NANO2ALL
SOCIETAL ENGAGEMENT ON RESPONSIBLE NANOTECHNOLOGY

# Responsible Research and Innovation

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**INCOBRA info session RRI**

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# Responsible Research and Innovation

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# 01

## Introduction

Malsch Techno Valuation

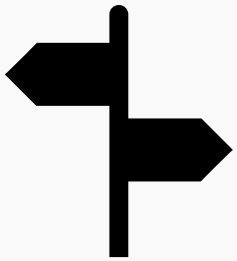
EthicSchool

**Introducing myself:**

- Dr Ineke Malsch, director of Malsch TechnoValuation:
- Consultant on Technology and Society:
- EthicSchool for Responsible Innovation
- EU projects since 2002: currently Nano2All: www.nano2all.eu
- Located in Utrecht, since 1999
- Graduated in Physics, University of Utrecht, 1991
- PhD in Philosophy, Radboud University Nijmegen, 2011.
- Thesis: Ethics and Nanotechnology

01

Introduction



## Traditional division of labour:

*"Science takes the credit for penicillin, while Society takes the blame for the Bomb"* (Jerry Ravetz (1975) '… et augebitur scientia' in Rom Harré (ed.) Problems of Scientific Revolution. University Press, London, p 45.)

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New trend towards **Do-It-Yourself ethics**:

Scientists and all stakeholders should imagine and discuss ethical and societal aspects of new technologies and change course early

01

Introduction

## From government to governance of research

- Traditionally, national governments have the responsibility to protect the safety and security of their citizens
- Progress in science and technology escapes the control of any government
- This calls for the common responsibility for global governance of research and innovation by governments and stakeholders

# Responsible Research and Innovation

**02**

**RRI state of the art**

**Responsible Innovation – 3 converging discourses:**

How and why to organise **co-responsibility** for science, technology and innovation?

| Domain | Trend |
|---|---|
| Philosophy / social science | Extending the scope from predominantly **public** sector technology development to predominantly **private** sector innovation. |
| Business | Extending corporate social responsibility to **responsible innovation.** |
| Policy | Extending (state) **government** of science and technology to stakeholder **governance** of science, technology and innovation. |

# Responsible Research and Innovation

## 02
## RRI state of the art

**States** keep the primary responsibility for protecting their citizens against technological risks,
They need cooperation of other **stakeholders**.
International agreements reflect the discussion on how to organise this **common responsibility**.

| Agreement/declaration | Who is responsible? |
|---|---|
| International Covenant on Economic, Social and Cultural Rights (1966) | **States** should guarantee freedom of scientific progress |
| UNESCO Recommendation on the Status of Scientific Researchers (1974) (update 2017) | **States, employers and scientists**. |
| UNESCO Universal Declaration on Human Genome and Human Rights (1997) | **States, scientists and others** share responsibilities for ethical governance |
| World Conference on Science Declaration on Science and the Use of Scientific Knowledge (1999) | **Governments and scientists** share responsibilities for science for sustainable development |
| UNESCO Universal Declaration on Bioethics and Human Rights (2005) | **States** are primarily responsible.<br>Additional guidance for **individuals, groups and organisations** |

# Responsible Research and Innovation

**02**

**RRI state of the art**

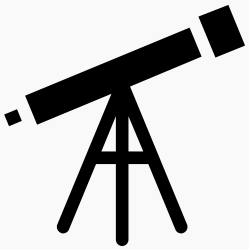
Each stakeholder group has a distinct **role responsibility** for research and innovation.

| Who? | What? |
|---|---|
| All | Engage in public dialogue |
| Scientists | Research ethics, study Ethical. Legal and Social Aspects of research |
| Industry | Corporate Social Responsibility |
| Governments | Regulation, facilitate governance |
| Civil Society Organisations | Introduce values and political interests in governance |
| Media | Report about technological trend and underlying value conflicts in innovation |
| Citizens | Be curious, responsible consumption, citizen science |

# Responsible Research and Innovation

**02**

**RRI state of the art**



**Anticipate future consequences:**

- Foresight: develop alternative future scenarios to imagine likely and desirable futures
- Back-casting: develop a roadmap from the present to the desirable future
- Example: Scenario Exploration System JRC (adapted to nanotechnology in Nano2All):
  - Serious role game
  - allowing five stakeholders to explore the viability of their individual and common strategies
  - in contrasting global scenarios
  - over 5, 10 and 20 years time frames

Info: https://ec.europa.eu/jrc/en/research/foresight/ses

**02**

**RRI state of the art**

## Open science and innovation

Value-sensitive design:

- Address social values from early stage research and innovation
- E.g. privacy-enhancing technologies, safer-by-design

Citizen science:

- Let lay persons participate in research
  - E.g. Influenzanet: https://www.influenzanet.eu/
  - Be aware of ethical dilemma's: informed consent, will volunteers benefit?

