Transnational Environmental Governance: Orchestration and Upgrading in Maritime Shipping

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Outline

• Analytical entry points of overall project
  – Transnational Environmental Governance (TEG) and its orchestration
  – ‘Buyer-driven’ environmental upgrading in global value chains (GVCs)

• Case studies
  – Shipping (with Rene’ Taudal Poulsen and Jane Lister) – today’s talk
  – Aviation biofuels (with Lasse Folke Henriksen)
  – Both capital intensive, mobile assets
  – Opposite environmental upgrading/downgrading trajectories

• Publications/ongoing work
  • Henriksen and Ponte (2015) “Public Orchestration, Social Networks and Transnational Environmental Governance: Lessons from the Aviation Industry”, under review
1. Transnational Environmental Governance and its Orchestration

• ‘Transnational actors operating in a political sphere in which public and private actors interact across borders and political jurisdictions’ to address environmental concerns (Andonova et al 2009: 69)

• Two strands of literature (in poli sci, IPE public policy, env studies)
  – On strategies that nation states and IOs can use to shape business and individual behaviour -- environmental outcomes
  – Transnational experiences and ‘enterpreneurial’ governance initiatives

• Concerns over fragmentation and ‘governance deficit’
Orchestration

- National and international public organizations using combinations of
  - indirect tools (intermediation, collaboration)
  - direct regulatory tools, regulatory threats and/or incentives (hierarchy, delegation)

- Existing literature on orchestration
  - Focused on institutional features and trajectories of TEG, and on their instrumental and structural elements
  - We contribute with a typology of 4 dimensions that can shape orchestration possibilities:
    - issue visibility
    - interest alignment
    - issue scope
    - regulatory fragmentation and uncertainty
Direct and indirect orchestration tools

• Direct
  • Regulation, threat of regulation
  • Incorporation of private standards in regulation
  • Direct subsidies and mandates
  • Public procurement and other direct forms of financial support and investment

• Indirect
  • facilitating, indirectly influencing, and/or participating with other stakeholders in key initiatives or groups
    – such as industry associations, multi-stakeholder initiatives and industry conferences
  • funding research projects
  • political and ideational support (white papers, visions, etc)
  • social network engineering
2. Environmental upgrading in GVCs

- Global Value Chain analysis
  - Disintegration of production and its functional integration in GVCs
  - IPE, economic sociology, economic geography

- Governance
  - Ability to shape functional division of labour in GVCs and (re)allocate value distribution
  - Buyer-driven vs Producer-driven governance; polarity
  - Hierarchy, captive, relational, modular, market

- Upgrading
  - Economic upgrading: Product, process, functional, inter-chain upgrading (countries, regions, firms)
  - We contribute to emerging debate on *environmental upgrading*
    - ‘Improving the environmental impact of value chain operations’
    - Difficult to achieve along the GVC due to fragmentation of operations
3. Case study: Shipping

- Sustainability credentials of shipping are being questioned
  - Lagging behind on-shore industries
  - Opposite trajectory of aviation in terms of environmental upgrading
- Industry is mostly with head in the sand
- But some voluntary initiatives are emerging
- Important (and mostly unfulfilled) orchestrating role **could** be played by IMO
- Role and limitations of ‘buyer-driven greening’
  - Role of cargo buyers in pushing the agenda
How is shipping lagging?

• Maritime environmental protection standards lag behind onshore sectors
  – Timing: Later responses from shipping than onshore industries
  – Specific protection standards lower than onshore standards
  – Trends in emissions: Maritime on the rise, onshore on the decline

Environmental footprint

Key environmental problems currently discussed by policy makers and shipping industry:

• CO2-emissions
• SOx-emissions
• NOx-emissions
• Particulate Matter-emissions
• Black Carbon-emissions
• Invasive species (ballast water and hull biofouling)
• Underwater noise
• Hazardous material disposal (scrapping/dismantling of ships on beaches, ‘beaching’)

CO₂ emissions, by source

IMO Second GHG Study 2009

Gram CO₂ per ton-kilometer
IMO emission scenarios 2050

Source: Third IMO GHG Study, 2014
Regulatory status

$\text{CO}_2$

$\text{NO}_x$

$\text{SO}_x$

Invasive species
Regulatory status

Key environmental problems currently discussed by policy makers and shipping industry:

- **CO2-emissions**
  - SEEMP (ship operation) and EEDI (ship design/only new ships) agreed under IMO/MARPOL
  - EU MRV (monitoring, report and verification) from 2018

