RESPONSIBLE RESEARCH AND INNOVATION: OLD WINE IN NEW BOTTLES?

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SCIENCE-SOCIETY RELATIONSHIP

- Research and innovation important contribution to economic growth, improved health and living standards

- But also ethical concerns and negative consequences for people and the environment

- And mismatches:
  - Lack of innovation development for certain problems
  - Vulnerable groups in society adopt innovations less often
  - Much knowledge is not implemented
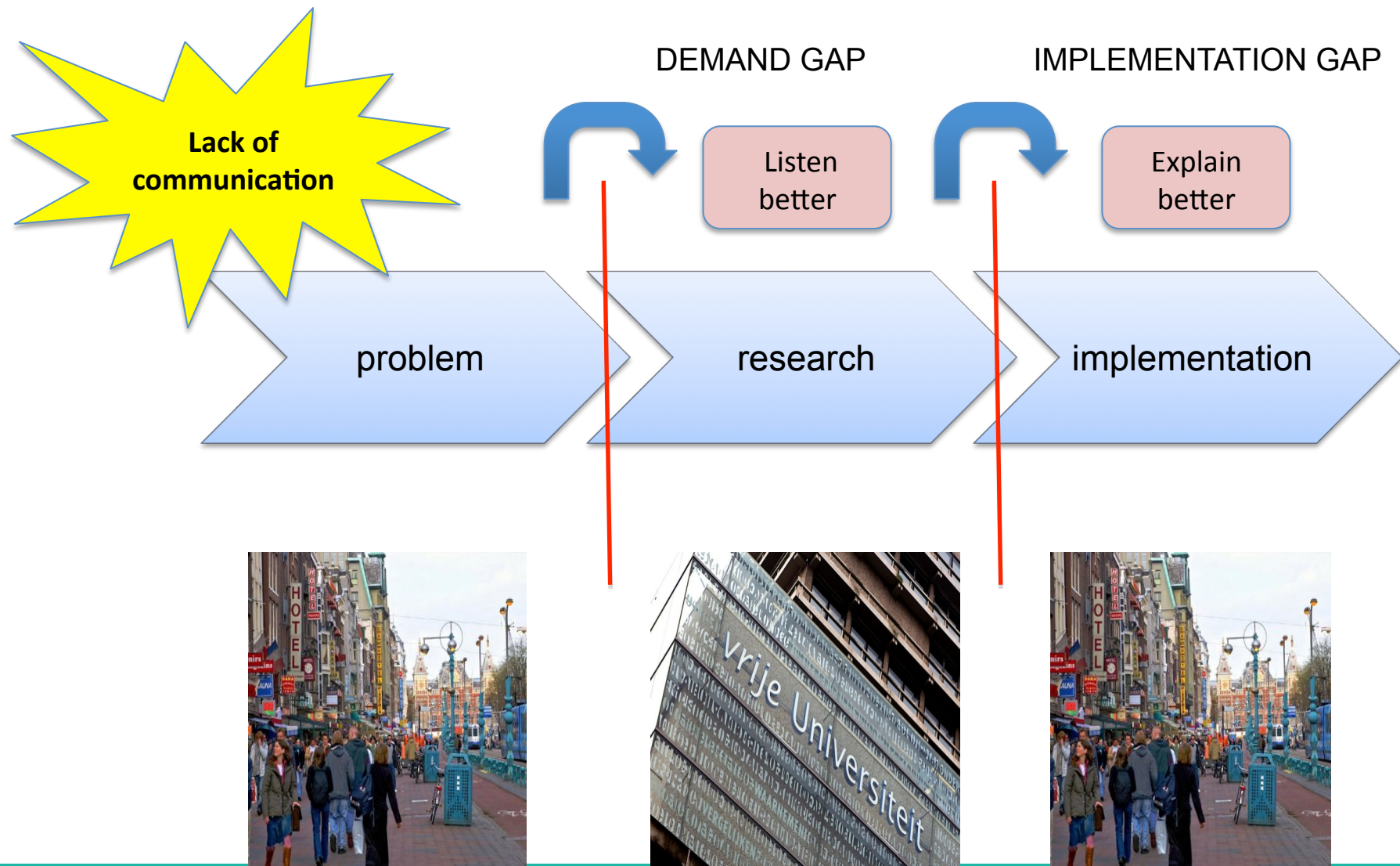
Uncertainty about the facts

