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Responsive Regulation of Nanomaterials to Achieve Sustainable Consumption and Production

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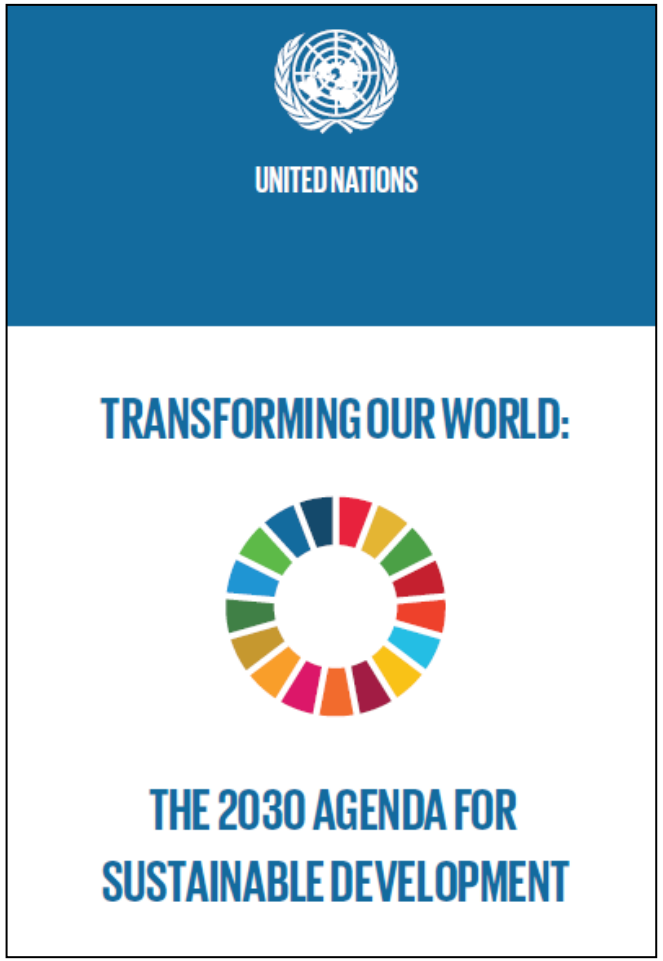
Agenda

1. Sustainable consumption and production
2. EU regulatory strategy for chemicals
3. Nanomaterial challenges
4. Institutional Analysis for regulatory impact assessment

1. Sustainable Consumption and Production



- SDG 12: Ensure sustainable consumption and production patterns
- SDG 12.4: By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle … to minimize their adverse impacts on human health and the environment

2. EU regulatory strategy

"There is need to create REACH like legislation in India for safe use of chemicals for protection of human health & environment."

Department of Chemicals & Petro-Chemicals, 2012

http://chemicals.nic.in/sites/default/files/XIIth%20Five%20Year%20Plan-Yr%202011_0.pdf

2. EU regulatory strategy: Pre-REACH

- "New" substances ***~ 2.700***
  - Testing + risk assessment requirements for manufacturers (67/548/EEC)
- "Existing" substances ***at least 30.000***
  - Priority list subject to risk assessment carried out by MS (93/793/EEC)
  - 141 substance evaluations with risk management recommendations

- **Innovation hampered**
- **Imperative law** not effective

2. EU regulatory strategy: REACH framework

- Central principle:

  Actors in supply chains “ensure” that substances as such or e.g. in articles “do not adversely affect human health or the environment” (Art. 1(3) REACH)

→ **more ambitious** than SDG 12.4 (“minimize their adverse impacts”)

2. EU regulatory strategy: REACH framework

- **R**egistration, **E**valuation, **A**uthorisation and Restriction of **Ch**emicals
  - Registration: “No data, no market”; “adequate control of risks” in LC
  - Cooperation and (risk) communication along the supply chains
  - Transparency: Online databases with registration data
  - Sovereign risk management
  - Evaluation of registration and substance data

  - Incentives for **“sustainable” innovation**
  - Encourages **self-responsibility** of actors in supply chain
  - Example of **Responsive Regulation**

