Innovation and Precaution

Some framing reflections

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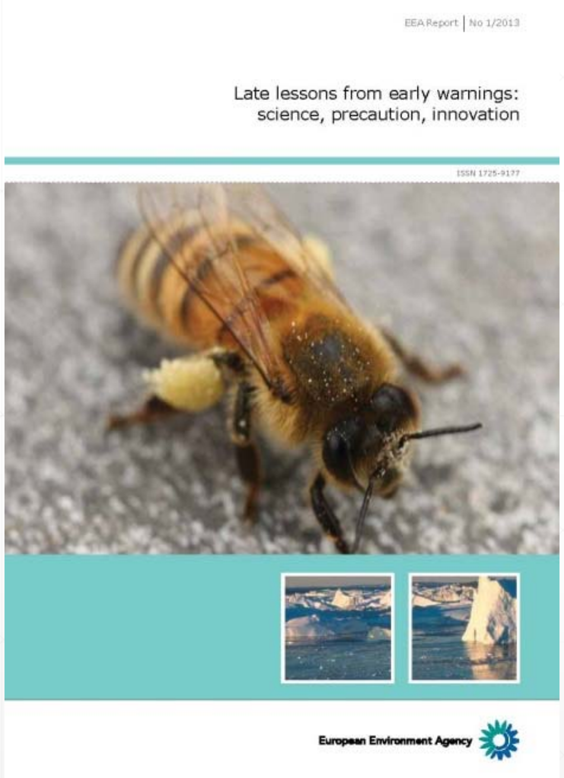
'Innovation in the agri-food sector' – European Parliament – 8 Novembre 2018

Precaution



'The precautionary principle provides justification for public policy and other actions in situations of scientific ***complexity****,* ***uncertainty*** *and* ***ignorance****, where there may be a need to act in order to avoid, or reduce,* ***potentially serious*** *or* ***irreversible*** *threats to health and/or the environment, using an appropriate strength of scientific evidence, and taking into account the* ***pros and cons*** *of* ***action and inaction*** *and their* ***distribution****.'*

Source: EEA 2013

Why is precaution a key principle?

- Complex issues in complex social-ecological systems: often the realm of ignorance and ambiguity
- Potential irreversibility
  - e.g. altering genome, self replicating technologies, biodiversity loss, climate change, nuclear contamination, …
- We live on a finite planet

⇒ Necessity of upstreaming: being proactive rather than reactive: avoid harm as much as possible

  - e.g. 'benign by design', avoid, substitute, reduce at source, …

Asymmetry in error types

Type I error False positive	Accept a false hypothesis *(H= there is an effect)*	Excessive credulity	In science: avoid them because you want to provide explanations of the world
Type II error False negative	Reject a true hypothesis *(H= there is an effect)*	Excessive scepticism	Maybe these should be avoided when stakes are high and damages irreversible and/or exposure widespread

- Asymmetry between competing policy and scientific options of avoiding false negatives and avoiding false positives
- Stems from irreversibility and high stakes
- Calls for precautionary approaches

⇒ Reflect on pros and cons of being wrong

Inspiration: EEA 2001 & 2013 & Andy Stirling's work

European Environment Agency

Weighing pros and cons

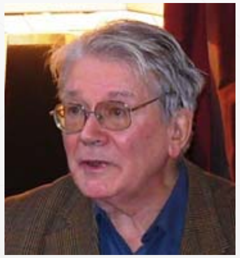
Asymmetries in how we account for the pros and cons, costs and benefits of an action / a technology / a product

- Emphasis on the short term one-dimensional (vested) benefits & risks vs. long-term and systemic (societal) risks & benefits
- More emphasis on costs of preventative or precautionary action than on benefits (and co-benefits, spillover effects)
- Negative externalisation goes one way: from private interests to society &/or environment

Business and precaution?

