Webinar 2: Plastics INC

Science informing decision-making

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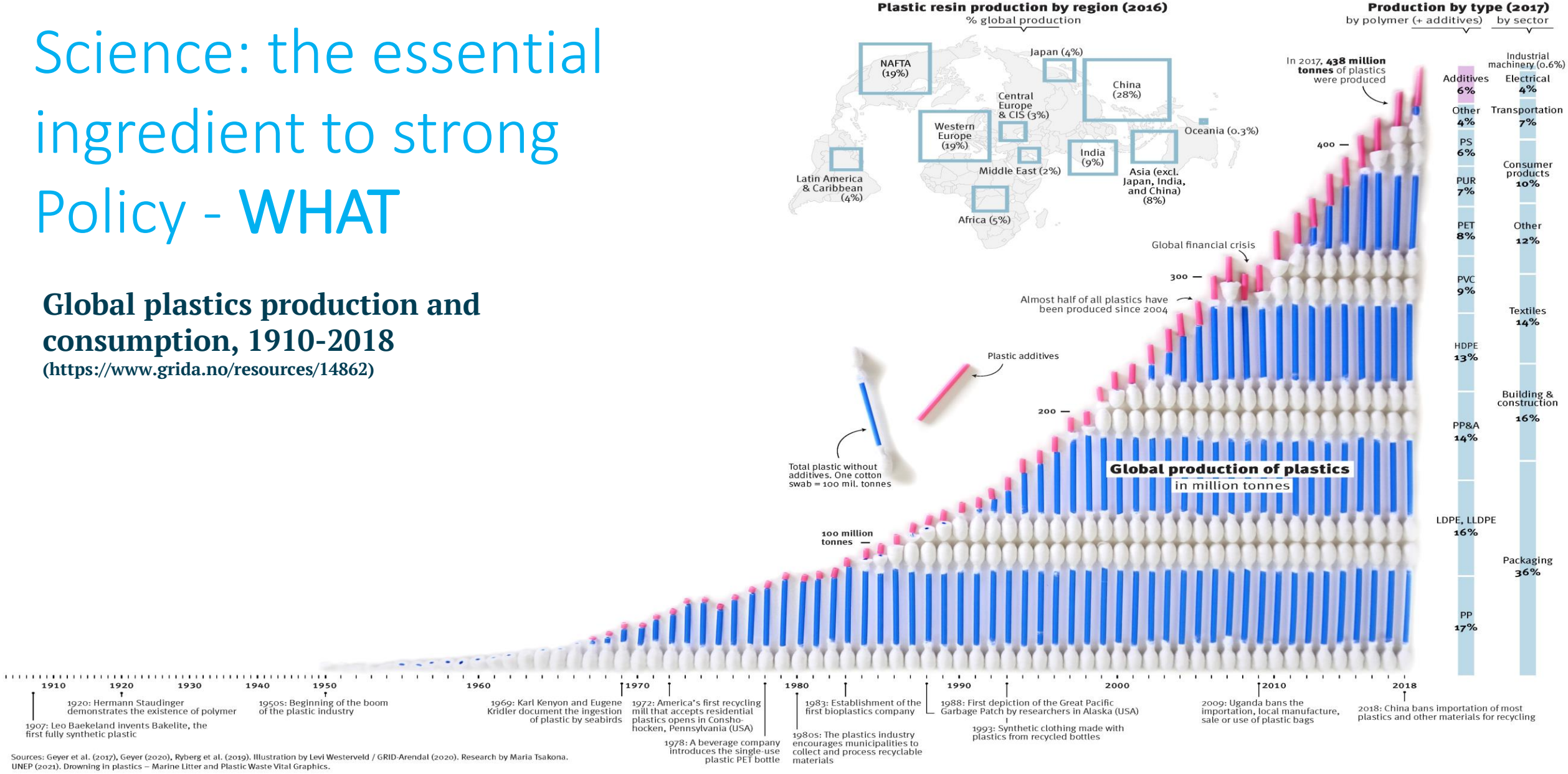
Science: the essential ingredient to strong Policy - **WHY**