3. Nanomaterials

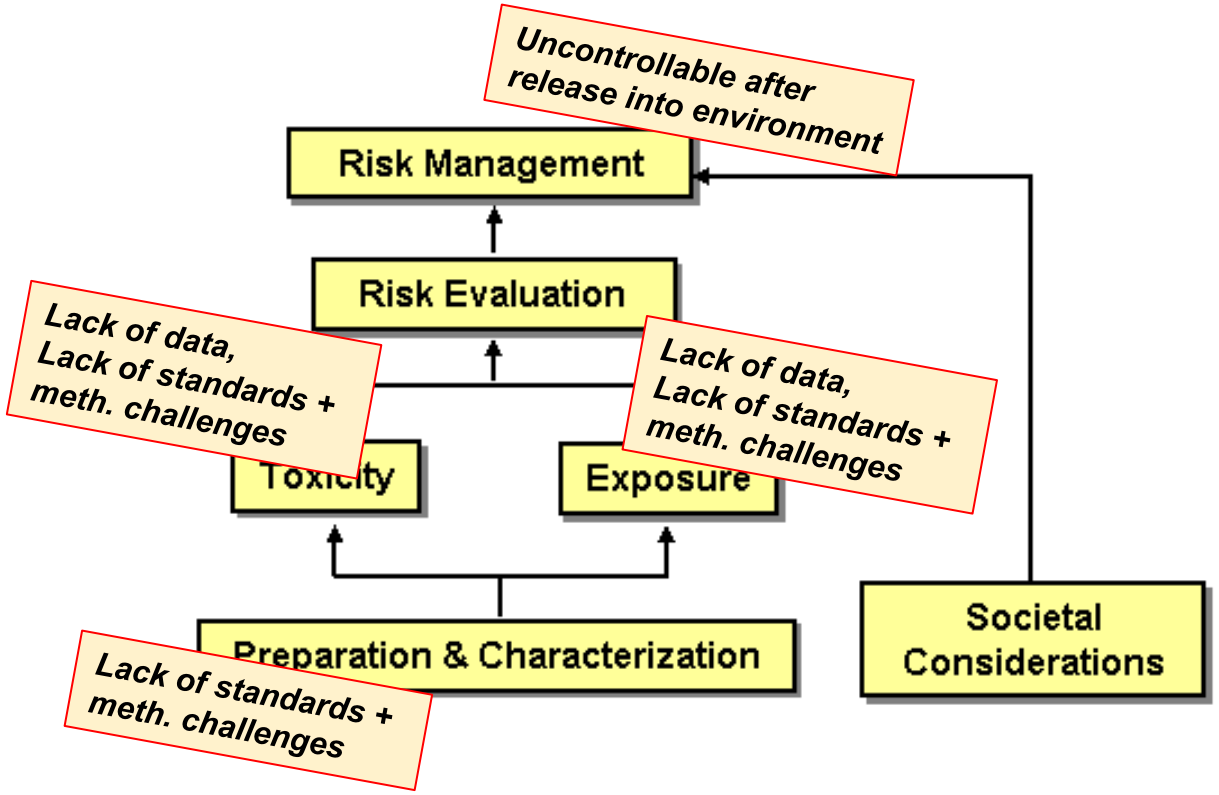
- Chemical Substances
  - Small size: 1 nm = 10^{-9} m
  - Increased surface → reactivity
- Improve processes and products
- Funding initiatives wordwide
  - e.g. Rs 1,000 crore “Nano Mission”*
  - EU Horizon 2020 programme

→ Relevant in terms of SDG 12

*Source: http://www.nanomission.gov.in/

3. Nanomaterial challenges

- Chemical Risk Management (in a broader sense)* and…
- Constraints as regards Risk Management of Nanomaterials
  - Knowledge gaps + “unknown unknowns”



