The collection of ship’s waste in Belgian seaports

ICP 17 on marine debris, plastics and microplastics
13 – 17 June 2016
United Nations HQ, New York
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Shipping as a source of marine litter

- The main sea/ocean-based sources of marine litter
  - merchant shipping, ferries and cruise liners
  - fishing vessels
  - pleasure craft
  - military fleets and research vessels
  - (offshore oil and gas platforms)
  - (aquaculture)
Shipping as a source of marine litter
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- **Sources of marine litter (estimates):**
  - 80% land-based
  - 20% sea-based

However:

- **D North Sea:** shipping, fisheries and offshore are main sources of beach litter *(Fleet, 2003)*

- **NL North Sea:** up to/ over 40% sea-based sources *(Dutch Coastguard)*

- **Texel (NL):** up to 90% of plastic litter from shipping/fisheries *(van Franeker, 2005)*
Composition of ship’s garbage

- A substantial volume of ship’s waste consists of recyclable and (possibly) valuable materials:
  - plastics
  - paper/cardboard
  - metals
  - mixed wastes (including plastics)

- Volume of MARPOL Annex V waste collected in 2015 in 3 Flemish ports (Antwerp, Ghent, Zeebrugge): **23,944 m³**
Composition of ship’s garbage

Garbage from merchant vessels: *(data: Port of Antwerp Authority)*

MARPOL Annex V waste from maritime shipping (in m³)
collected in port of Antwerp 2014

- cargo associated waste
- small hazardous wastes
- food waste
- cargo residues/wastewaters
- plastics
- other
Regulatory framework

MARPOL:
- International Convention on Prevention of Pollution from Ships
- provision of adequate port reception facilities
- revised Annex V, from 01.01.2013: discharge at sea is prohibited, unless explicitly allowed and under certain conditions (e.g. food waste, non-HME cargo residues)

EU: Directive 2000/59/EC on PRF for ship-generated waste and cargo residues:
- provision of adequate port reception facilities
- additional requirements:
  - port waste reception and handling plans
  - mandatory delivery for ships (with exceptions)
  - cost recovery systems (‘polluter pays’ principle)
  - enforcement schemes
How to get ship’s waste ashore?

- Availability of adequate PRF
- Incentive schemes: fee systems

For all types of ships and ports...
Flemish approach for the collection and management of ship’s waste.

Taking into account port’s and ship’s characteristics: taylor made approach:

4 target groups:
- commercial ports
- fishing ports
- recreational ports
- inland waterways/terminals

• all have similar fee system
• all have similar waste reception and handling plans
• all have strong stakeholder involvement: consultation forums
Adequacy of PRF in Flemish ports

“Adequacy” according to MARPOL:
- use of PRF not causing undue delay for ships
- meeting the needs of the ships using the PRF

In Flemish ports:
- sufficient collection/storage capacity (m³)
- can be mobile (barge/truck) or fixed facility
- high service levels: 24/7, maximum service
- competitive pricing

➔ in commercial ports: open market approach
  ✓ competition between authorized PRF
  ✓ business opportunity: investments by private contractors
PRF in Flemish merchant ports
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PRF in Flemish fishing ports
PRF in Flemish recreational ports
PRF in Flemish recreational ports
Fee systems for ship’s waste

→ only EU requirement (not MARPOL): art. 8 of Directive 2000/59/EC

→ principle: “costs of PRF, incl. treatment and disposal, shall be covered through the collection of a fee from ships”

→ provide no incentive to discharge waste into the sea

→ merchant ships: “each ship calling EU port shall pay significant fee, irrespective of actual use of PRF”

→ fishing and recreational vessels: more flexibility on fee systems
Flemish fee system for merchant ports

• **open market** approach:
  - ship’s waste as a business opportunity for private waste contractors: no (or limited) investments needed by port authority
  - free choice for ship owner/operator

• **competition** between PRF:
  - competitive prices and high service levels

• providing **maximal incentive** to deliver waste: positive financial incentive
  - partial reimbursement of costs depending on waste delivered: reduced cost for ships that deliver

• linked with state-of-the-art **information and monitoring system**:
  - reducing administrative burden
  - enforcing authorities have access
Flemish fee system for merchant ports

Total collected ship's waste (m$^3$) in ports of Antwerp, Ghent and Zeebrugge

- MARPOL Annex I
- MARPOL Annex II
- MARPOL Annex IV
- MARPOL Annex V

Years: 2004 to 2015
Flemish fee system for merchant ports

MARPOL Annex V (in m³) collected in 3 Flemish merchant ports
Flemish fee system for fishing ports

- yearly fee: based on engine power of ship (900 to 1800 euros)
- right to deliver waste, without extra charges
- other vessels: pay a fee per call
- system is managed by regional fishing association, controlled by environmental authorities
Flemish fee system for recreational ports

- yearly fee, included in membership (± 45 euros)
- visitors (non-members): fee per call
- limited amounts of waste can be delivered without extra charges:
  - oil, paints, solvents, metals, mixed household waste
- expired pyrotechnics: not accepted by port (are to be returned to seller)
Conclusions:

- shipping is a relevant source of marine litter

- proper collection and management is important:
  - discharge of ship’s waste at sea has environmental impact
  - waste is potential source of materials
  - greening of maritime industry: competitive advantage for ports

- Flemish approach:
  - strong and positive incentive for delivery
  - tailor-made approach, taking into account port characteristics
  - strong stakeholder involvement: consultation forums
Thanks for your attention
Are there any questions?

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