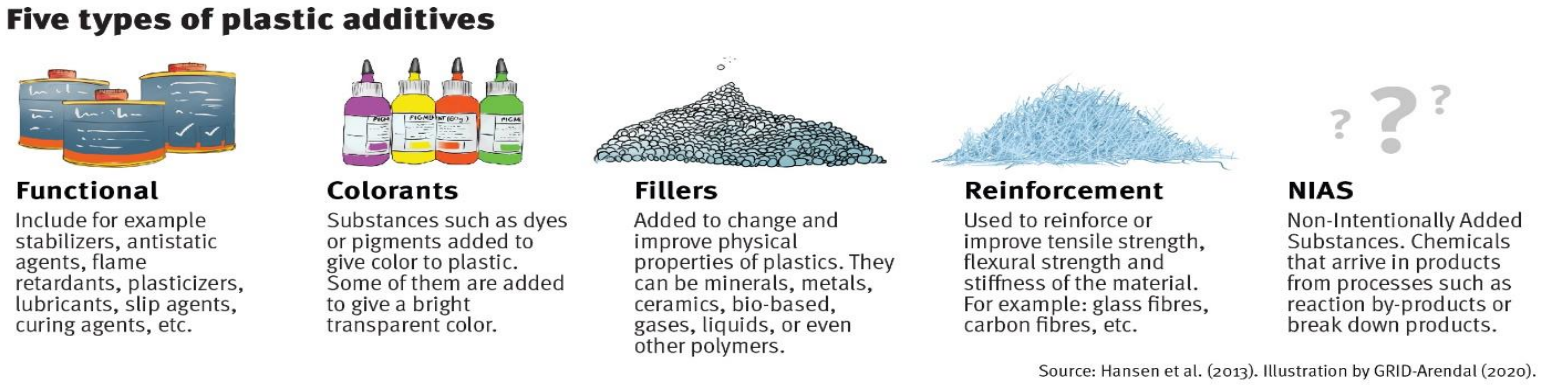
- Global plastic production to double by 2050
- 8 -11 million tonnes of it ending up in the oceans
- 53.6 million tonnes (Mt) e-waste & growing
- Municipal solid waste 2.1 billion tonnes of which 33% not managed appropriately
- Impacts of microplastics, chemical additives – human and ecological exposure and impacts
- Marine debris affecting wildlife, ingestion, entanglement
- Energy implications, GHGs

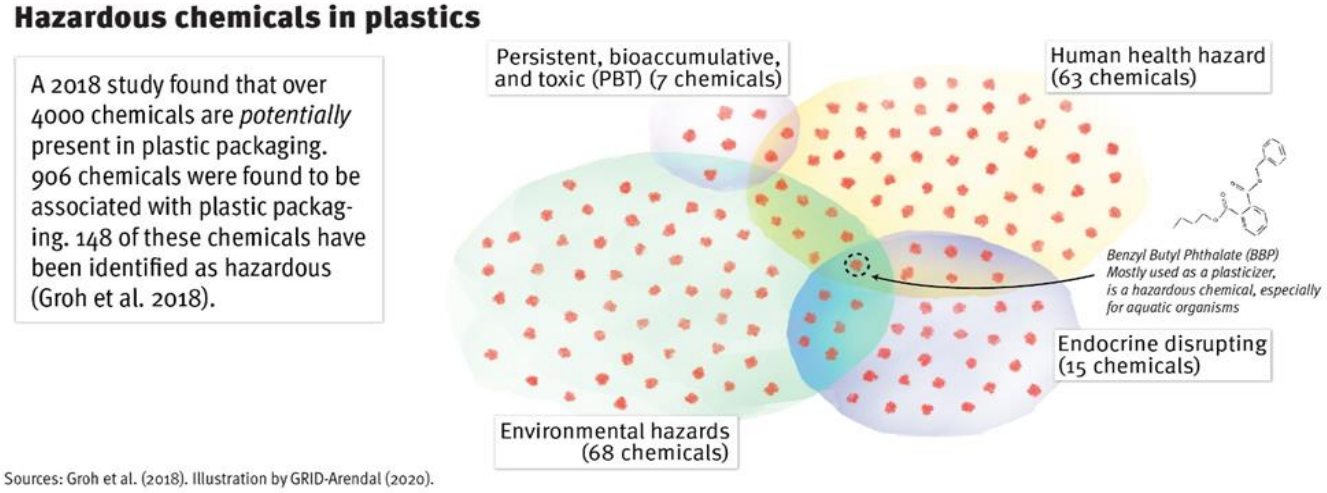
Science: the essential ingredient to strong Policy - **WHAT**

Global plastics production and consumption, 1910-2018
(https://www.grida.no/resources/14862)