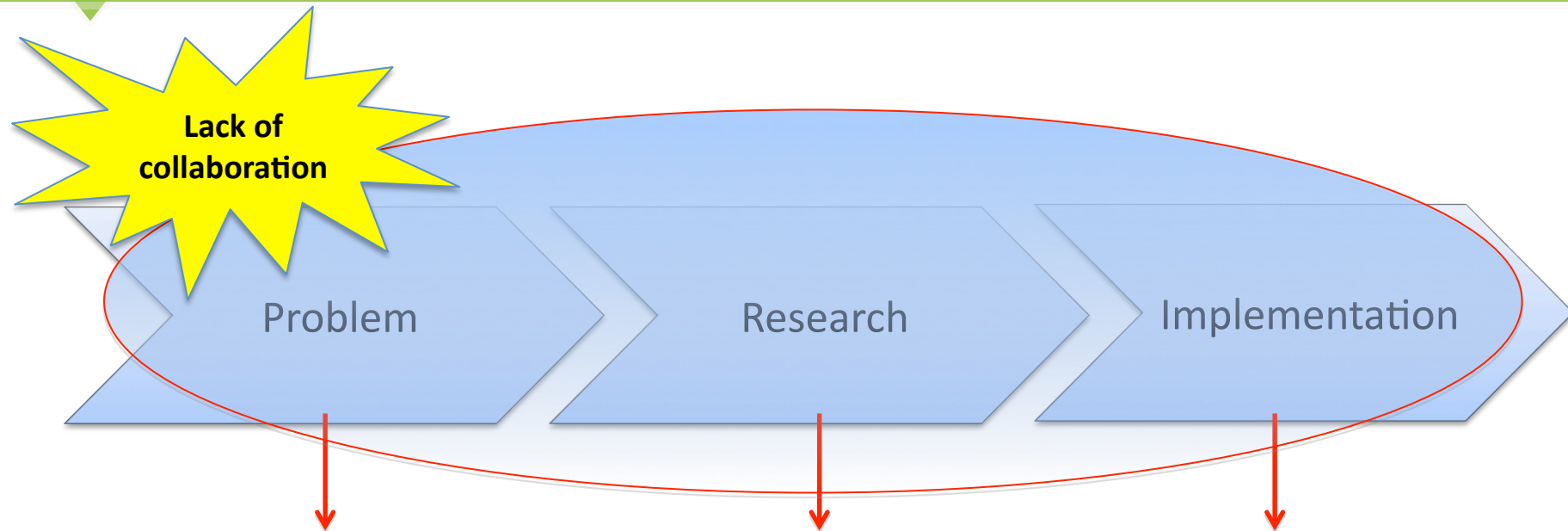Disagreement about the values

SCIENCE-SOCIETY RELATIONSHIP

Science and technology do not merely happen to us

How do we shape research and innovation as process?

SCIENCE-SOCIETY RELATIONSHIP

DEMAND GAP

IMPLEMENTATION GAP

Lack of communication

Listen better

Explain better

problem → research → implementation

Lack of collaboration

Problem

Research

Implementation

Science and practice join hands
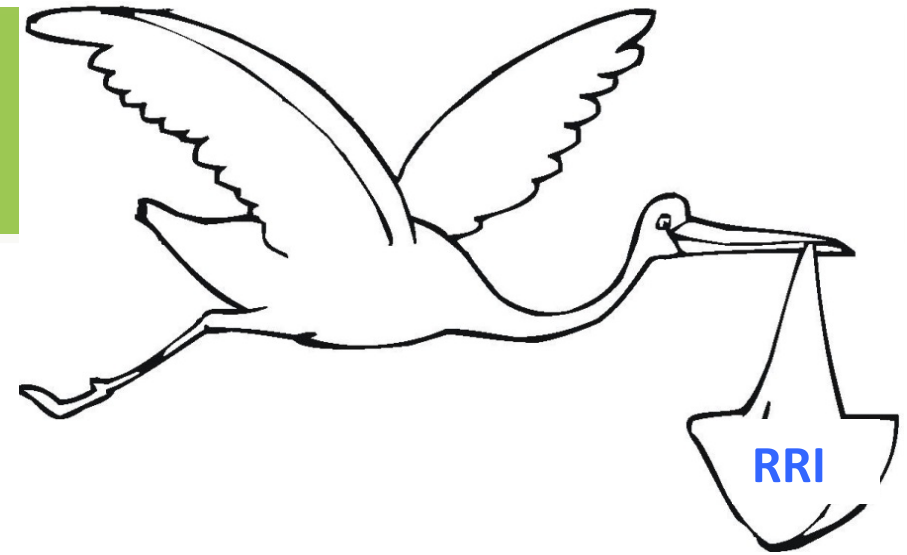
TRACING THE ORIGIN OF RRI

Developed as an approach to governance of research and innovation at **European Commission** level

From 2003 on to 2011, an increasing call for interdisciplinary collaboration, socio-technical integration and public engagement

Gradually ending up in
R&I policies, funding programs,
etc.. in 2011 → RRI

TRACING THE ORIGIN OF RRI

RRI

Lessons from earlier EC Framework programs

- Grand challenges
- Acceptability by marketing no option
- Diversity is key to creativity & quality
- Early engagement is key to fitting, and acceptable solutions

European policy agendas – **the keys**

- Gender
- Open Access
- Ethics
- Public engagement
- Science education

Opening up Research – STS studies

- Constructive Technology Assessment
- Mode 2 science
- Public engagement
- Multi-actor approach
- Action research
- Co-creation
- Transdisciplinarity

CONCEPTUALIZING RRI: RESPONSIBILITY

Individualist, consequentialist responsibility

- Someone (actor) assumes responsibility for something (the result of actions and decisions)

- relative to body of rules (laws, norms)

- relative to quality of available information

CONCEPTUALIZING RRI: RESPONSIBILITY

Emphasis on collective, shared responsibility:

- 'higher level' responsibility: anticipatory governance
- at the level of organisations and sectors
  universities, companies, policy orgs, financial sector
- aligning wide range of actors and activities in the
  deliberation of values and purposes

