

Creating Solutions for the Pacific

Biodegradable plastic and more

[2019 Plasticity Pacific]

Time: 13 March 2019
Venue: The Grand Pacific Hotel,
Victoria Parade, Suva, Fiji

Presented by Mike Ritchie

Time: 11:45 AM – 12:00 PM
Structure: 10 min preso +5 min Q&A



The specialists in recycling, waste and carbon



Agenda

- The world according to Mike – what to do with Plastic - in order



The problem - world

- 348 Mt plastic produced globally - 2017
- 8.4 Mt collected for recycling – 2016, 2%
- 8 Mt/year of plastic enters oceans



10 big rivers

- 10 biggest rivers deliver 88-95% of plastic to oceans

- a. Yangtze
- b. Yellow
- c. Hai
- d. Pearl
- e. Amur
- f. Mekong
- g. Indus, and
- h. Ganges Rivers
- i. Niger, and
- j. Nile



- Fix 1 river and you fix 20% of the problem
 - Yangtze – 1.5 Mt plastic /year

Top 10 Polluters

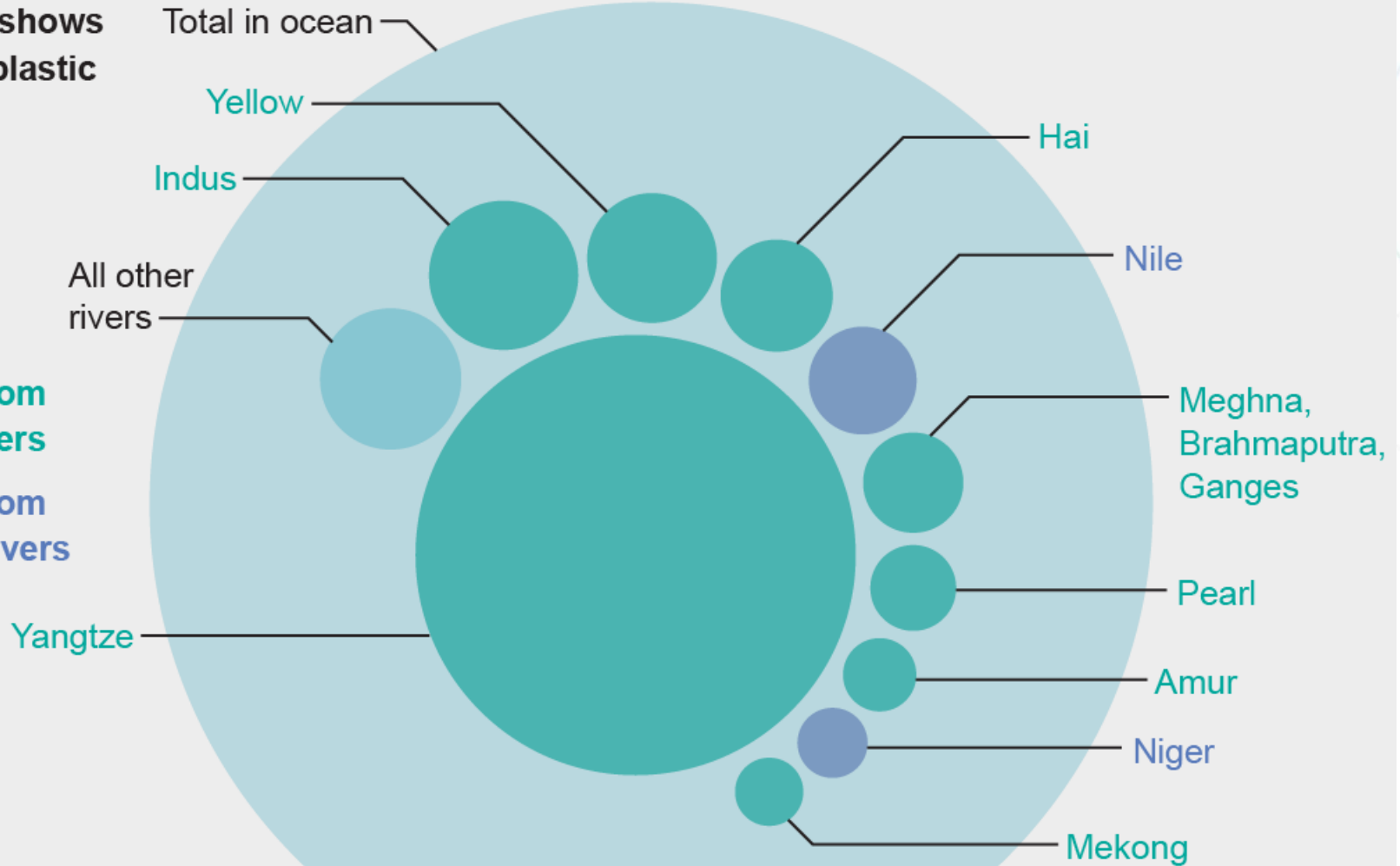
Circle area shows
amount of plastic



100,000
metric tons

● Plastic from
Asian rivers

● Plastic from
African rivers



1. Collect it

- Plastic pollution is a land based issue - Waste Collection Systems don't exist
- Pacific Islands- only 88% of urban and 47% population have access to a regular collection service

Collection systems

- **Bin Systems**



2. Target and innovate it

e.g. Australian 2025 Targets :

- 100% of all packaging will be re-usable, recyclable or compostable by 2025
- 70% of plastic packaging will be recycled or composted by 2025
- **30% recycled content** all packaging by 2025.

