



National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport

Assessing health and environmental risks of nanomaterials

Current state of affairs in policy,
science and areas of application

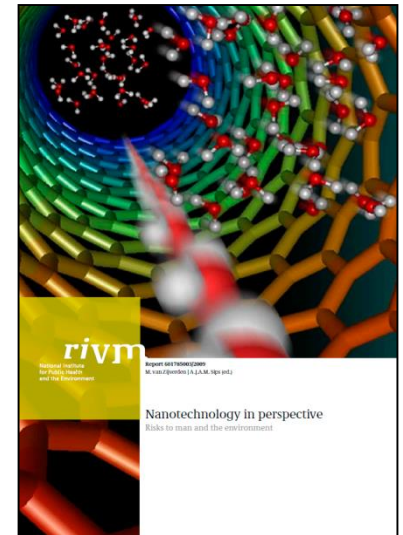
Eric A.J. Bleeker
RIVM

December 3, 2015



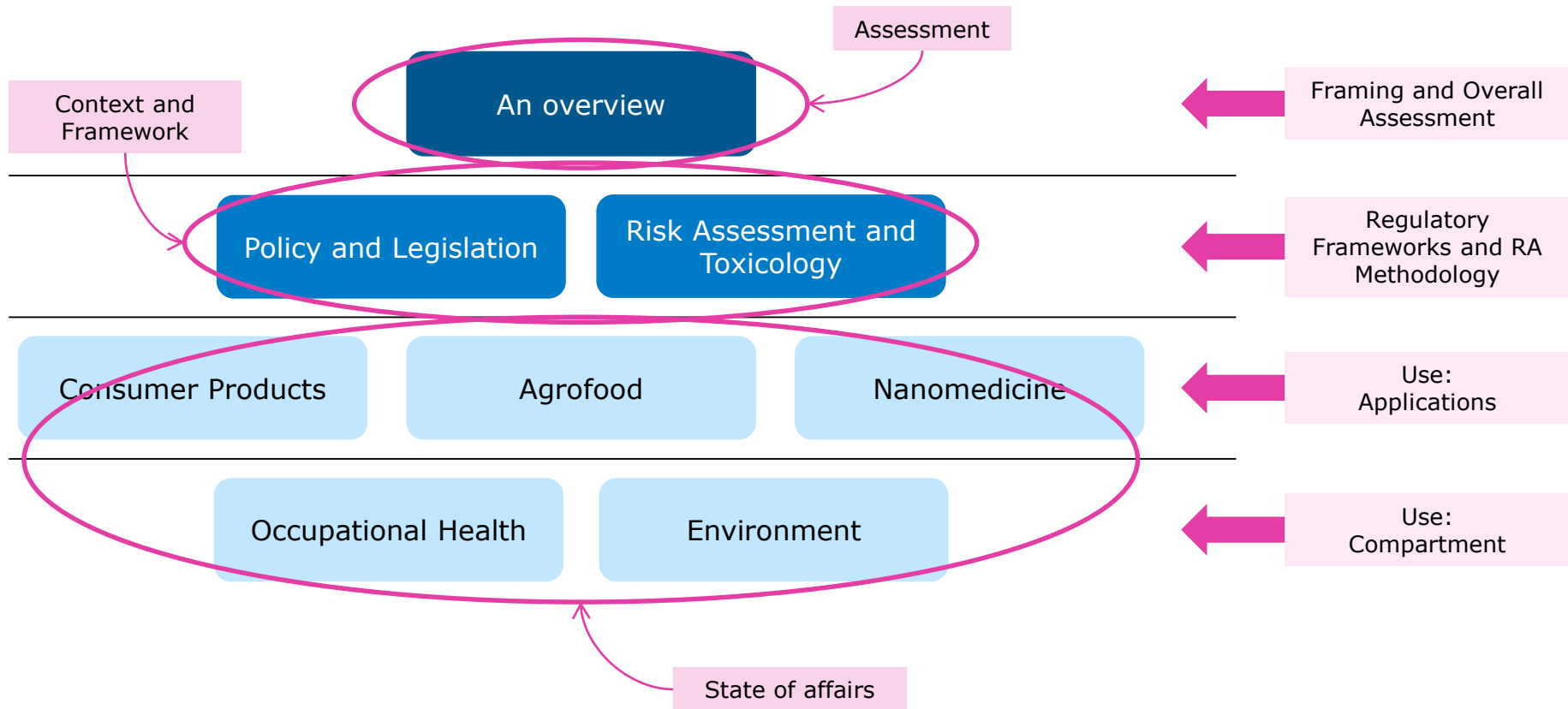
Background

- RIVM published a first overview in 2008 (English in 2009)
“Nanotechnology in perspective. Risks to man and the environment”
www.rivm.nl/bibliotheek/rapporten/601785003.html
- Many recent developments
 - Market and products
 - Science and knowledge
 - Policy and legislation
- Policy need for an update
 - Focus on developments and remaining gaps
 - From different perspectives and disciplines