- **SOx-emissions**
  - Regional SECAs from 2015; Possibly global SECA from 2020

- **NOx-emissions**
  - NOx Tier II in place; regional Tier III/NECA from 2016

- **Particulate Matter-emissions** (under consideration)
- **Black Carbon-emissions** (under consideration)
- **Invasive species** (ballast water and hull biofouling)
  - Ballast water (BWMC from 2004 not yet fully ratified + US unilateral rules from 2016)
  - Hull biofouling (Expected in the future, no agreement)

- **Underwater noise** (Expected)
- **Disposal of hazardous material/scraping of ships** (No regulation in place; IMO Hong Kong Convention only ratified by three countries)
Limited orchestration

• Key issue: multi-jurisdictional nature and mobility of assets makes regulation difficult (+ flags of convenience)
• Lack of IMO orchestration

4 key factors

1. Issue visibility:
   • Environmental damage not immediately visible
     – except oil spills
   • Shipping has a B-2-B nature
     – out of sight for consumers

2. Interest alignment:
   • Historically low cooperation between stakeholders
   • Shipping lobbyist have successfully established a ’green image’

3. Issue scope:
   • Diverse, complex issues challenges possible orchestrators

4. Regulatory fragmentation and uncertainty:
   • Regulatory uncertainty challenges ‘green’ first-movers
Buyer-driven greening? Different dynamics in different shipping segments

Dry bulk

Tanker

Container
## ‘Big brand’ sustainability

<table>
<thead>
<tr>
<th>Company</th>
<th>Sustainability Program</th>
<th>Launch</th>
</tr>
</thead>
<tbody>
<tr>
<td>McDonald’s</td>
<td>Sustainable Land Management</td>
<td>2011</td>
</tr>
<tr>
<td>Best Buy</td>
<td>Greener Together</td>
<td>2010</td>
</tr>
<tr>
<td>Procter &amp; Gamble</td>
<td>Sustainability Vision</td>
<td>2010</td>
</tr>
<tr>
<td>Unilever</td>
<td>Sustainable Living Plan</td>
<td>2010</td>
</tr>
<tr>
<td>PepsiCo</td>
<td>Performance with Purpose</td>
<td>2009</td>
</tr>
<tr>
<td>FedEx</td>
<td>Earth Smart</td>
<td>2009</td>
</tr>
<tr>
<td>Nike</td>
<td>Considered Design</td>
<td>2008</td>
</tr>
<tr>
<td>IBM</td>
<td>Smarter Planet</td>
<td>2008</td>
</tr>
<tr>
<td>Starbucks</td>
<td>Shared Planet</td>
<td>2008</td>
</tr>
<tr>
<td>Marks &amp; Spencer</td>
<td>Plan A</td>
<td>2007</td>
</tr>
<tr>
<td>Coca-Cola</td>
<td>Live Positively</td>
<td>2007</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>Healthy Planet</td>
<td>2006</td>
</tr>
<tr>
<td>Walmart</td>
<td>Sustainability Commitment</td>
<td>2005</td>
</tr>
</tbody>
</table>
# Container shipping demands

<table>
<thead>
<tr>
<th>Top Ocean Container Importers to US</th>
<th>TEU 2012</th>
<th>Carbon commitment?</th>
<th>Address transport?</th>
<th>Address maritime shipping?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Walmart</td>
<td>720,000</td>
<td>YES</td>
<td>YES</td>
<td>X</td>
</tr>
<tr>
<td>2. Target</td>
<td>496,200</td>
<td>YES</td>
<td>YES</td>
<td>X</td>
</tr>
<tr>
<td>3. Home Depot</td>
<td>315,400</td>
<td>YES</td>
<td>YES</td>
<td>X</td>
</tr>
<tr>
<td>4. Dole Food</td>
<td>235,000</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>5. Lowe’s</td>
<td>229,000</td>
<td>YES</td>
<td>YES</td>
<td>X</td>
</tr>
<tr>
<td>6. Sears Holding</td>
<td>201,500</td>
<td>Under development</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7. Chiquita</td>
<td>149,400</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>8. LG Group</td>
<td>147,300</td>
<td>YES</td>
<td>YES</td>
<td>X</td>
</tr>
<tr>
<td>9. Heineken</td>
<td>144,800</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>10. Philips Elec</td>
<td>124,700</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

