A deep dive into the world of plastic and its effects on SDG-14.

Harmen Spek
Manager Innovations & Solutions
www.plasticsoupfoundation.org
1839 - Rubbervulcanisation (from natural latex to strong car tyres)

1856 - Celluloid (from cellulose to solid forms)

1892 - Viscose (the first ‘hand-made’ yarn)

1907 - Bakelite (the first synthetic plastic – based on fossil fuel)

INDUSTRIAL REVOLUTION!
Fossil based

1933 - Polyethylene
(the first soft and flexible plastic)

PLASTIC REVOLUTION!
Good things are twice as good in Cellophane

“The best things in life come in Cellophane”
‘OUR OWN’ PLASTIC ENVIRONMENT

safety  |  hygiene  |  comfort
GROWTH IN GLOBAL PLASTIC PRODUCTION 1950 - 2015

Source: Ellen Mc Arthur Foundation
A TOTAL SHIFT IN WASTE MANAGEMENT!
OF ALL PLASTIC MATERIAL EVER PRODUCED

79%

IS DUMPED ON LANDFILLS WORLDWIDE
MARIANA TRENCH
2050: more plastic than fish in oceans
Midway islands
North Pacific Gyre
“The best things in life come in Cellophane”

Photo: John Cancalosi
PLASTIC EMISSION = 3% \textsuperscript{+} OF ANNUAL PRODUCTION

12 MILLION TONNES ANNUALLY

Production and transportation

Usage and wear/tear

Disposal

We use it, we lose it!

Photo: Gerard Burgers
Microplastics captured at sea

- persistent organic pollutants & additives -

At the bottom of the foodchain!

Photo's: 5Gyres.com
BIGGEST MATERIAL EMISSION OF OUR TIME!
First Covid-lockdowns

Coronavirus: Venice canals clearer after lockdown

'Wave of silence' spread around world during coronavirus pandemic

Pollution made COVID-19 worse. Now, lockdowns are clearing the air.

Is this the ‘Reset Button’ for nature?
Covid-19

Medical waste According to WHO:

Up to 10x more medical waste is generated globally.

- Hospitals in Wuhan generated **240 tons** of medical waste **per day** compared to 50 tons on average.
- Lots of
Covid-19

Daily face mask generation

Estimated face masks generation
- > 500 million pieces
- 101 - 500 million
- 51 - 100 million
- 11 - 50 million
- 1 - 10 million
- <1 million
- No data
Plastic overload!

VOLUMES WILL GET UNMANAGEABLE!

Source: Ellen McArthur Foundation
PLASTIC RECYCLING CHALLENGES:

VOLUME, DIVERSITY AND COMPOSITION

145,000

Plastictypes or ‘grades’

Possibly technically recyclable, but economically?
Microplastics

Fiber loss from textiles

Wear and sanding dust from paint

Added microplastics

Wear from car tires
Plastics are:

OMNIPRESENT

Microplastics are found in:

AIR - WATER - SOIL - FOOD

WHAT ABOUT OUR HEALTH?
DOES PLASTICS MAKE US SICK?

More research!

WWW.PLASTICHEALTHCOALITION.ORG
1. Plastic in the blood of cows and pigs
2. Plastic uptake by lettuce, apples and carrots
3. White blood cell problems
4. Plastic in the placenta
What insight did Covid-19 pandemic bring us?

1. Nature showed us that it is resilient and always eager in restoring the balance.

   But the balance between plastics and nature has already been skewed for a very long time.

   So, we must restore this balance asap.

2. We are still addicted to plastic no matter what!
What change is needed?

1. Cutting down on our plastic consumption habits wherever possible.
2. Development of safer materials that are closer to natural processes and lifespans (or use existing materials that do).
3. Stop the narrative of plastic waste as a ‘solvable’ business case.
4. Stop the plastic trade! And take responsibility for your own waste.
5. Create plastic regulations that respect the environment and the living conditions of us and our fellow earthlings.
COMMON SENSE!
Thank you