Reducing ocean acidification and marine invasive species risk from the shipping sector - The Glo-X approach

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A. WORLD ECONOMIC SITUATION AND PROSPECTS

Although a number of factors are increasingly redefining seaborne trade patterns, maritime trade flows continue to be largely determined by developments in the macroeconomic landscape. Seaborne trade volumes have generally moved in tandem with economic growth, industrial activity and merchandise trade, albeit at varied speeds (figure 1.1).

1. World economic growth

Falling short of expectations and below the pre-financial crisis levels, growth in world GDP expanded by 2.5 per cent in 2015, the same rate as in 2014 (table 1.1). Diverging individual country performances unfolded against the background of lower oil and commodity price levels, weak global demand and a slowdown in China. China's transition from an investment and export led-growth model has had an impact on global manufacturing activity, aggregate demand, investment and commodity prices. An additional factor dampening global growth was the reduced positive effect of lower oil prices, partly offset by the negative impact on investment in the oil sector and the import demand of oil-exporting countries. Developing country growth decelerated from 4.4 per cent in 2014 to 3.9 per cent in 2015, although still accounting for 70 per cent of global expansion (International Monetary Fund, 2016). China's economy has slowed over the past few years, although it is still growing at a relatively high rate; GDP growth decelerated from 7.2 per cent in 2014 to 6.9 per cent in 2015. China may be said to be growing at two speeds, with its manufacturing sector facing overcapacity and limited growth, while its consumer-driven services sector is growing at a rapid pace (The Economist Intelligence Unit, 2016a). India is now growing faster than China, as its GDP growth, supported by factors such as infrastructure investment, accelerated to 7.2 per cent in 2015. Apart from developments in China and continuing weak demand conditions, other...
International Maritime Organization

- A specialized agency of the United Nations,
- IMO Convention adopted in 1948, first met in 1959 - 172 member States
- Develops and maintains a comprehensive regulatory framework for shipping

TORREY CANYON, 1967  
AMOCO CADIZ, 1978  
ERIKA, 2000

Development of idea  
Proposal to IMO Committee  
Discussion, refer to Sub-Committee, working group  
Development of draft Regulation, circular, Code or resolution  
Adoption of new regulation or amendment to existing measure

MARINE ENVIRONMENT DIVISION
GEF-UNDP-IMO GloBallast Partnerships Programme

Tackling the transfer of Invasive Alien Species through ships’ ballast water
GEF-UNDP-IMO GloBallast Partnerships Programme

15 years of support to developing countries

- Assisting developing countries with the implementation of the BWM Convention
- Focus on, Legal Policy and Institutional Reforms (LPIR)
- Technical Cooperation
- Capacity Building
"Glo-X Pyramid" Model
Market for Technologies (50 Billion US$)

“Glo-X Pilot-to-Partner” Model
## Catalyzing Ocean Finance

<table>
<thead>
<tr>
<th>Catalytic Ocean Finance Summary</th>
<th>Amount (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total GEF Grant Financing</td>
<td>$14 million</td>
</tr>
<tr>
<td>Total Programme Co-financing</td>
<td>$45 million</td>
</tr>
<tr>
<td>Catalysed Private Sector Financing</td>
<td>$35 billion</td>
</tr>
<tr>
<td>Catalytic Finance Ratio (Total Catalysed Finance : UNDP-GEF Finance:)</td>
<td>2500:1</td>
</tr>
</tbody>
</table>

_GloBallast case study_
The “Glo-X” Scaling-up: Transforming Maritime Industry

- ~70 countries
- 65 Technologies
- $30 to 50 Billion Investments
Slow regulatory international discussions

UNDP intervenes through GEF-UNDP-IMO GloBallast Pilot Project (1st phase)

Slow ratifications

Adoption of BWM Convention

UNDP intervenes through GEF-UNDP-IMO GloBallast Partnerships Project (2nd phase)

