



NORDLANDSFORSKNING
NORDLAND RESEARCH INSTITUTE

Marine plastic pollution (from fisheries)

- magnitude of the problem, causes and solutions

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North Calotte Waste Group Meeting 19.10.2017, Bodø





«The worst part is that we clean these beaches every year, and it is still the same amount of litter here year after year»

Ingunn Reinsnes Moen, Sortland,
after the beach clean-up 2017

Source: Bladet, Vesterålen



Berit Tunstad carrying some of the plastic waste collected between the bridge of Strand and Kringel point. (Foto: Sverre Idar Lakså)



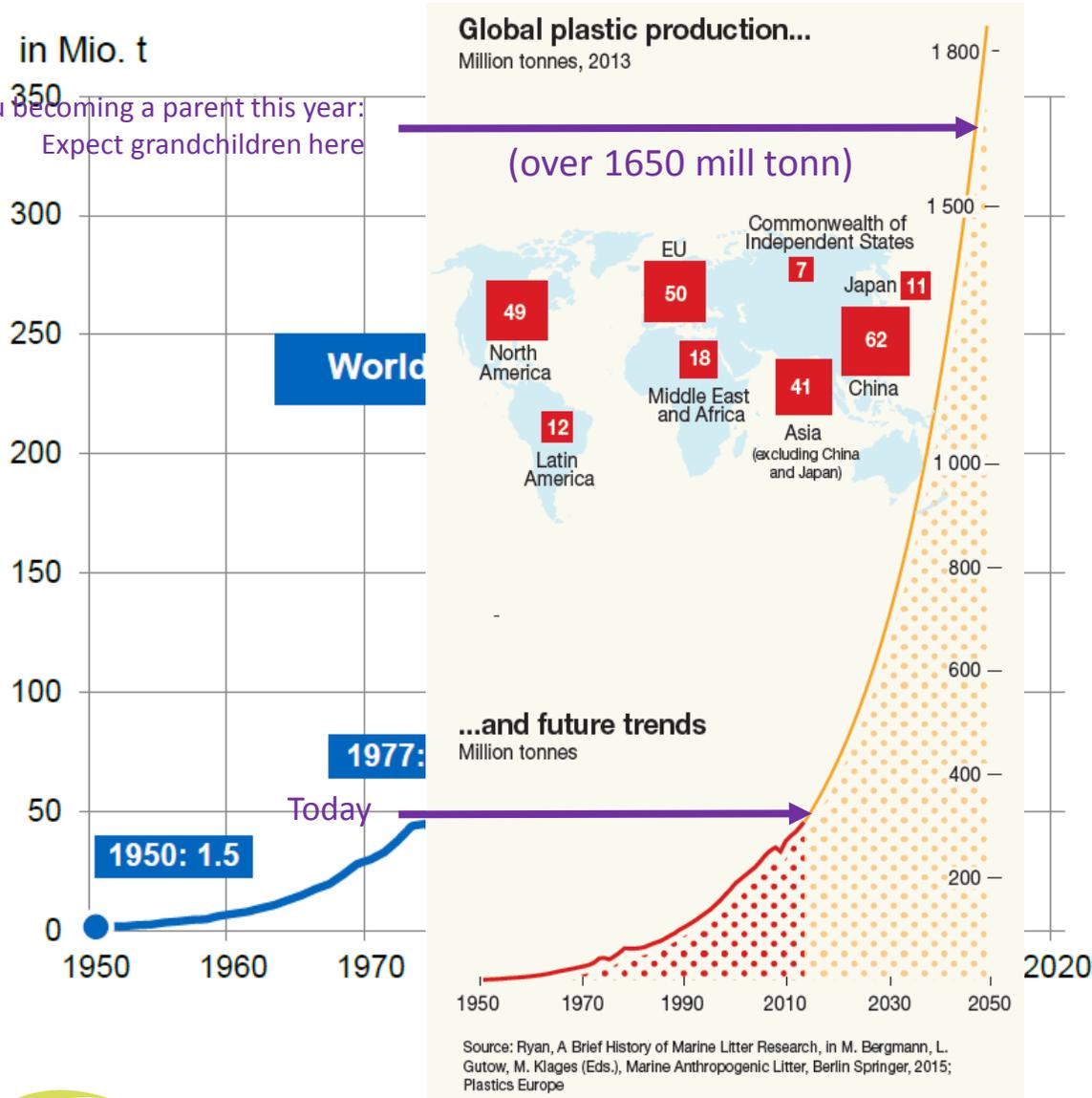


Global plastic-production

= Ca 50 kg per person per year

Norway: Ca 100 kg plastic waste per person registered in 2011

For those of you becoming a parent this year:
Expect grandchildren here

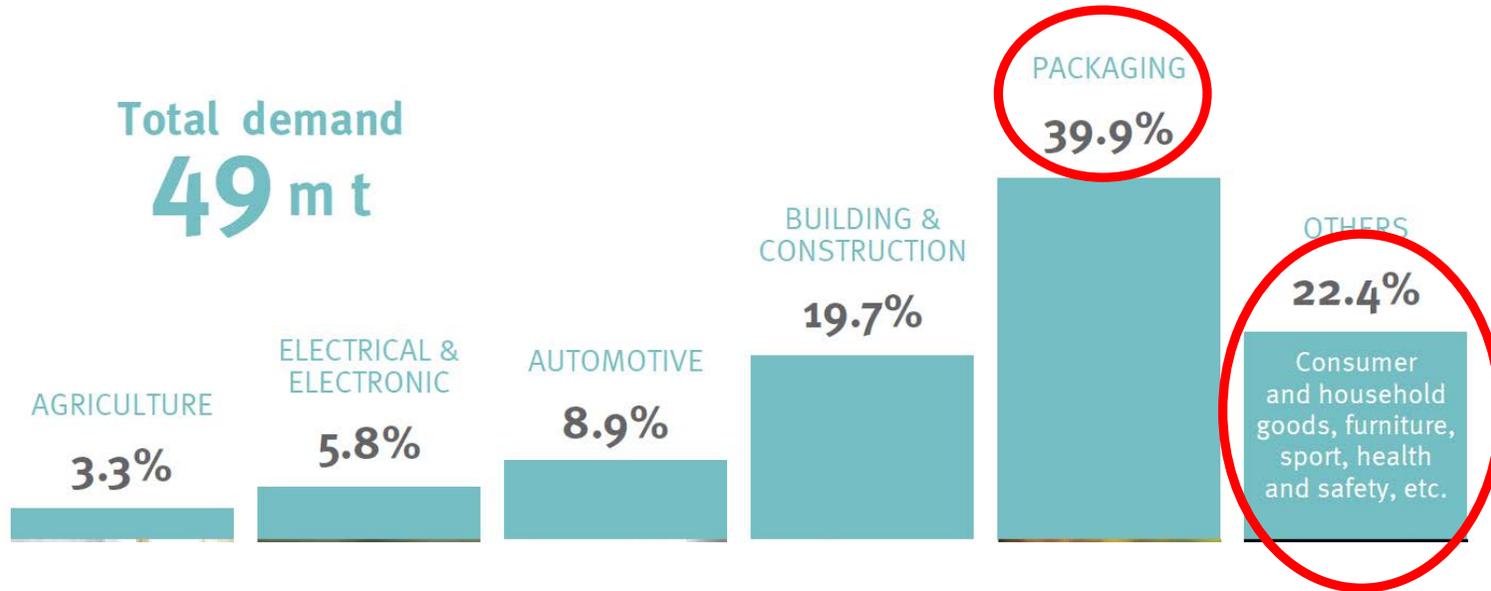


Source: Plastics Europe





What do we use the plastic for?