Overview of report

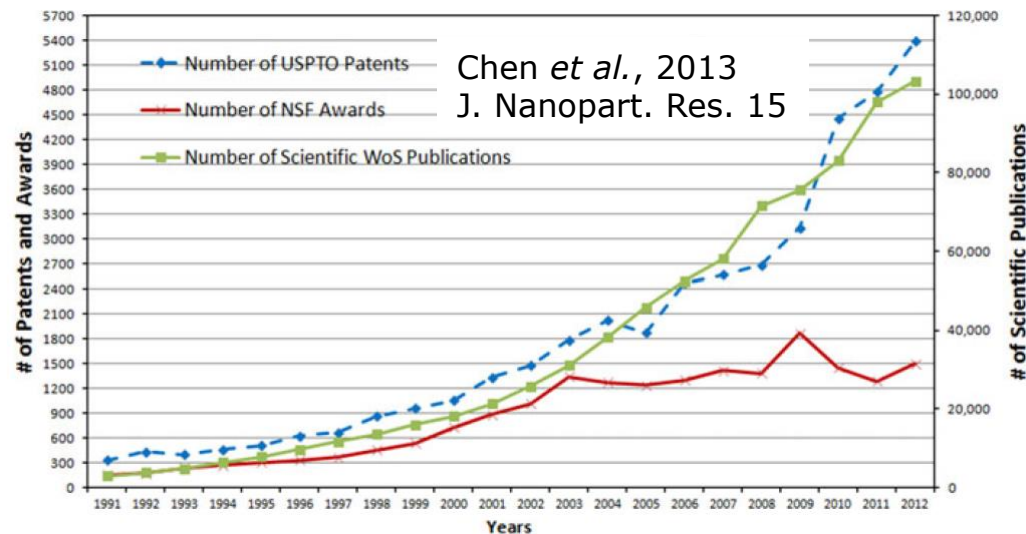




Overall Assessment (1)

1. Significant increase in use of nanomaterials is expected

- Strong 'technology drivers'
- Key Enabling Technology, Economics, Environment, Societal
- Growth in investments (science, technology, business)
- Growth in patents and scientific publications





Overall Assessment (2)

2. Ability to assess potential hazard is limited

- Need for data
- 'Toolbox' for simple nanomaterials in place in 2020
- No predictive models
- Complex nanomaterials
- Knowledge on behaviour (?)
- Knowledge lags far behind innovation





Overall assessment (3)

3. Knowledge on occurrence and exposure is very limited

- Limited insight in products
- Detection is complex and expensive
- Conceptual modelling of behaviour
- (Rapid) Increase in nanomaterials
- Knowledge on “exposure” lags behind increase in nanomaterials





Needs for follow up (1)

Need for data

- On (hazard) properties, uses, and releases of nanomaterials
 - Legislation (e.g. REACH)
 - Smart product databases, better use of available data

Knowledge development

- Level of understanding that enables generalisation / abstraction
 - Coordination and harmonisation
 - Predictive modelling
 - Concern-driven (test strategy depends on level of concern)
 - Life-cycle / Safe Innovation approaches



Needs for follow up (2)

Broadening of scope

- Keep eyes on new developments
 - ‘Baseline’ assessments of new generation(s) of nanomaterials

Deal with differences in pace between safety and innovation

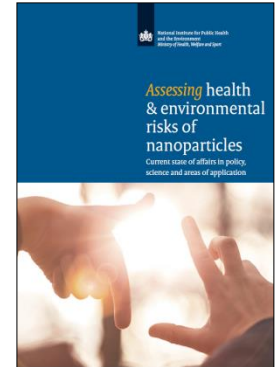
- Governance
 - Prioritise efforts by level of concern
 - Sharing of data
 - Addressing ‘cultural differences’ between safety and innovation views



Further information

J. Westra (editor)
2014

E.A.J. Bleeker, S. Evertz, R. Geertsma,
W.J.G.M. Peijnenburg, J. Westra, S.W.P. Wijnhoven



Assessing health & environmental risks of nanoparticles : Current state of affairs in policy, science and areas of application

RIVM Report 2014-0157

National Institute for Public Health and the Environment (RIVM)
Bilthoven, The Netherlands

<http://www.rivm.nl/bibliotheek/rapporten/2014-0157.html>