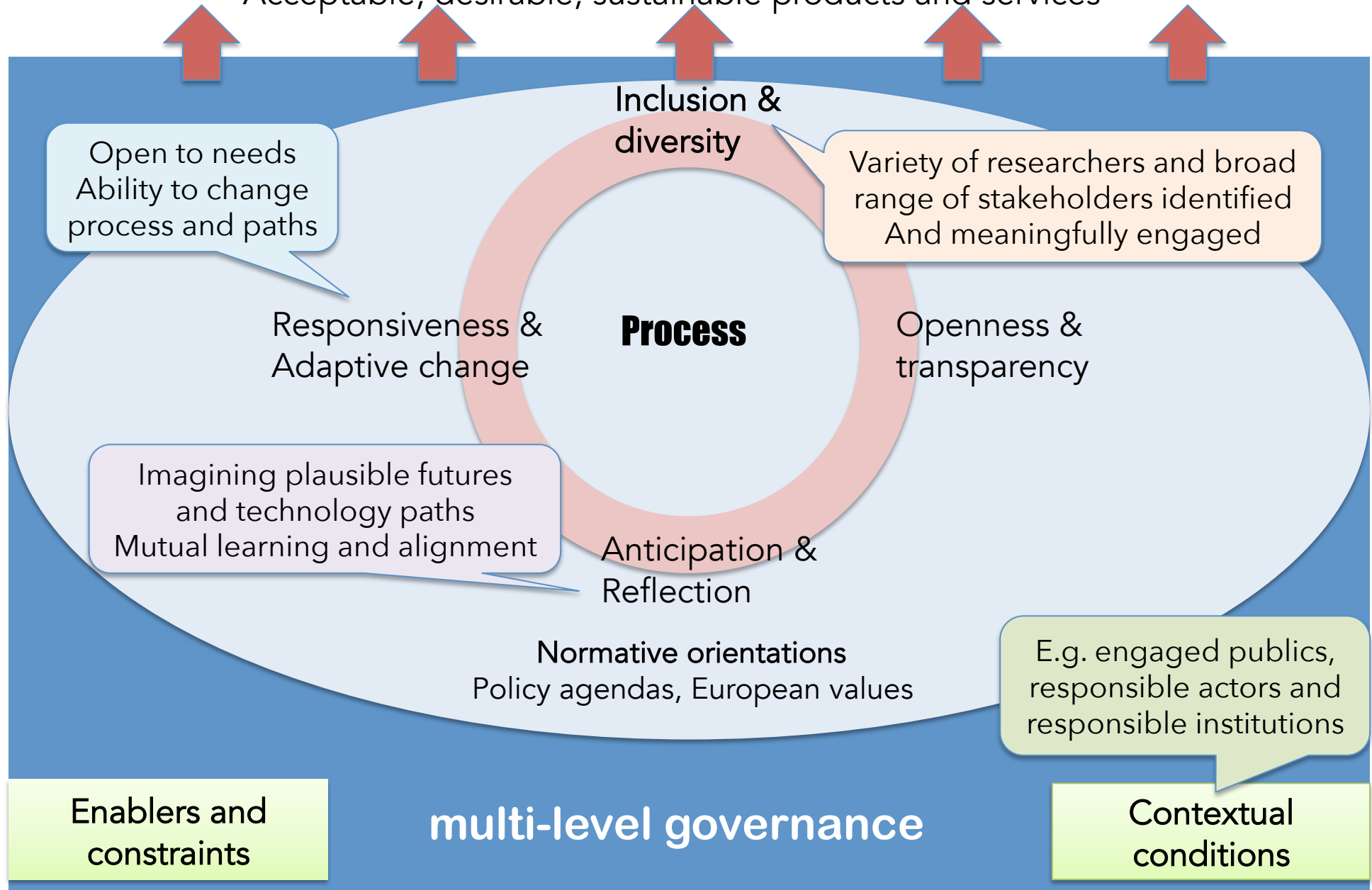# CONCEPTUALIZING RRI

The European Commission website:

