**European Maritime and Fisheries Fund** 



# MARINE LITTER



SUSTAINABLE BLUE ECONOMY: A SYSTEMIC APPROACH TO TACKLE MARINE LITTER EMFF marine litter projects closing event

February,11th,2021

**F** GALGANI

# Production of plastics: to reach 400 M tons







#8 M tons of plastic is littered every year in the ocean



### Plastic input into the oceans



Note: the map utilizes a dimensionless model source input binne on 5x5 degree bins. Circles are indicative of the amplitude of the phenomena and do not express guantitative information. Sources: IPCC scenario SRES 82; Jambeck, J., R., et al., Plastic waste inputs from land into the ocean Science, 2015; Watson, R. A., et al., Global marine yield halved as fishing intensity redoubles, 2013; Halpern, B. S., et al., A Global Map of Human Impact on Marine Ecosystems, 2008.







# **SOURCES ARE DIVERSE (# 20% are sea based)**









- Up to 64 millions Items/km
- 250 billions floating particles

## LITTER DEGRADE SLOWLY AND TO MICROPARTICLES

# **Regional differences**







Sea floor (MEDITS project)

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Floating Plastics (Liubartseva et al., 2018)

### ENTANGLEMENT, INGESTION, TRANSPORT OF SPECIES ARE THE MOST ADVERSE EFFECTS







# **Challenges in the measurement of Marine Litter?**



## **Cost-effective methods**





## Automated sensors





## Small sized particles

#### **Aerial surveys**





**Risk assessment** 



## **Indicators for** Entanglement



# understand harm





## SOCIO ECONOMIC IMPACTS















# Not Many Solutions







## WHAT IS DOING EUROPE?







# Fishing, Aquaculture and Marine Litter

## FACTS



FAO (2018) & IMO (2020)

- Global fish production in 2016 at **171 million tons**
- # 60 millions fishers of which 67.3% (40.3 million) were engaged in capture fisheries
- **700 million recreational fishers** (90 millions in china only)

(Macfadyen et al., 2009): 640,000 tonnes of ALDFG in the ocean every year (< 10% of Marine Litter) (Pham et al., 2014) Litter from fishing may reach 100% of litter (sea floor, Azores)

KIMO/ Eunomia: Cost to fishing vessels: € 20,000/vessel/y & 70 million/Y in EU 1 TO 5% TOTAL REVENUE LOSS for the fisheries & aquaculture sector (costs to fishing vessels, Ghost fishing, etc.)



INTERNATIONAL

MARINE ENVIRONMENT PROTECTION COMMITTEE 75th session Agenda item 8

MEPC 75/INF.23 24 January 2020 ENGLISH ONLY Pre-session public release:

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FOLLOW-UP WORK EMANATING FROM THE ACTION PLAN TO ADDRESS MARINE PLASTIC LITTER FROM SHIPS

Progress report of the GESAMP Working Group on Sea-based Sources of Marine Litter

Note by the Secretariat

#### IMO/ GESAMP WG 43: SEA-BASED SOURCES OF MARINE LITTER – A REVIEW OF CURRENT KNOWLEDGE AND ASSESSMENT OF DATA GAPS

#### FISHING AND AQUACULTURE GENERATE MARINE LITTER

### FISHING

- ALDFG (Nets, traps & pots, lines, ropes, lests, FAD, etc.)
  Fishing related litter (ex: Ice boxes)
- 3) Fishing vessels operations



### AQUACULTURE

- 4) Aquaculture equipment and plastics (Shellfish bags, nets, ropes, cages, etc.)
- 5) Aquaculture-related litter (vessels operations)



### - IMPACT OF LOST GEAR

- Ghost fishing
- Cleaning (mainly beaches) and repair,
- Tourism is affected
- Marine habitats affected
- **Risk to navigation**, including to fishermen.
- Generation of microplastics,
- Transport of invasives species (Tsunami)

## - FISHING INDUSTRY IS AFFECTED BY MARINE LITTER

- ALDFG Bycatch = up to 1-3 % (Merlucius/MED), 5% (Cod, Baltic) and >20% (Halibut/Norway) of stocks lost by Ghost fishing (IMO, 2020)
- lost fishing opportunities
- Retrieval costs
- Maritime accidents
- Clean nets & catches, Handle dangerous items
- Quality of catches may be altered (paints, dangerous chemicals, etc.)





















# **Solutions**

**PREVENTION** (Information, Circular design, Prevention of losses, Gear Tagging, Bans) AT SEA (Favor recycling, Extended Responsability of Producers, Fishing For litter, Port Reception Facilities, valorize marine litter (energy?)

# Data and knowledge gaps

**SCIENCE** (data, Appropriate methodologies, risk assessment, *Distinction between actively/ALDGF Quantifying ALDFG from recreational fisheries,* Design New sustainable materials)

**POLICIES/ MANAGEMENT (Socioeconomic impacts of fishing/aquaculture based litter, FADs as sources of marine litter, Aquaculture operations as sources of marine litter** 





# Additional information:

EU commission : https://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/index\_en.htm

Vital graphics: https://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/pdf/Marine\_litter\_vital\_graphics.pdf GESAMP reports: http://www.gesamp.org/publications/guidelines-for-the-monitoring-and-assessment-of-plastic-litter-in-the-ocean UN links: https://www.un.org/pga/73/plastics/

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UNEP/ GMPL/GPA : https://gpmarinelitter.org

**UNEP/MAP** marine litter: https://web.unep.org/unepmap/