Entry into force of Convention
GEF-UNDP-IMO Project:
Transforming the Global Maritime Transport Industry towards a Low Carbon Future through Improved Energy Efficiency, 2015-2017
Shipping and energy efficiency

- Triple-E ship: moves a tonne of cargo 184km using one kWh of energy
- Boeing 747: moves a tonne of cargo 0.5km using one kWh of energy

<table>
<thead>
<tr>
<th>Year</th>
<th>International shipping</th>
<th>% of global</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>885</td>
<td>2.8%</td>
</tr>
<tr>
<td>2008</td>
<td>921</td>
<td>2.9%</td>
</tr>
<tr>
<td>2009</td>
<td>855</td>
<td>2.7%</td>
</tr>
<tr>
<td>2010</td>
<td>771</td>
<td>2.3%</td>
</tr>
<tr>
<td>2011</td>
<td>850</td>
<td>2.4%</td>
</tr>
<tr>
<td>2012</td>
<td>796</td>
<td>2.2%</td>
</tr>
<tr>
<td>Average</td>
<td>846</td>
<td>2.6%</td>
</tr>
</tbody>
</table>

Future CO₂ emissions

- Projection: Growth in CO₂ emissions for international maritime transport between 50% to 250% in the period up to 2050
- Depending on future economic and energy developments
Impact of EEDI and SEEMP

- Mandatory energy-efficiency regulations for ships trading internationally entered into force as a ‘package’ on 1 January 2013

- First-ever, mandatory global regime for CO₂ emission reduction in an entire industry sector

- Combined impact of EEDI and SEEMP by 2050 is a reduction of ~1 billion tonne CO₂/year

Source: Assessment report on CO₂ reduction potential due to IMO Energy Efficiency Regulations”, MEPC 63/INF.2, October 2011
**Overall objective:**
Build capacity in developing countries to catalyze overall reductions in GHG emissions from international shipping

**10 GloMEEP Lead Pilot Countries:**
Argentina, China, Georgia, India, Jamaica, Malaysia, Morocco, Panama, Philippines and South Africa
Building on the success - Replicating the Glo-X model
Numerous studies have compared ballast water and biofouling with regard to the introduction of IAS

<table>
<thead>
<tr>
<th>Location</th>
<th>Ballast</th>
<th>Biofouling</th>
<th>Both</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Francisco</td>
<td>48%</td>
<td>55%</td>
<td>?</td>
</tr>
<tr>
<td>New Zealand</td>
<td>3%</td>
<td>69%</td>
<td>21%</td>
</tr>
<tr>
<td>Port Phillip Bay</td>
<td>20%</td>
<td>78%</td>
<td>?</td>
</tr>
<tr>
<td>Hawaii</td>
<td>18 sp.</td>
<td>212 sp.</td>
<td>?</td>
</tr>
<tr>
<td>North Sea</td>
<td>38%</td>
<td>57%</td>
<td>?</td>
</tr>
<tr>
<td>North America</td>
<td>20%</td>
<td>36%</td>
<td>34%</td>
</tr>
<tr>
<td>Algae - Worldwide</td>
<td>~12%</td>
<td>~74%</td>
<td>?</td>
</tr>
<tr>
<td>Australia</td>
<td>33%</td>
<td>79%</td>
<td>?</td>
</tr>
<tr>
<td>Brazil</td>
<td>34.4%</td>
<td>89.8%</td>
<td>33.8%</td>
</tr>
<tr>
<td>California</td>
<td>~21 sp.</td>
<td>43 sp.</td>
<td>-</td>
</tr>
<tr>
<td>Canadian Arctic</td>
<td>7 sp.</td>
<td>18 sp.</td>
<td>-</td>
</tr>
</tbody>
</table>

- The BWM Convention addresses the transfer of IAS in ballast water and sediments
- The Biofouling Guidelines (not mandatory) address the transfer of IAS on ships’ hulls through fouling
Addressing the global impacts from aquatic biofouling

Involving sectors and stakeholders to removing barriers and build capacity
Thank you for listening

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