RRI is an **inclusive** approach to research and innovation (R&I), to ensure that **societal actors work together** during the whole research and innovation process. It aims to **better align** both the **process** and **outcomes** of R&I, with the **values, needs and expectations** of European society
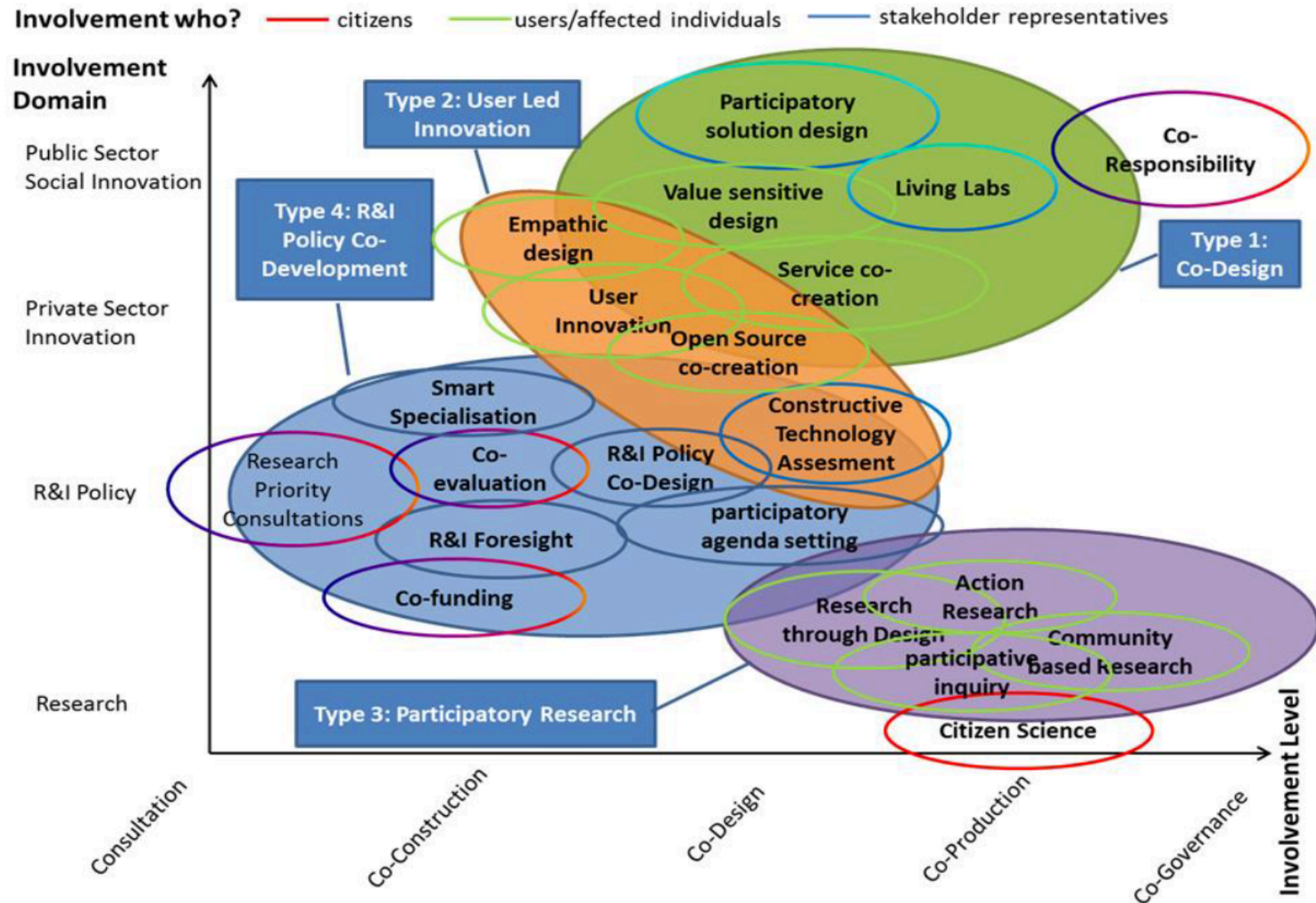
Not one definition, but many definitions

Outcomes

Solve societal challenges
Better technologies, better societies

Acceptable, desirable, sustainable products and services

Inclusion & diversity

Open to needs
Ability to change process and paths

Variety of researchers and broad range of stakeholders identified
And meaningfully engaged

Responsiveness & Adaptive change

Process

Openness & transparency

Imagining plausible futures and technology paths
Mutual learning and alignment

Anticipation & Reflection

Normative orientations
Policy agendas, European values

E.g. engaged publics, responsible actors and responsible institutions

Enablers and constraints

multi-level governance

Contextual conditions

Source: BEFORE consortium (coordinator: Philine Warnke)

OPERATIONALIZING RRI: AN EXAMPLE

Agenda for burns research: adapting the national R&I agenda to include patients' needs and concerns

Dialogue model for inclusive deliberation and decision-making
Itching *appears to be a primary concern that is not researched*

R&I system is tough to change *at first*
A few years of concerted efforts: itching research is performed

Faculty of Science

NEED FOR BETTER METHODS AND TOOLS

Playful toolbox for reflective deliberation and learning in R&I contexts

Frame Reflection Lab:
using AV stories in
playful workshop
to see own perspective
in relation to others

Theatrical debate:
using semi-scripted
scenes to explore and
deliberate future
scenarios of R&I

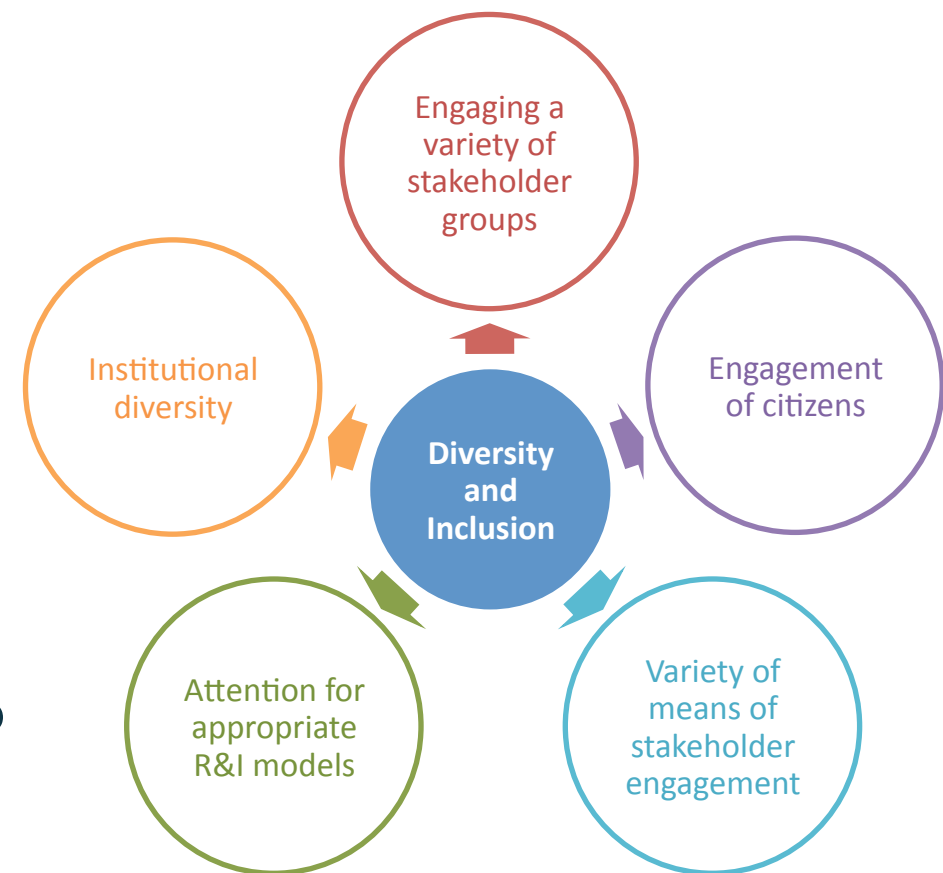imagination, co-creation, experimentation space