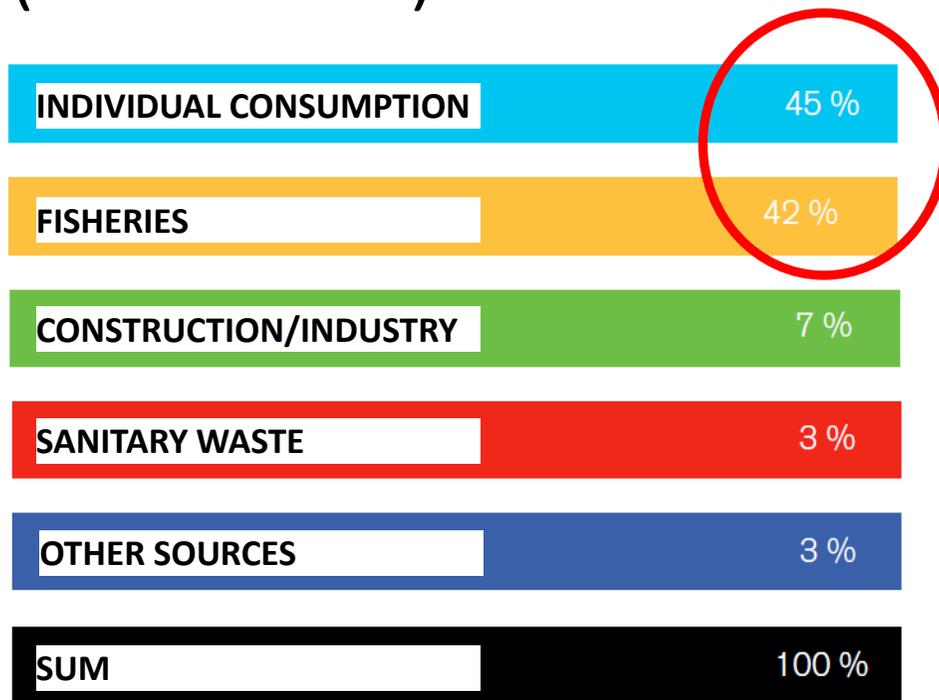


Source: Plastics Europe «Plastics – the Facts 2016»





National beach clean-up action 2016 (377 tons)

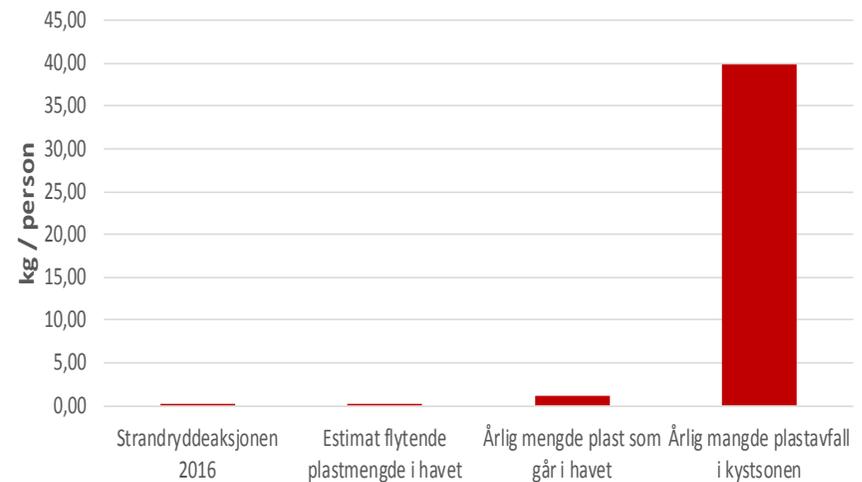
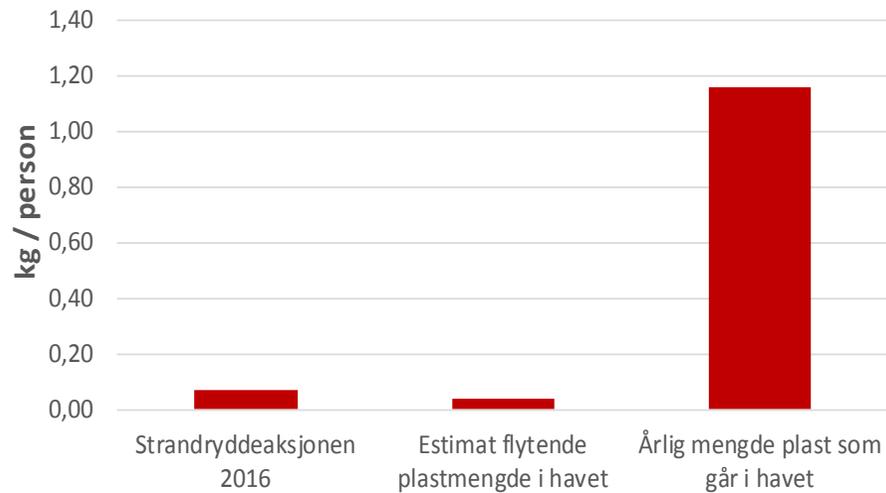