Science: the essential ingredient to strong Policy - **WHAT**





UNEP Unpublished 2023

- > 13,000 chemicals associated with plastics and plastic production
- 3,200 monomers, additives, processing aids and non-intentionally added substances- hazardous.
- Effects of hazardous additives include: carcinogenicity, reproductive toxicity, endocrine disruption, ecotoxicity, bioaccumulation potential, environmental persistence and mobility.

https://www.unep.org/resources/report/drowning-plastics-marine-litter-and-plastic-waste-vital-graphics

Science: the essential ingredient to strong Policy - **WHAT**

Select Activities

- Production of chemicals to make plastics
- Plastics manufacture
- Plastics products manufacture and use in other manufacturing processes
- The products, use and disposal
- Recycling, Recovery, Incineration
- Disposal – both controlled and uncontrolled
- Innovative solutions/ alternatives / substitutes

https://www.lifecycleinitiative.org/activities/life-cycle-assessment-in-high-impact-sectors/single-use-plastic-products-studies/

Science: the essential ingredient to strong Policy - HOW

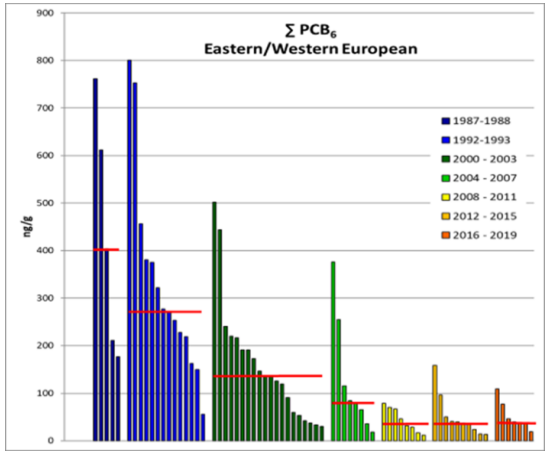
What are we seeking to achieve? What is the aim of a Policy?

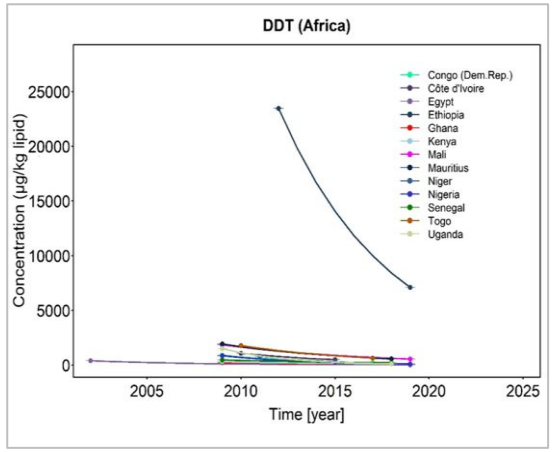
- **No or reduced** plastics in the environment or people (if you prevent exposure, prevent impacts)
- **No or reduced** direct or indirect impacts from manufacturing, use and disposing of plastics
- **No or reduced** open burning of plastics
- **No or reduced** GHG emissions and actions to mitigate climate change
- **Reduced** economic costs
- Incentivizing **New** materials, plastics and/or products

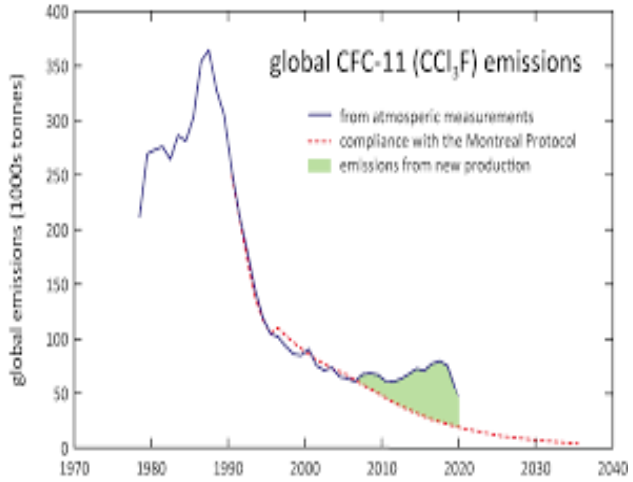
- Others or all the above?

Science: the essential ingredient to strong Policy - **HOW**

What measures help us achieve objectives and what science do we have?