What is 'good' RRI?
Set of criteria and indicators
for RRI **process**

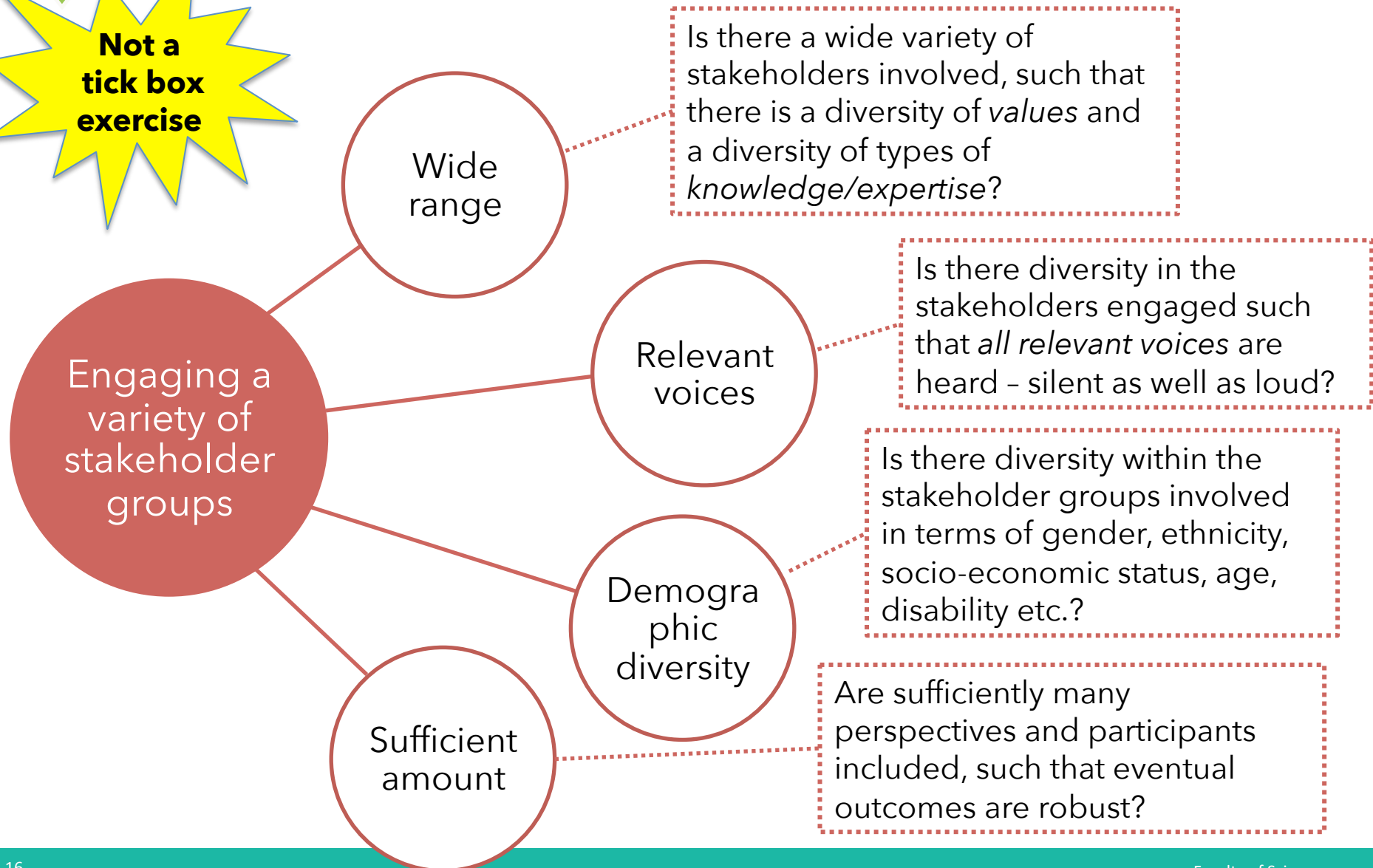Process requirements as
quality criteria:

- *Evaluative framework* to
  assess RRI initiatives:
  retrospective analysis

- *Self-reflection tool* to help
  shape RRI initiatives:
  prospective analysis

RRI Tools

Engaging a variety of stakeholder groups

Institutional diversity

Engagement of citizens

Diversity and Inclusion

Attention for appropriate R&I models

Variety of means of stakeholder engagement

This is not a checklist, but a thinking tool!

Not a tick box exercise

Engaging a variety of stakeholder groups

Wide range

Is there a wide variety of stakeholders involved, such that there is a diversity of *values* and a diversity of types of *knowledge/expertise*?