3. PEF it

The EfW system you have, when you don't have an EfW system

Bale and export it

1. Malaysian cement kilns
2. Fuel substitute
3. Better than landfill
4. Cost \$70/t

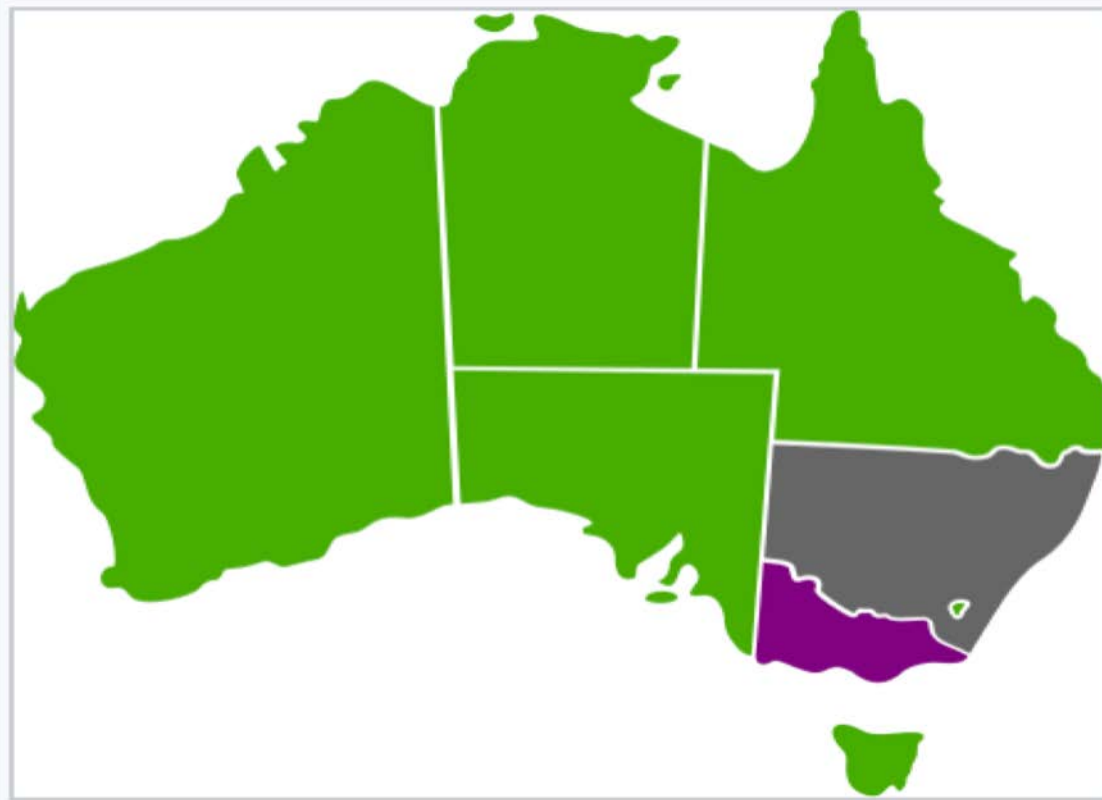


4. CDS it

- Applies to drink containers
- Over 70% capture rate possible
- CDS in place - Fiji, Guam, Kiribati, Micronesia, and Palau.
 - **Social Plastic®**—Plastic Bank collect and return plastic waste for \$.
 - Mission Pacific – Coca Cola Fiji run container collection and recycling program (FJ\$1/kg collected)
 - In Kiribati, the beverage container deposit law is linked to the Special Fund (Waste Materials Recovery) Act 2004, and part of the Kaoki Mange! ('Send back the rubbish!') Project

5. Ban it – esp plastic bags

- Bali ban on SUP from 2019 (Dec 18)



Plastic bag bans in Australian states and territories

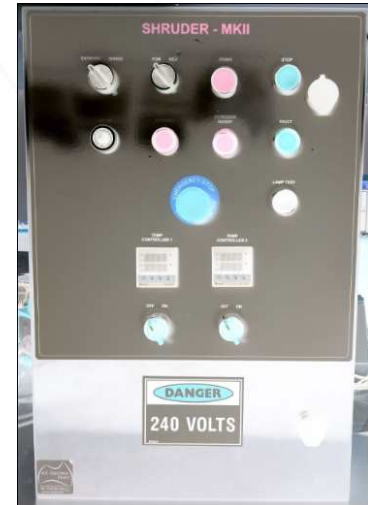
 Ban in effect (South Australia, Northern Territory, Australian Capital Territory, Tasmania, Queensland, and Western Australia)

 To be banned (Victoria)

 No ban (New South Wales)

6. Process it

- Plastic to diesel
 - Plastic bottles, bags and film can all be converted without pre-treatment
- Shruder Mk II
 - Combined plastic shredder and extruder
 - Small scale
 - Portable - remote locations
- MRFs
 - Limited to bottles
 - Cant take film



7. Require "compostable"

- Certification standards unclear

- Multiple terms:

- degradable
- biodegradable
- Compostable
- oxo-degradable
- solar-degradable
- recyclable