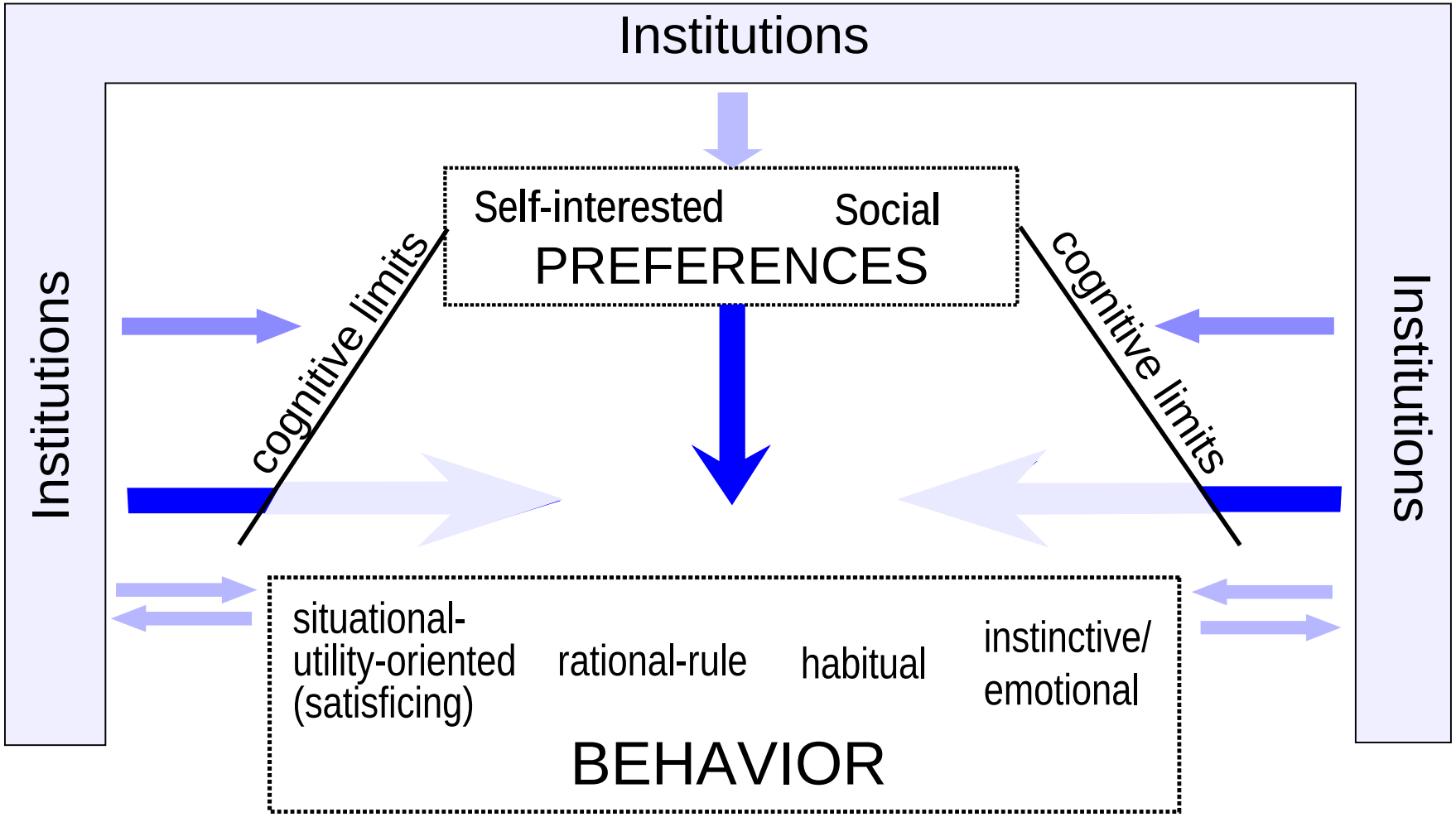
*Source: NEDO-Projekt

3. Nanomaterial challenges

- Does REACH ensure adequate risk control / „sustainable consumption and production“ as regards Nanomaterials?