Relevant voices

Is there diversity in the stakeholders engaged such that *all relevant voices* are heard – silent as well as loud?

Demographic diversity

Is there diversity within the stakeholder groups involved in terms of gender, ethnicity, socio-economic status, age, disability etc.?

Sufficient amount

Are sufficiently many perspectives and participants included, such that eventual outcomes are robust?

EVALUATING RRI: OUTCOMES AND IMPACTS

- Important for showing value of RRI – does it work? (program theory)
- Little researched yet
- Medium-/long-term → use of proxies
- How to 'measure'?
- Evidence so far is inconclusive – both positive and negative
- Danger of rethoric and tokenism

| R&I outcomes	Societal impacts
Ethically acceptable Environmentally sustainable Socially desirable innovations	Contribute to solving societal challenges (e.g. 7 EU Grand Challenges)

INSTITUTIONALIZING RRI

Making RRI 'business as usual'

What does RRI mean to scientists?

INSTITUTIONALIZING RRI

Study among scientists in natural/ medical sciences in universities:

- Semi-structured interviews (n=20)

- 1 workshop on RRI (n=15)

- Presentation on RRI followed by discussion (n=28)
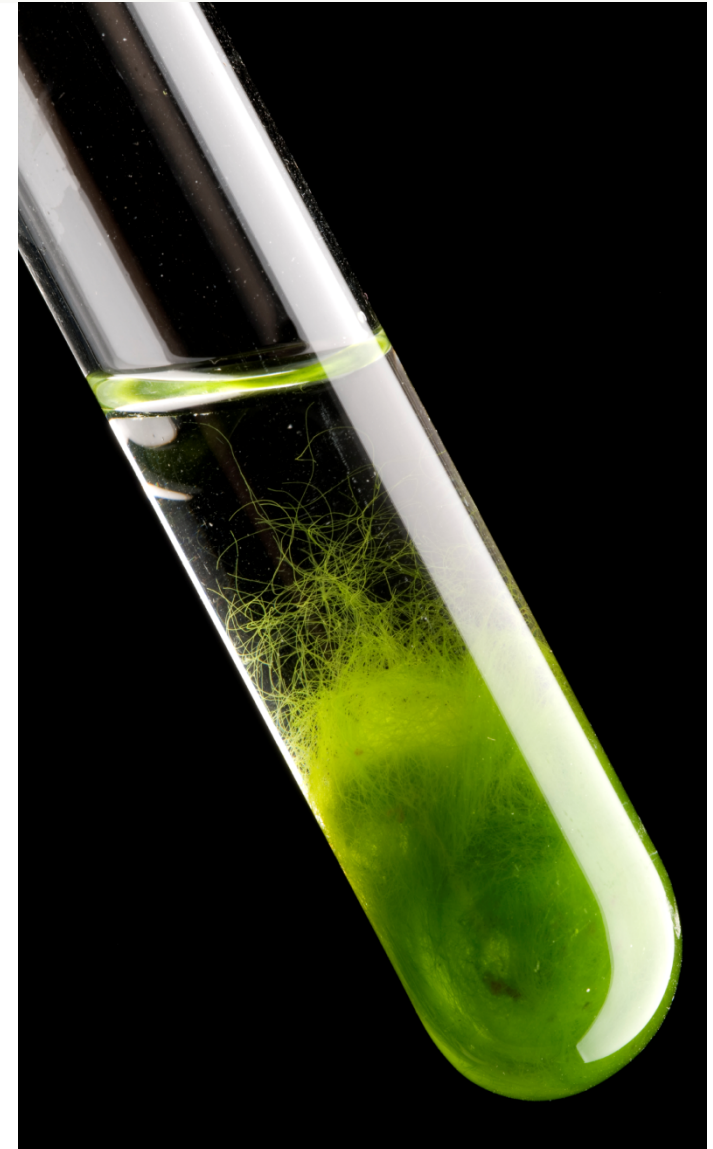
INSTITUTIONALIZING RRI:
A TRANSFORMATION OF THE WORLD OF SCIENCE

Changed focus

- Achieve social benefits and involvement of all stakeholders in society
- Prioritise social, ethical and environmental impacts and opportunities

Changed process

- Anticipate and manage risks to adapt quickly
- Openness and transparency an integral component of the research and innovation process

INSTITUTIONALIZING RRI

- RRI is not a concept most researchers are familiar with
- They relate it mostly to outcomes – **societal benefits** – not so much to the research process itself nor to research ethics
- Four types of scientists: doing it already, curious, indifferent, hostile
- We encountered a few proponents, but mostly met indifference and hostility
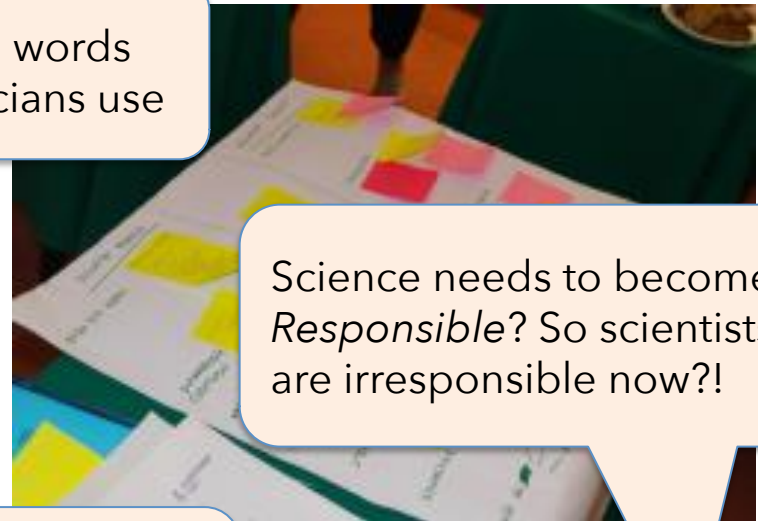- Low urgency for 'better' science for society!