Source: Hold Norge Rent,
Strandrydderapporten 2016

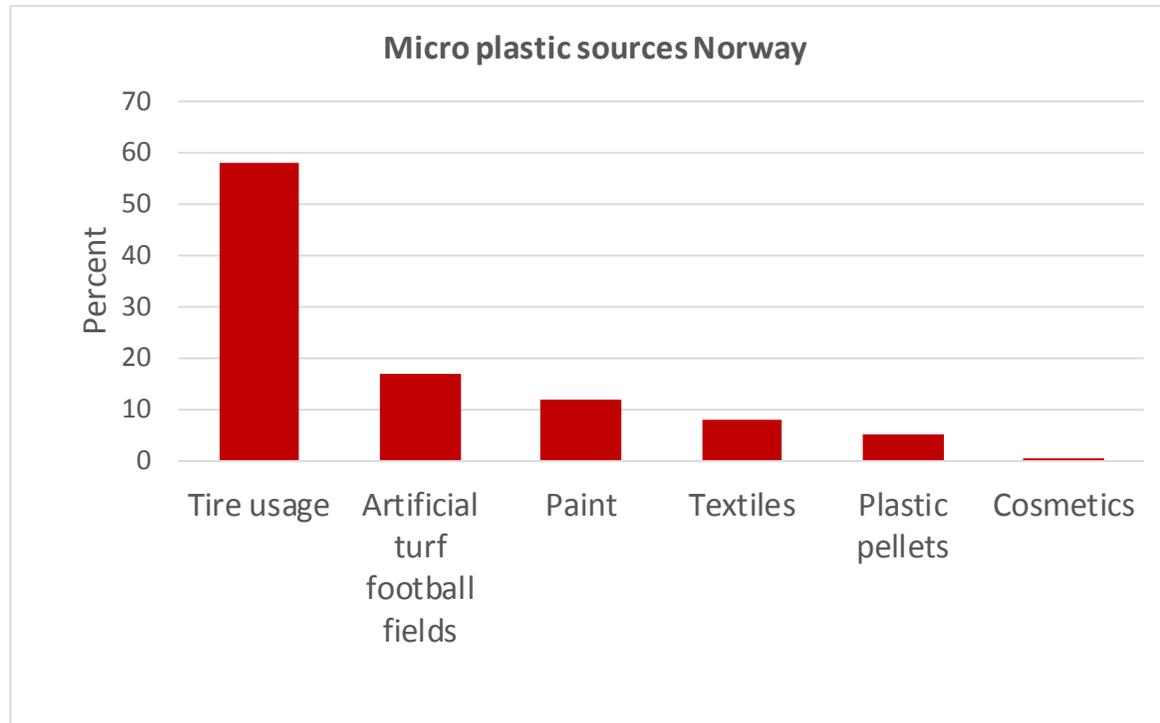




What is the amount of plastic in and near the oceans?