- Most are unrecoverable in bin systems
- Most will gum up composting facilities

Degradable/biodegradable

- Made from petrochemicals with polymer added to ensure breakdown (after exposure to light, oxygen and heat)
- Micro-plastics
- Toxic
- Contaminates compost
- DO NOT USE



Compostable

- Breaks down into carbon dioxide and water
- Made from plant starch, cellulose
- Fully decomposes in composting facilities
- If in doubt – require “Compostable”



8. Price it

- Require EPR and take back
- Legislate Advanced Disposal Fees
- Price the environmental externalities



9. Landfill it

- 15 sanitary landfills in Pacific Islands
 - 333 “temporary” dumps
 - 96 open dumps
- Price the landfills properly
 - Fiji – Naboro landfill – lined, with leachate system
 - Solomon islands – lined landfill
- Close and rationalise poorly run tips – consolidate at engineered landfills.
 - Requires funding.

The end.

thank you

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Innovate it

- Black PET trays can't be detected
- Quinn launched new Detecta black PET trays
- Sorted on existing NIR equipment
- Made with up to 100% recycled material



5. Ban it - SUPBs

Jurisdiction ⇅	Lightweight plastic bags banned? ⇅	Commencement
South Australia	Yes	4 May 2009 ^[17]
Northern Territory	Yes	1 September 2011
ACT	Yes	1 November 2011 ^[18]
Tasmania	Yes	1 November 2013 ^[19]
Queensland	Yes	1 July 2018 ^[23]
Western Australia	Yes	1 July 2018 ^{[24][25]}
Victoria	Pending	Late 2019 ^[26]
New South Wales	No	-

- Bali ban on SUP from 2019 (Dec 18)