INDIFFERENCE AND HOSTILITY
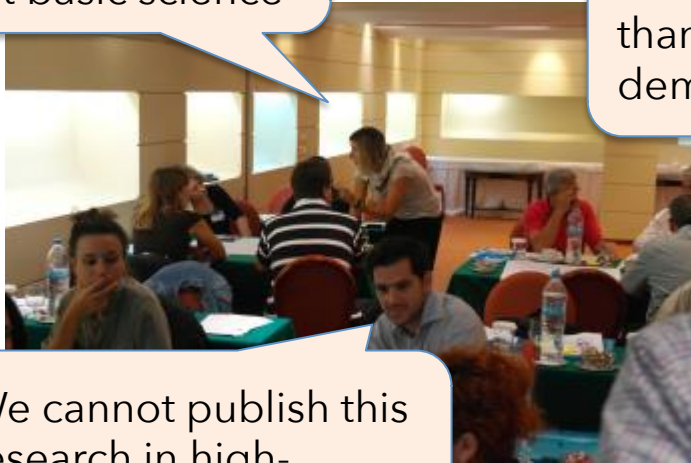
RRI does not correspond to the 'real world'

Nothing more than words managers or politicians use

Science needs to become *Responsible*? So scientists are irresponsible now?!

This is only for applied research, not basic science

RRI is about much more than only research! It is too demanding for researchers!

We cannot publish this research in high-impact journals
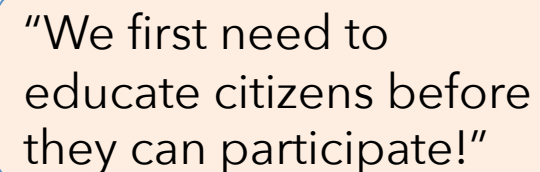
RRI is the end of 'pure' science!!

INSTITUTIONALIZING RRI

- Inclusion of **professionals** at grassroots level
- Including other types of societal stakeholders, (e.g. citizens or patients) not favored
- Lack of appreciation of experiential knowledge
- The public should have **trust** in science as an institution or the scientist as a professional

"How do you expect these people, society, to have a voice in the innovation process? (…) Then money would go to sophisticated vending machines, or nicer TVs. Society couldn't care less that we develop things that are for the benefit of medicine."

INSTITUTIONALIZING RRI

- Responsibility to **educate the public** via popular press about possibilities and limitations of technologies (but not raise unrealistic expectations in competition for funding or publications)

- Strong prevalence of the 'deficit thinking' of the public

- Reflection is located predominantly downstream

- Mostly concerns technical and economic aspects – much less societal & ethical aspects

- Not something you do in interaction with stakeholders

"We first need to educate citizens before they can participate!"

INSTITUTIONALIZING RRI: A COMPLEX PROCESS

New culture and structure for a new R&I practice

- A change of…

  - thought
  - action
  - organisation

"Openness to the other means recognizing that I myself must accept something against me, even when no one else mentions it."

