Sustainability in Shipping

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Global Trends and Disruptions

Never before in recorded history has so much change and disruption been occurring at such an accelerated pace.
As disruptive as converting from sail to steam
Or inventing the container...
Shipping connects the globe

Where do ships go?
Shipping’s Role in Global Trade

- Our marine transportation system delivers about 90% of all global trade.

- In 2015, estimated world seaborne trade volumes surpassed 10 billion tons - the first time in the records of UNCTAD (United Nations Conference on Trade and Development).
Today
Cargoes
Ports
Shipping is under stress
Longest recession since 1845
Changes in Global Trade

SEABORNE TRADE 2015

SEABORNE TRADE VOLUME

(million tons)

Estimates for 2015 indicate that, for the first time on UNCTAD’s record, world seaborne trade volumes exceeded 10 billion tons.
Changes in Global Population

**World population**
The world’s population is growing by over 200,000 people per day!

- **5.3 billion** in 1990
- **7.3 billion** in 2015
- **9.7 billion** in 2050

Population in 2015 by development status:
- Developing economies (62%)
- Transition economies (14%)
- Developed economies (14%)

60% in Asia
Population by region in 2015:
- Asia (60%)
- Africa (19%)
- America (13%)
- Europe (10%)
- Oceania (1%)

+ 200,000 per day

World population trend (Total in billion)

Africa is the second most populous continent on earth, after Asia, with estimated population in 2015 of 1.18 billion people. By 2050, Africa is projected to increase to 2.47 billion.
Changes in routes: One Belt One Road
Development of natural resources in Africa

Natural Resources – Africa Map

Made for PowerPoint
Impacts of Technology

Fleet and Port Efficiency = Digitalization
Advances in Communication= Real Time
Increasing Automation Afloat...
Size of ships

- 50,000 teu
Emerging Risks

- Cybersecurity
New transactional tools

- Blockchain
New Entrants

Amazon

Alibaba Group
Regulatory Tsunami

- ECA - Emission Control Area .1% Sulphur
- MRV - Monitoring, reporting, verification EU January 2018
- IMO’s DCS - Data Collection System, January 1, 2019
- .5% global Sulphur cap - January 1, 2020
- 50% reduction of GHGs by 2050 over 2008 levels - strategy due by 2023
- Use of heavy fuel oil in the Arctic - currently being evaluated by the Arctic Council. Bans exist in Antarctic
- Ballast water convention was implemented September, 2017 (US framework is different)
Why?

- Protect the environment
Ocean health - SDG 14

GOAL 14

CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT
People affected by emissions
Changes in our planet
1984-2012
Changes in Environmental Activism

- There is no Planet B
- Eco Friendly Product
- Human Right to Water
Government’s Growing Role-
Paris Climate Accord
Shipping’s Responsibility
2020 Global Sulphur Cap a Reality
GHG Industry Reduction

- Target established; strategy under development
No surprise

- Agreement on a global Sulphur cap of .5% occurred in **2008**.

- “The global cap on the content of sulphur in marine fuel by 2020 or 2025 was first agreed by acclamation in 2008. The sulphur limit for marine heavy fuel oil is **3,500 times** higher than the limit for diesel used in Europe’s cars and trucks, making the shipping industry the world's second biggest emitter of SO2 after China.” - Transport and Environment
Shipping was the first global industry to regulate emissions

- Work on the prevention of air pollution and control of greenhouse gas (GHG) emissions from ships engaged in international trade started within the IMO in the late 1980s. Although discussions on GHG emission from ships within IMO started in the late 1980s, it was the 1997 MARPOL Conference Resolution 8 on “CO2 emissions from ships” that triggered IMO’s work on GHG emissions.
Tools
Compliant and New Fuels

- LNG
- Methane
Shift away from fossil fuels
Other Options

100MW Compact Nuclear Fusion

Battery/hybrid
Currently there is no “silver bullet” for reducing GHG’s in shipping.

- LNG - bridging fuel
- Methanol - net environmental impact
- Nuclear - public acceptance
- Battery/hybrid - shorthauls
- Hydrogen - scalability

Combination of technologies not practicable to achieve decarbonization (sail rotors + solar + etc)
Proactive v Reactive

- Air quality

“Clean air is fundamental to healthy human life”

--Alan Andrews, Clean Air Project
Further Action for Sustainability -- Next Generations

- Meeting Millennial and Gen Z expectations (work/life balance)
More women?

- Potential to increase profits by 26% (Credit Suisse Research Institute)
Partners in Navigating Change, Growth and Sustainability
Help identify the balance between conservation and commerce
Why NAMEPA?

• HANDS ON:

  Industry, students, communities, seafarers, conservationists, regulators

• PROACTIVE:

  BERMEPA, CARIBMEPA, Port waste reception facilities, industry advocacy, workforce development,

• ENGAGED:

  Community, corporate, industry and seafarer programming
Above all...

Save Our Seas
NAMEPA- Your partner in change, growth and sustainability!