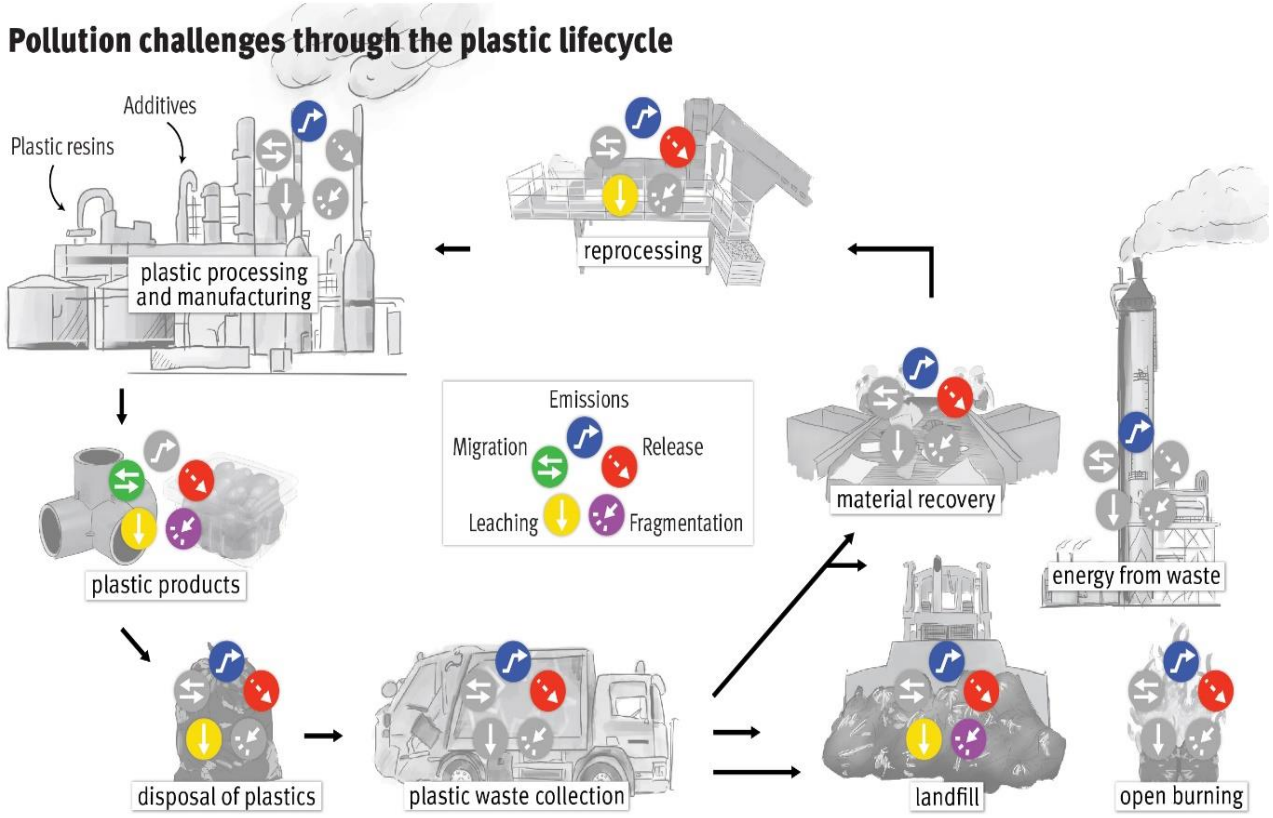
Overall declining global trend of POPs, indicating the effectiveness of the Stockholm Convention: Examples of DDT and Africa and PCB in Europe (UNEP/GEF POPs GMP)

Decrease in CFCs phased out across sectors, control measures such as handling and collection, training, bans

Regulatory Measures Work!!! But - no regrettable substitutions and no perverse outcomes

Options Paper: Possible Core Obligations, 1, 2, 3, 4
Considerations: definitions and focus

Science: the essential ingredient to strong Policy - **HOW**



Sources: Andaluri et al. (2018), CIEL (2019), Hahladakis et al. (2017). Illustration by GRID-Arendal (2020).

