



Marine litter: sources and challenges

Aleksandar Shivarov

Varna, 29 July 2015

What is it?

Any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment by humans.



Contents and sources

- 80% from land sources
 - plastic bags, bottles, packaging, cigarette butts
 - plastic waste is not the main component of solid waste, but is the most important part of marine litter and forms nearly 100% of floating litter
- 20% from sea-based activities
 - shipping
 - offshore installations
 - illegal dumping
 - discarded or lost fishing gear

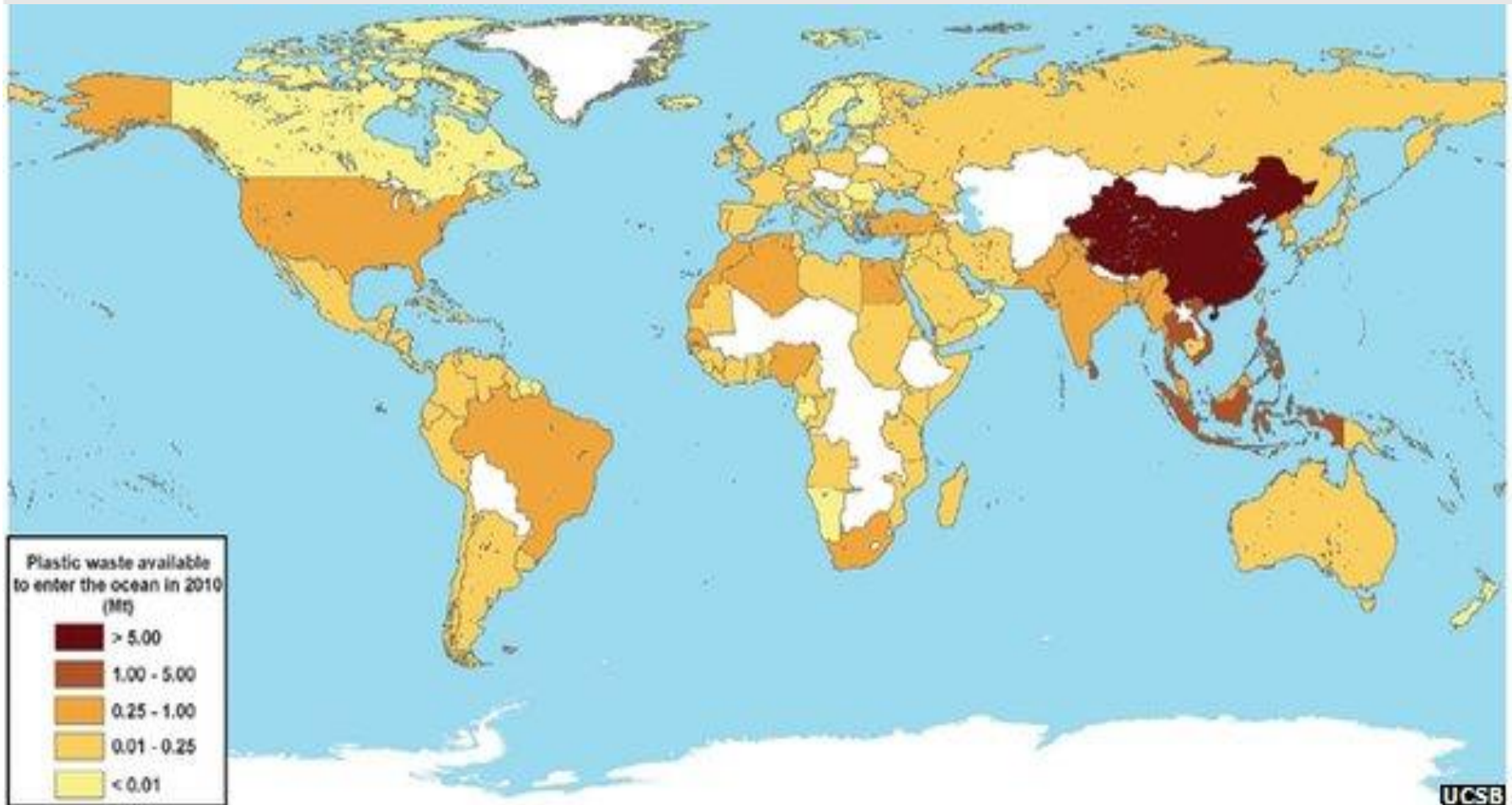
SOURCES OF MARINE LITTER



Distribution

- Despite national and international efforts the situations is worsening
- Every year around 8 m tonnes of plastic waste enter the oceans (Jambeck, J. et al. 2015)
- The expectations are that the flow will increase to 17.5 m tonnes per year without additional measures

Plastic waste



Coastal pollution

Major types of litter on Black Sea beaches
on average 784 items per 100 m, over 90 % plastic waste

