KEY STORIES

Ballast water and invasive alien species

WHY LOOKING AT.... BALLAST WATER AND INVASIVE ALIEN SPECIES?

Nowadays, 90% of the word's global trade is carried by the international shipping industry. A fifth of transported goods are loaded to, or unloaded from, large vessels in European ports. To ensure vessels' stability and manoeuvrability, ships carry ballast water. Not a 'small' passenger indeed, as 10 billion cubic metres of ballast water is used every year, enough to fill 4 000 Olympic swimming pools! Abstracted in coastal waters in the departure region and discharged into the sea at arrival, ballast water contains biological materials, including plants, bacteria, microbes, small invertebrates, eggs, cysts and larvae of various species. The transported so-called non-indigenous species (NIS) can become invasive alien species (IAS) when competing with the local flora and fauna with potentially severe damage to the environment, human health or economic interests. IAS also originate from activities of smaller boats (e.g. ferry/cruising/yachting/fishing boats), including via hull fouling.

Actions are already taken for addressing IAS via scientific, technological and regulatory responses (e.g. the 2008 Marine Strategy Framework Directive (MSFD) or the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWMC) which entered into force in 08/09/2017). Yet, being successful requires strengthening the existing solution package (e.g. developing international regulation on hull fouling), co-operation and mobilising all involved (public authorities, port authorities, inspectors, technology developers, scientists, shipowners, crew, etc.), including by strengthening awareness and capacity.

WHICH CHALLENGES FACED FOR ADDRESSING... BALLAST WATER AND INVASIVE ALIEN SPECIES?

Constraints to the implementation of the BWMC includes high cost of BWTS, technicalities of installation (when retrofitting), operation and maintenance, reluctance by shipowners to implement new systems when (financial) burden is no equally shared among socio-economic groups. Additional difficulties stem from some current gaps and unclarities in the BWMC itself (e.g. contingency measures, same risk areas, etc.) and differences in the types of approvals between countries/ flags. Technical developments to address IAS have intensified, focusing on prevention (BWTS), monitoring, early detection and eradication.

Addressing the problem requires shared responsibility and actions (shipowners to install and operate BWTS systems, policy makers to take legal action to ratify and enforce the BWMC, port authorities to provide adequate port-based services, scientists and engineers to imagine economically optimal solutions…) based on dialogue and mobilisation at local, national, regional (including regional seas conventions) and international levels.

WHAT CAN OCEAN LITERACY DELIVER?

Ocean literacy (on the impacts, processes, services and technologies) can boost solutions to overcome current challenges and unlock

the potential for sustainable sea transportation while safeguarding the environment. It needs to be given its due role (including in terms of financial and human resource allocation) to support effective change in practice of all involved.

What should be **the focus** of future ocean literacy initiatives? A clear multi-fold focus (regulatory, technical, environmental, socio-economics…) customized for different actors, addressing:

- The legislative and regulatory framework contributing to its common understanding
- Ballast Water System type approvals, and how to contribute to their harmonization
- Developing and operating multi-purpose IAS monitoring programmes
- Role and responsibilities of crews
- Drivers to research and innovation on alternative ballast water solutions
- Procedures for data exchange/open access on challenges, experiences and solutions
- Incentives and benefits to enhance the installation and operation of BWTS on ships

What do we learn from the Workshop 'Ballast Water Management and the Marine Environment: Challenges and Opportunities', *held in Athens, Greece, on 28/02/2018 (funded under the EU project MARINA (marinaproject.eu)*

- Open access to data and information regarding (a) existing local and regional ballast regulations (and criteria), and (b) the performance of operational BWTS is essential. Some data and information might be sensitive, so access and dissemination should follow sound protocols, use designated platforms and be coordinated by a neutral recognized body.
- Hands-on crew training, during all implementation phases (from commissioning to on-board operation) is essential – it needs to be strengthened.