Options Paper - Possible Core Obligations

- **5. Strengthening Waste Management**
  Reprocessing, recycling, treatment, materials recovery, collection, disposal, landfill

- **9. Eliminating the release and emissions to land, air and water**
  Regulatory controls in processing and manufacturing, reprocessing, materials recovery, waste to energy, collection, disposal, landfill, open burning

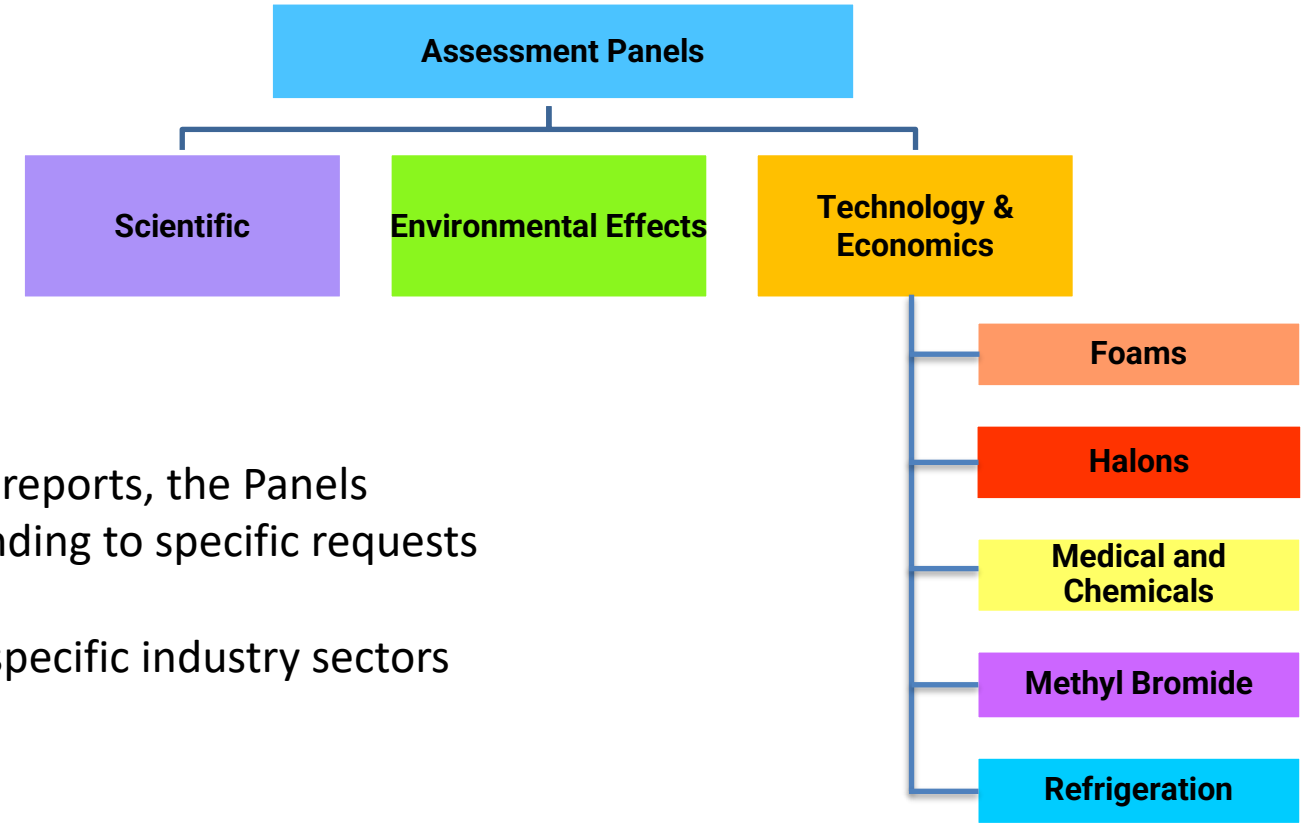
- **Consumer product laws?**

Would require: Guidelines/benchmarks/ standards etc.

Science: the essential ingredient to strong Policy - Implementation

The Montreal Protocol Assessment Panels

- Article 6 of the Montreal Protocol requires that assessment of the latest information on scientific, environmental, technological, and economic aspects are carried out periodically (at least every 4 yrs) by the 3 Assessment Panels.
- In addition to the quadrennial assessments and synthesis reports, the Panels prepare annual progress reports and other reports responding to specific requests by the parties
- TEAP has 5 Technical Options Committees that deal with specific industry sectors that use ODS and HFC