% Commitment 90% 90% 40%

Source: Poulsen, Lister and Ponte 2015
## Multi-stakeholder initiatives

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Ship-types &amp; # ships</th>
<th>Issues covered</th>
<th>Scoring framework</th>
<th>Membership fee</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Cargo Working Group (CCWG) (cargo owners)</td>
<td>Container (2300)</td>
<td>CO2, Sox, PM, Nox, Water and Waste; Chemical use</td>
<td>Yes (Based on Nox, Sox, CO2 and access to shore power in port)</td>
<td>Fee for all members</td>
<td>Partly performance data received from ship-owners; Partly vessel design specification</td>
</tr>
<tr>
<td>Clean Shipping Index (CSI) (cargo owners)</td>
<td>Container, Dry bulk, ro/ro, cruise (2,000)</td>
<td>CO2, SOx, Nox, Water and Waste; Chemical use; Hull-fouling</td>
<td>Yes (Based on CO2, Nox, Sox, Chemical and water-use/waste)</td>
<td>Free for cargo owners; Costs for ship-owners for data verification</td>
<td>Partly performance data received from ship-owners; Partly vessel design specification</td>
</tr>
<tr>
<td>Environmental Ship Index (ESI) (ports)</td>
<td>Container, dry bulk, general cargo, ro/ro, cruise (&gt;2.000)</td>
<td>CO2, Sox, PM, Nox</td>
<td>Step rating (with four levels); For CO2 the scheme only asks if emissions are calculated or not (Yes/no)</td>
<td>Information not available</td>
<td>Partly performance data received from ship-owners; Partly vessel design specification</td>
</tr>
<tr>
<td>Green Award (ports)</td>
<td>Dry bulk, tankers, inland barges and LNG (&gt;1.500)</td>
<td>CO2, Sox, PM2, Nox, Water and waste, anti-fouling pant</td>
<td>Information not available</td>
<td>Shipowner fee</td>
<td>Information not available</td>
</tr>
<tr>
<td>RightShip/Shippingefficiency.org (charterers)</td>
<td>Container, dry bulk, tankers, general cargo, ro/ro, cruise (60,000)</td>
<td>CO2</td>
<td>Step rating (with seven steps)</td>
<td>Subscription fee for detailed data sets</td>
<td>Based on vessel design specifications</td>
</tr>
<tr>
<td>Triple-E (ship owners)</td>
<td>Container, dry bulk, tankers, general cargo, ro/ro, cruise (33)</td>
<td>CO2, Sox, PM, Nox, Water and Wasterwater; Chemical use</td>
<td>Step rating (with four levels)</td>
<td>One time fee for ship owners when rating is issued</td>
<td>Partly based on vessel design specifications; partly based on performance data</td>
</tr>
</tbody>
</table>

Furthermore, the Clean Cargo Working Group (CCWG) has created a scoreboard and rating system to encourage cargo owners to prioritize sustainability. The Clean Shipping Index (CSI) is a tool designed to help cargo owners and shipowners benchmark their performance and make informed decisions. The Environmental Ship Index (ESI) evaluates environmental performance through a tiered rating system. The Green Award (ports) initiative focuses on dry bulk tankers, inland barges, and LNG ships, aiming to reduce environmental impacts. RightShip/Shippingefficiency.org is a charterers initiative that scores ships based on design specifications. Triple-E, aimed at ship owners, provides a step rating system for sustainability.
CCWG

“The Clean Cargo Working Group (CCWG) is industry initiative made up of leading cargo carriers and their customers, dedicated to environmental performance improvement in marine container transport through measurement, evaluation, and reporting.

Why Join?
Join CCWG members in creating and using the practical tools for measuring, evaluating, and reporting the environmental impacts of global goods transportation. These tools and the dialogue between members and key stakeholders help:

• Ocean freight carriers track and benchmark their performance and easily report to customers in a standard format.
• Cargo owners review and compare carriers' environmental performance when reporting and making informed buying decisions.”

http://www.bsr.org/en/our-work/working-groups/clean-cargo,
Clean Shipping Index

This is example data from Clean Shipping Index based on self-assessment by the shipping companies.

www.cleanshippingindex.com 2013
Lessons

• Effective orchestration impinges upon:
  – Improving issue visibility (or focus on what is visible)
  – Multi-stakeholder collaboration that aligns public and private objectives (easier said than done)
  – Narrowing scope (but is this a good idea?)
  – Harmonization of private initiatives and coherence of multilevel public governance (but how?)

• Buyer-driven greening more likely when:
  – There are clear governing ‘buyers’ in the value chain
  – These ‘buyers’ are consuming-facing companies with reputational risks
  – There is clear and enforceable global regulation and alignment between regulation and voluntary initiatives