Microplastic lost in Norge (8000 tons/year)



- ca 1,5 plastic bag per week per person
- (Beach clean-up action 2016 collected 377 tons)

Source: <http://holdnorerent.no/mp/>





Consequences

Globally

- 1960: 5% sea birds had plastic in their bellies
- 2010: 80% sea birds had plastic in their bellies
- 2050: 99% sea birds will have plastic in their bellies

72 percent of European drinking water samples contain plastic



Plastic makes sea birds living waste bins



Microplastic in 15 of 16 sea salts



Found 30 plastic bags in the belly of a whale





Toolbox of mitigation measures

- Producer responsibility
- Free return of waste or deposit schemes
- Fines
- Research on new types of plastic and mitigation measures
- What about consumer responsibility?
- Awareness building?





Nordland Research Institute research projects

- REMAFISK (Marine waste from the fishing fleet): 2017-18
- RE-D-USE (New knowledge for reduction and utilization of marine waste from fisheries): 2017-19
- Collaboration between fisher unions, harbours, recycling businesses and researchers from Canada, Russia and Norge
- Financing from
 - Norwegian Ministry of Climate and Environment
 - Nordland County Council





Key questions addressed by the projects

- What is the origin of fishery related marine waste?
- What are the problems it causes for fishers?
- How can we build knowledge and awareness among fishers?
- What practical solutions are needed on board and in the harbours?
- How can we create value from the waste?





Project activities

- **Dialog**/interviews with fishers and fishery organisations on causes and solution
- Development and implementation of **training/education programs** for young and experienced fishermen
- Establishing public/private partnership for establishing **waste return systems in harbors**
- **Re-use** and circular economy: Dialog with businesses for closing the loop.





Interview results - situation on board

- In the past, almost everything was thrown into the sea including spill oil and batteries. But, there has been a significant improvement in awareness in recent decades.
- Both household waste and waste from fishing is generated. Some sort waste on board, most do not
- They do not loose a lot of fishing gear but they catch marine waste in their fishing gear.
- Waste from fishing and fished waste can be more problematic to manage than household waste





Interview results - Harbour handling

- Many fishers reports full containers and garbage dumps in the harbours. The locals use facilities that are intended for tourists and fishers.
- Many fishermen have an agreement with the fish landing facility where they deliver. This was said to be the best and safest way for fishermen to get rid of their waste. In harbours where they do not deliver fish, it can be problematic.
- With regard to fishing gear, it was pointed out that more containers are needed in the fishing ports to dispose of larger marine garbage, i.e. fishing gear.





What do fishers think?

The future reputation of Norwegian fisheries depend on *«clean arctic waters»... «It will be totally devastating if it appears that the ocean is one big garbage dump»*

- Parallel efforts are needed
- It is about
 - on board facilities for storing waste,
 - easily accessible and reasonably priced harbour solutions,
 - and work to improve knowledge, awareness and attitudes

«We need easy-to-use solutions both on board and in the harbor. Otherwise things may end up in the sea»

«Attitudes/awareness and how easy we can dispose of waste in the harbour is interlinked»





Further dialogue

- A survey is being distributed these days to thousands of fishers in Norway and Russia
- More in depth interviews to be carried out before Christmas both in Norway and Russia





Education

- A three day education programme for fishing students called «*Blue Conscience*» has been developed by SALT
- This is now to be tested in Bodin Secondary School and Maritime College + Lofoten Secondary School and Maritime College
- A shortened version of the education programme to be taught during fishers safety course (every 8th year) will be developed next spring





Harbour solutions – pilot case Bodø

- Currently having a dialogue to pilot a waste reception system for fishers in Bodø harbour
- Led by Bodø municipality
- In collaboration with *IRIS (waste management)*, *Bodø harbour*, *Bofisk fish landing facility* and *The Norwegian Fishermen's Association - Nordland county*





Creating value

- In 2018, we will start dialogue with The Marine Recycling Network in Nordland to look at how create value of the marine waste resources





Thank you!

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