime Domain Awareness
for the 21ˢᵗ Century

Now

- Protect information
- "Need to know"
- Avoid risk
- Stove pipes control access
- Write at highest classification; fight to downgrade or declassify
- Compartments, but still much of "one size fits all"

Future

- Move information
- "Need to share" – insights from those with NO "need"
- Manage risk
- Build trusted networks
- Start at lowest classification, add details later
- More levels and forms of access

Bottom Line

No Organization/Nation Can Achieve Comprehensive MDA Alone…

We __All__ Need Interagency and International Cooperation to Succeed.

Questions?
Comments?