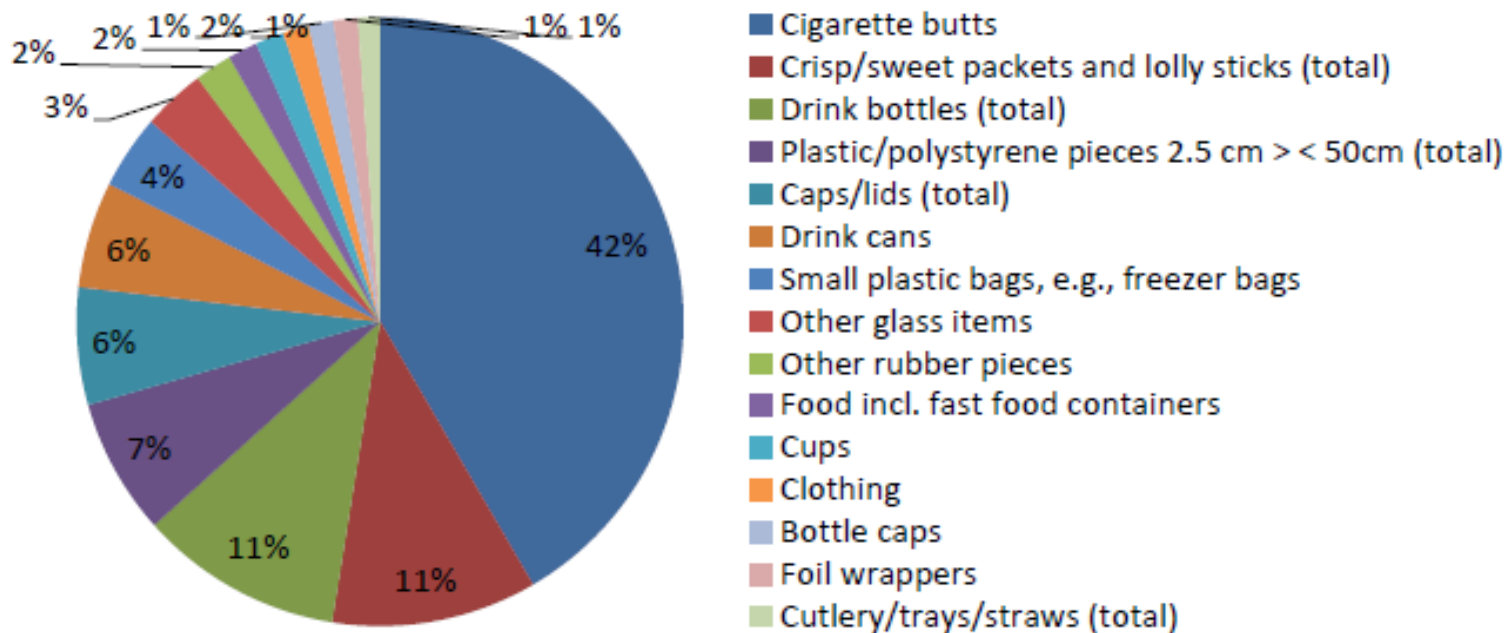


Figure 4: Top fifteen beach litter items for the Black Sea, based on 7 OSPAR screenings.

Impact

- Environmental
- Social
- Economic



Environmental impact

- Increased mortality of marine species
- Entanglement in fishing gear
- Swallowing of microparticles
- Facilitating invasive species transportation
- Concentration and emission of toxic substances

Social damage

- Decrease recreational, esthetical and educational value of beaches and coasts
- Health risks
- Threat to shipping

Economic losses

- Direct losses
- Decreased incomes
- Affected sectors
 - aquaculture
 - fishing
 - shipping
 - tourism
 - yachting

Classification

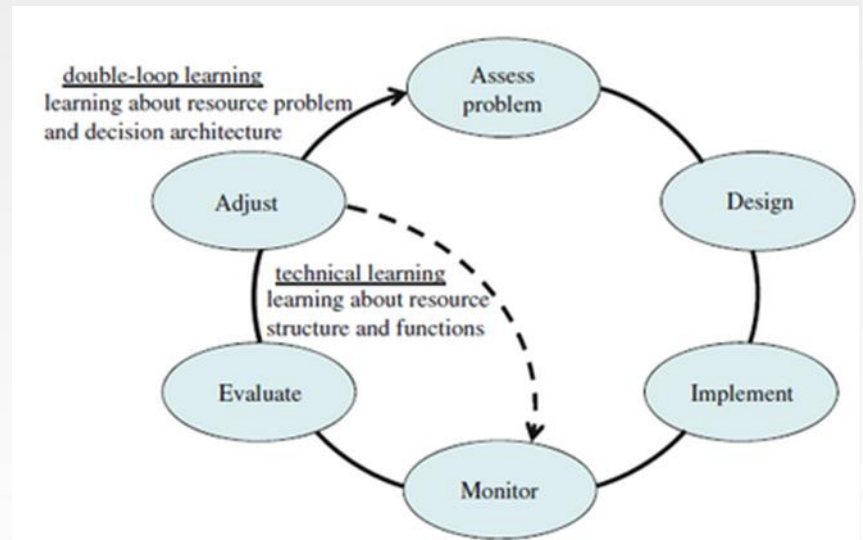
- Macroparticles > 25 mm
- Mesoparticles 5 – 25 mm
- Microparticles < 5 mm
 - large 1 – 5 mm
 - small under 1 mm
- *Nanomaterials – aggregate of particles measuring 1 – 100 nm (1 nm = 10⁻⁶ mm)*

Measures and goals

- Honolulu strategy, 2011
- Regional conventions
 - Regional Plan on Marine Litter Management in the Mediterranean, 2014
- EU: „Towards a circular economy“, 2014
 - Quantitative goal for decreasing the top ten marine litter types on the beaches and fishing gear at sea by 30% until 2020
 - Approved lists by marine regions

Need for change

- Waste generation from land-based sources
- Changes in consumption patterns
- Setting quantitative targets
- Tacking stock of the situation – MSFD
- Introducing regular monitoring
- Adaptive management



Role of NGOs: best practices

- Engaging decision makers
 - Parliament
 - Ministry of Environment
 - Regional environmental inspectorates
 - Basin directorates
 - Local authorities
- Promoting stakeholders dialogue

Community involvement

- Citizen science – Marine Litter Watch
 - contribution to assessment and monitoring
- Raising awareness
 - Informing the public
 - Activities with students and young people
 - Art performances and products