- Narrow understanding of business and its purpose leads to fears that the precautionary principle (PP) would be hindering business activities and innovation (fear stemming from dominance of vested interests)
- Yet this all comes from a major confusion between means and ends
- From a vision where profit is an end in itself to a vision where profit is a means towards a higher business end: providing a (useful) service to society
- Time to re-think the role and purpose of business in society
- In such context, the PP can be a starting point and a useful compass for business
- Importantly, precaution can be upstreamed in the research and development processes

Contributing to *'an economy with a human purpose'*
(une économie à finalité humaine)
René Passet (2001)

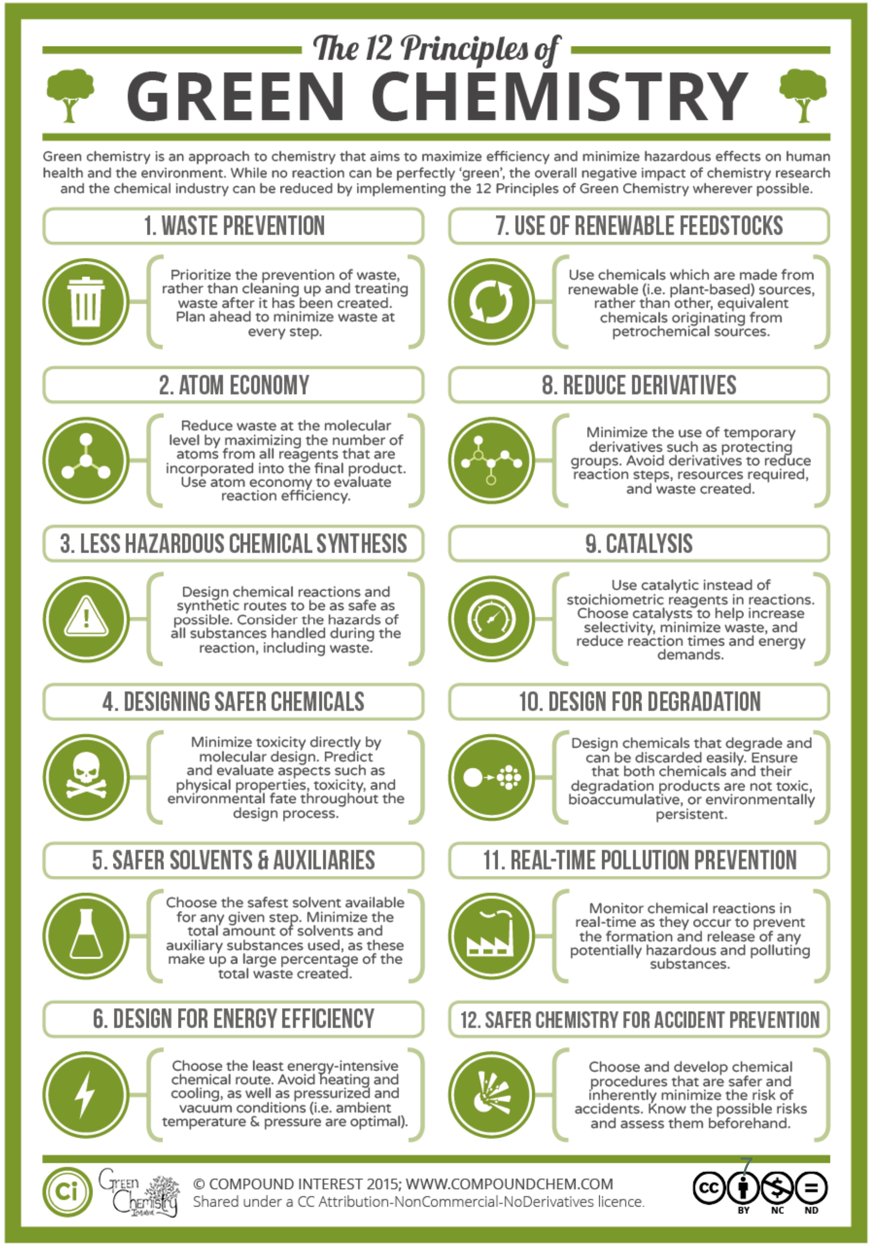


Purposeful and responsible innovation

- Avoiding harm as a starting point in a research and development process

- *'Benign by design'*

  (Paul Anastas)