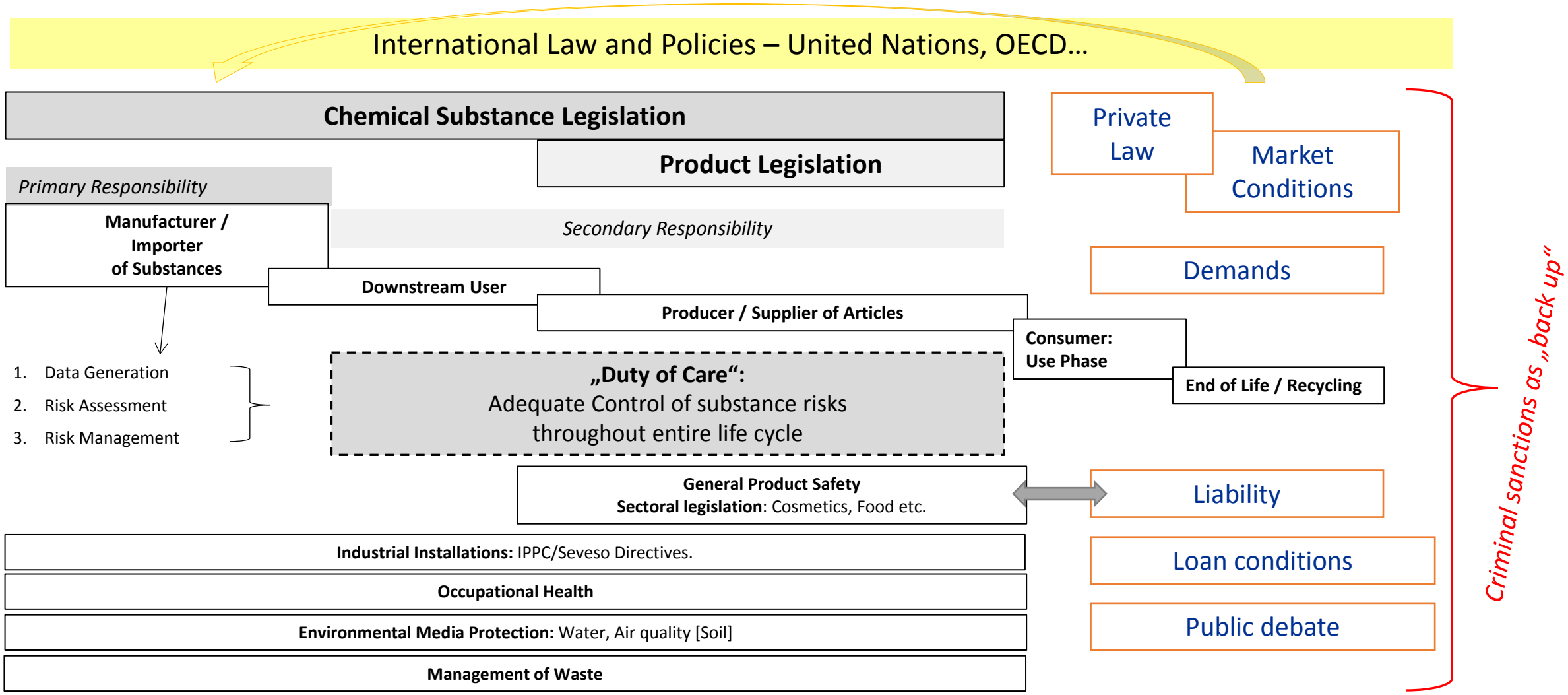
- REACH Instruments not operationalized for nanomaterials, e.g.
  - Regulatory triggers („tonnage philosophy“)
  - Physicochemical and (eco)toxicological data requirements

4. Institutional analysis



Source: Martin Führ and Kilian Bizer. 2007. REACh as a paradigm shift in chemical policy - responsive regulation and behavioural models, Journal of Cleaner Production 15 (4): 327-334.

4. Institutional analysis



Source: Julian Schenten, Martin Führ and Kilian Bizer. 2017. Overcoming Uncertainties by Responsive Governance of Nanomaterials, in: Economic Analysis of Law in European Legal Scholarship (Vol. 4), ed. by Matthis, K., Springer (adapted)

4. Institutional Analysis

- Does REACH ensure adequate risk control / „sustainable consumption and production“ regarding Nanomaterials?
  - No
  - Why? – It depends…
- Some actors lack willingness
  - Responsive Option: Operationalize REACH for Nanomaterials
- Some actors are constrained by capacities and external factors
  - Resp. Option: More cooperation in risk assessment to establish standards

6. Results

- Chemical law can drive sustainable consumption and production

- Institutional analysis allows regulatory impact assessment

- REACH has to become „more responsive“ with respect to Nanomaterials