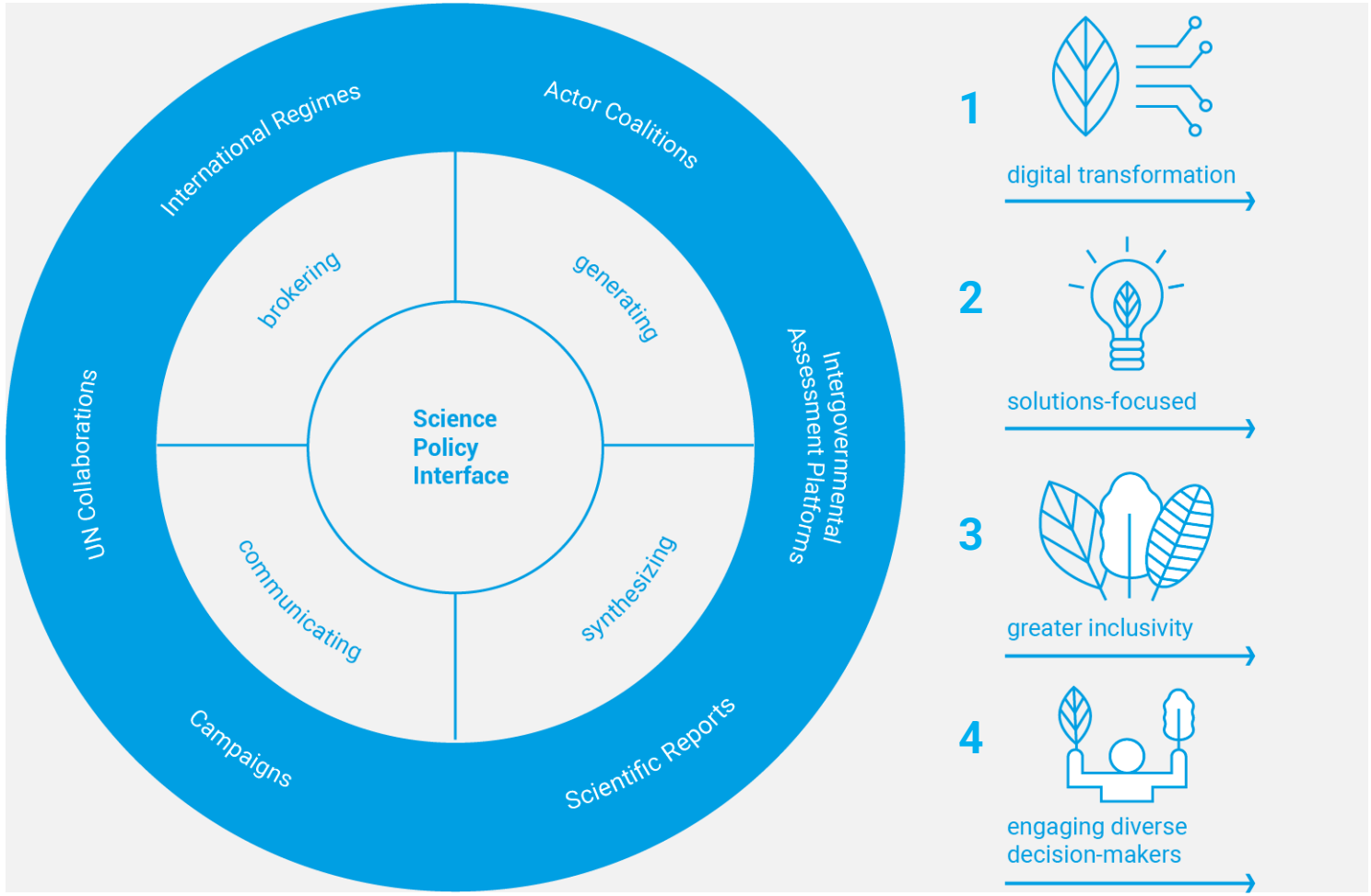


Independent, authoritative, consensus assessment by the world's top scientists and experts

Science: the essential ingredient to strong Policy - **Implementation**

- Objectives need to be clear
- The science of solutions and innovations needs to consider the objectives i.e., ‘do no harm’?
- The benefits of what we know about how to manage the plethora of issues around plastics but also what we don’t know
- A strong credible Monitoring and Evaluation framework
  - Environmental Forensics/ Isotope analysis
  - Analytical approaches
  - Mapping source to sea
  - Citizen science approaches
  - Biological monitoring