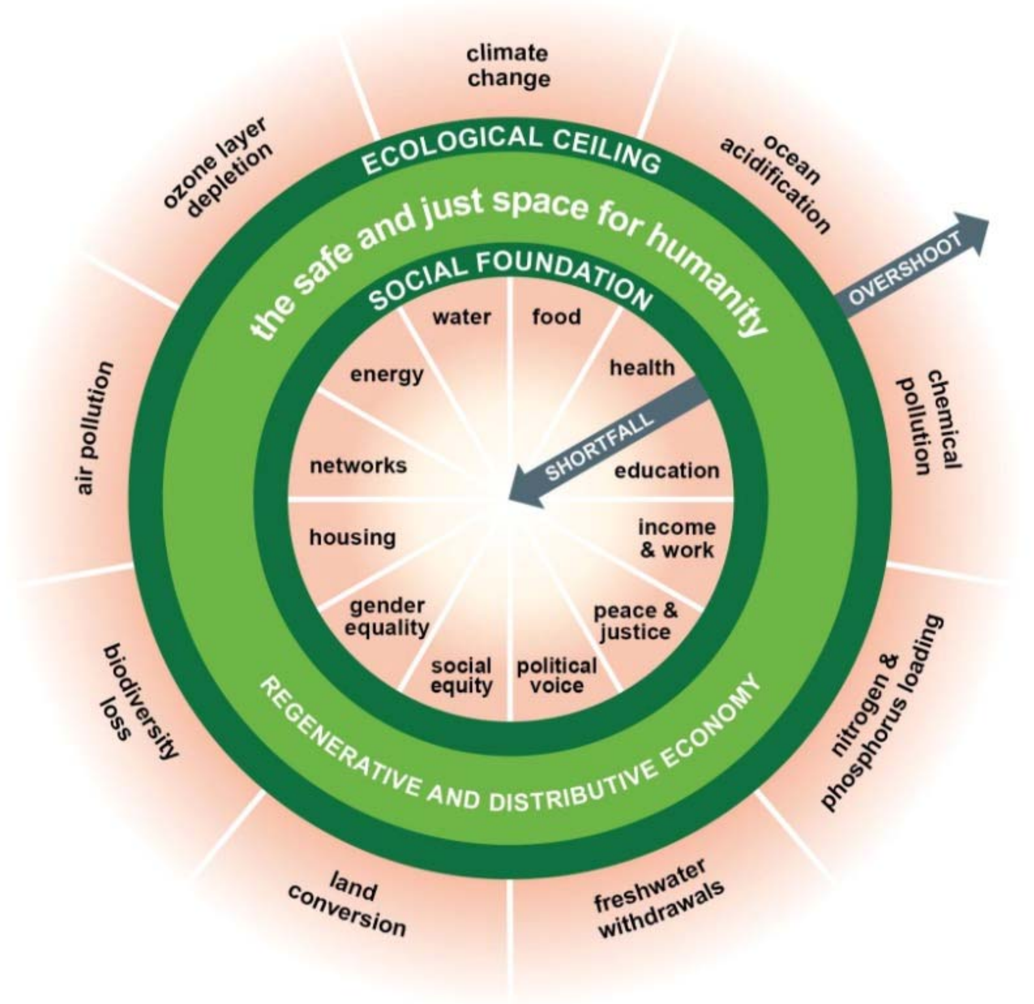
Elements for the governance of innovation

- Reflect on consequences over time, and on their effects on quality of life, well-being and sustainability ⇒ Gauge an innovation against societal goals/visions
- Be transparent and dynamic (there are unknowns, knowledge evolves)
- Apply the precautionary principle when stakes are high, uncertainty and ignorance prevail
- Consider irreversibility of potential negative consequences
- Upstream: adopt a precautionary mindset in research and innovation
- Cherish diversity of solutions to build resilience
- Acknowledge the possibility of surprises
- Be adaptive, allow to revisit decisions and choices
- Keep options open, yet accept to close down inappropriate paths…

Inspiration: A. Stirling & EEA 2001, 2013

Conclusion

- The precautionary principle is a key tool if we are serious about aiming to thrive in an *"ecologically safe and socially just space for humanity"* (Raworth 2017).
- Precaution is not anti-innovation, it fosters innovation with a human purpose
- Reflexivity, open-mindedness and humility are de rigueur



Source: Kate Raworth 2017