Inclusion (gender, disadvantaged groups)

- Scientific careers
- Open access publications and higher education

**02**

**RRI state of the art**

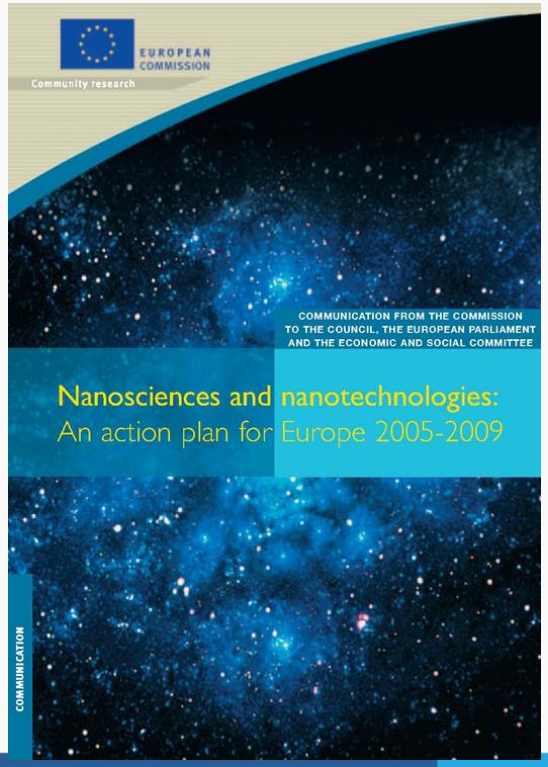
**Dialogue**

- Science for policy
  - Scientific experts should contribute to evidence-based policy making
- Mobilisation and mutual learning
  - Governments, scientists and all stakeholders should discuss priorities in research and potential future consequences

# Responsible Research and Innovation

## 03

## RRI in Europe




**It started with nanotechnology**

- ~2003: National Nanotechnology Initiative USA & European Commission
- initiated and invested in early stage studies and dialogue
- on ethical and societal aspects of nanotechnology
- Aim: to prevent controversy similar to GMO debate in Europe over nanotechnology
- Later broadened to other emerging technologies

# Responsible Research and Innovation

**03**

**RRI in Europe**


Currently (European) policy interest has shifted to

**Responsible Research & Innovation**

- Integrate study of ethical and societal aspects in technological research projects
- Stimulate value sensitive design (e.g. by involving citizens and end-users in early stages of research)
- Foster public dialogue about responsible governance of innovation

**03**

**RRI in Europe**

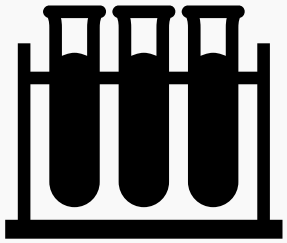
The EU policy fostering RRI continues to evolve. This is visible in the key-words introduced by subsequent Commissioners.

| EU H2020 (2014-2020, introduced by Commissioner Maire Geoghegan-Quinn): 6 keys | EU Commissioner Carlos Moedas (Research and Innovation, 2015): 3O policy |
|---|---|
| • Public engagement<br>• Gender<br>• Science education<br>• Open access<br>• Ethics<br>• Governance | • Open science<br>• Open innovation<br>• Open to the world |

# Responsible Research and Innovation

**03**

**RRI in Europe**



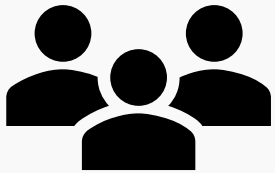
**RRI in EU H2020:**

- Horizontal priority
  - Ethics screening of all proposals eligible for funding (by at least 2 reviewers)
  - Coordination and Support Actions in thematic programmes (e.g. Nano2All)
- Science with and for Society (SWAFS) programme
  - Developing knowledge base in social sciences and humanities on RRI

# Responsible Research and Innovation

**04**

**Discussion**



**Issues:**

- Is Responsible Research and Innovation a global endeavour or an expression of European values?
- Are their examples of Brazilian policies or initiatives fostering Responsible Research and Innovation?
- If so, what are differences and similarities with European examples?

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# Responsible Research and Innovation

**05**

**Conclusion**

**To conclude:**

- Responsible Research and Innovation addresses gaps in the capacity of national governments to take their responsibility to protect their citizens against risks posed by progress in science and technology
- RRI calls for shared responsibility by governments, researchers, industry, civil society and other stakeholders
- Innovative solutions are being developed in projects in different countries and the EU
- Innovative Brazilian-European solutions are welcome


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