Strengthening the Science Policy Interface: UNEP@50 Report



Enabling open accessible and transparent data, information and knowledge

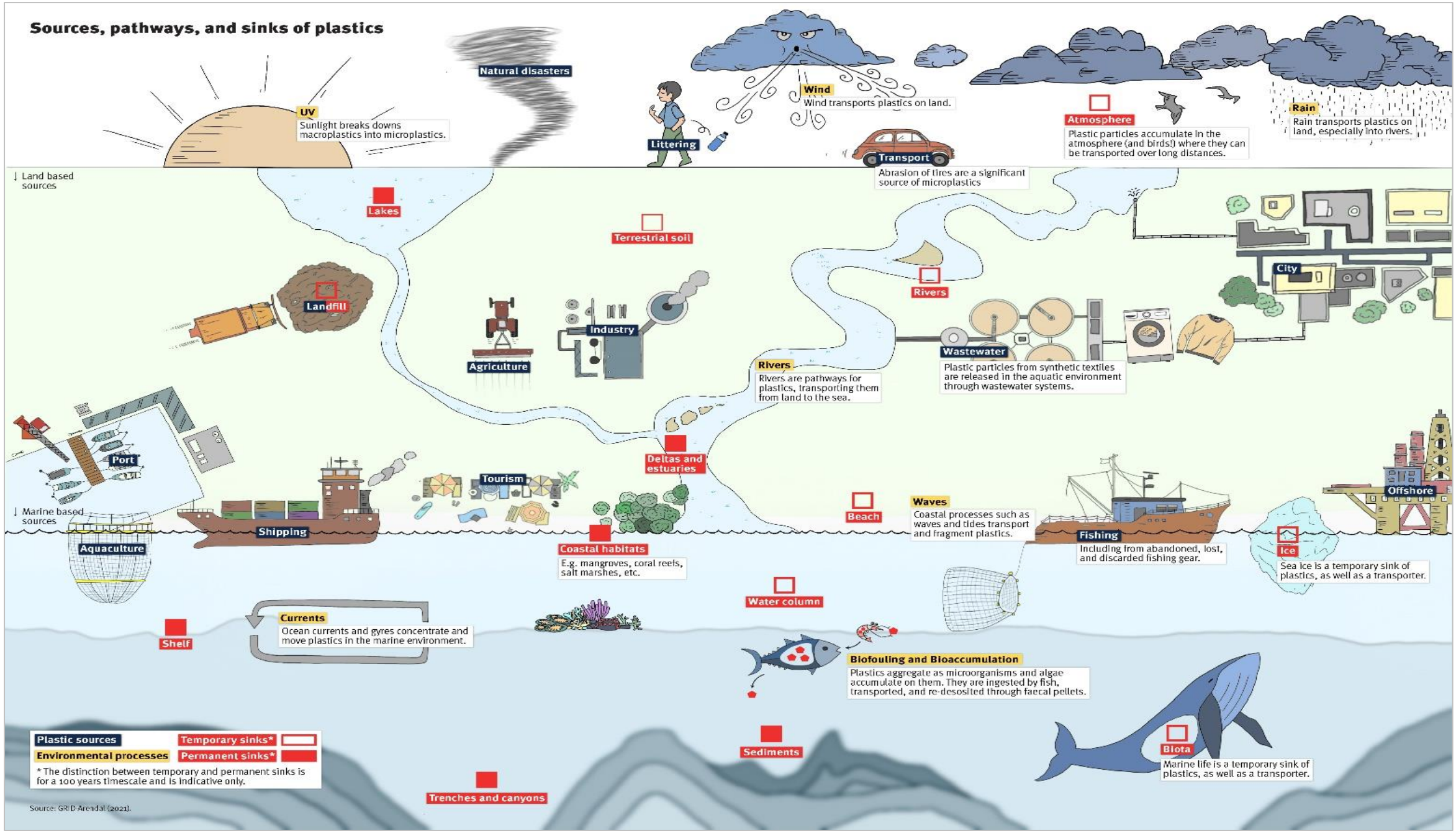
Placing significantly more emphasis on solutions, rather than challenges and barriers

Embracing a more diverse range of stakeholders, partners and

Engaging with a variety of decision-makers and influencers

Concluding Remarks

- Science is fundamental to good Policy and implementation
- Data, information and knowledge across the lifecycle needs to be available, open, accessible and transparent
- The Science Policy Interface can be strengthened by enhanced stakeholder engagement with more diverse voices and focusing on solutions
- Focus on actionable outcomes that are practical to implement
- Monitor and evaluate success, need clear measures (metrics) some of which are yet to be determined.



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