Hans-Georg Gadamer

SYSTEM CHANGE or TRANSITION

INSTITUTIONALIZING RRI: A COMPLEX PROCESS
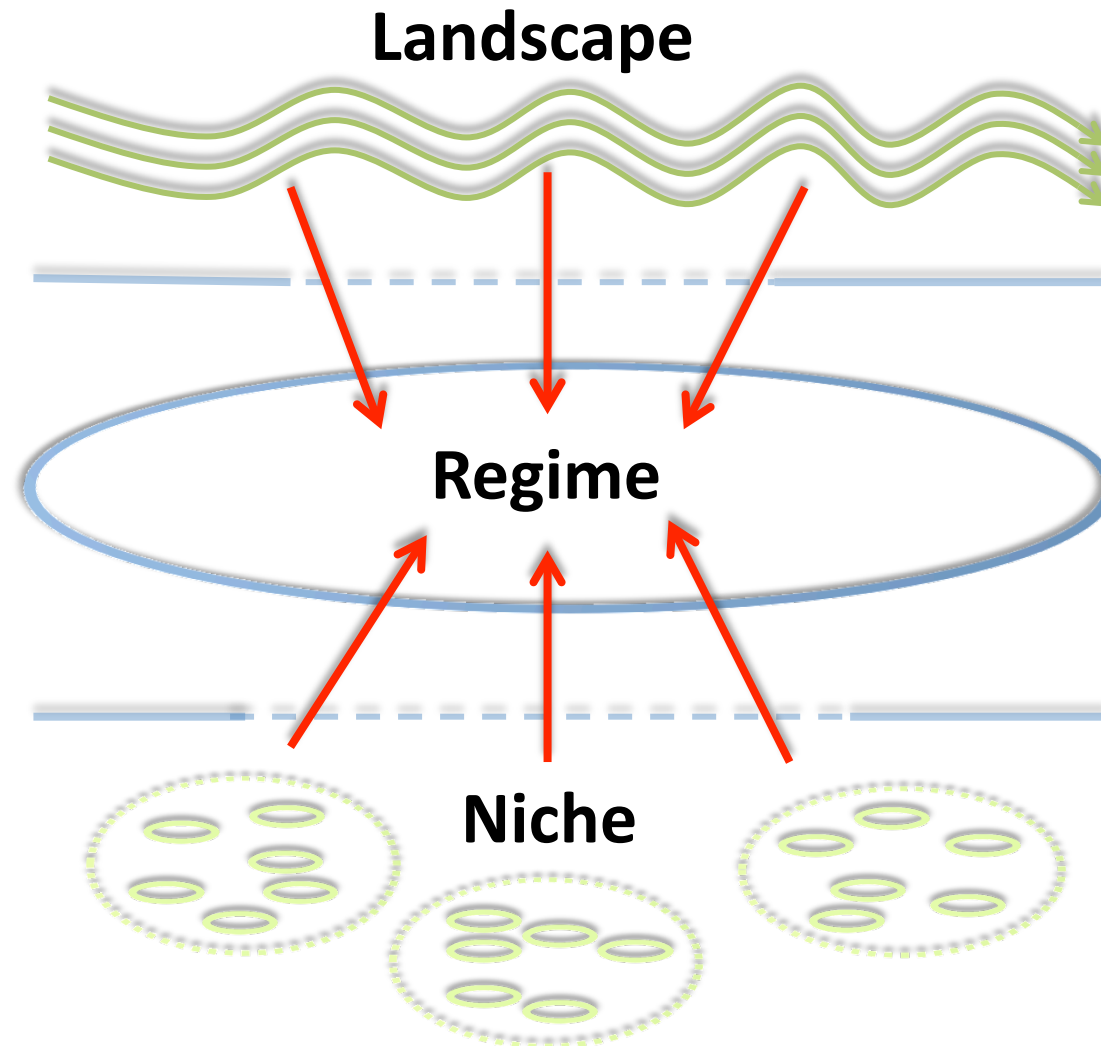
'Landscape'
Broader societal trends

'Regime'
Dominant structure, culture and practice of system

'Niches'
Innovative experiments in which actors create alternative practices (deviant from regime)

Landscape

Regime

Niche

INSTITUTIONALIZING RRI: A COMPLEX PROCESS

- Together jump higher and further
- More emphasis on societal engagement and societal impact
- But it is often society that has to find the way and bridge the gap
- Easier for public bodies and industry than for citizens/patients
- Funders and universities need to facilitate this more:
  - Adapt incentives – redefine excellence
  - Develop competences: community service learning, transdisciplinary research

University

Come, we are open!

Respon- sible Research & Innovation
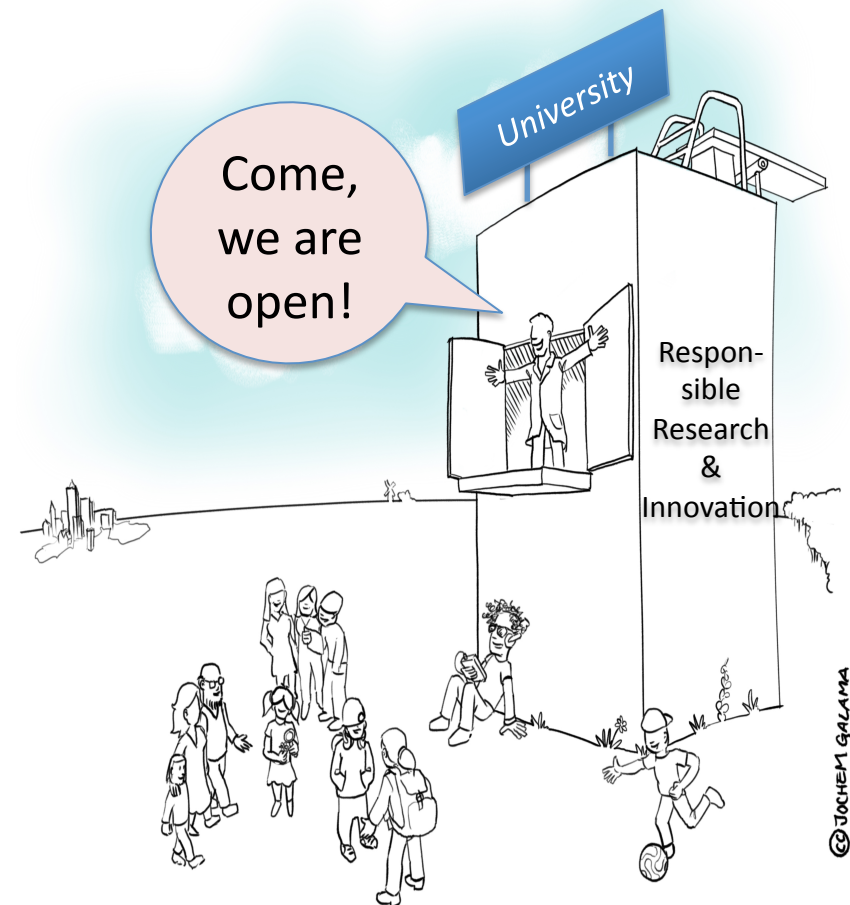
RRI – OLD WINE IN NEW BOTTLES?

THANK YOU!

RRI team at Athena Institute:

Frank Kupper

Pim Klaassen

Eugen Popa

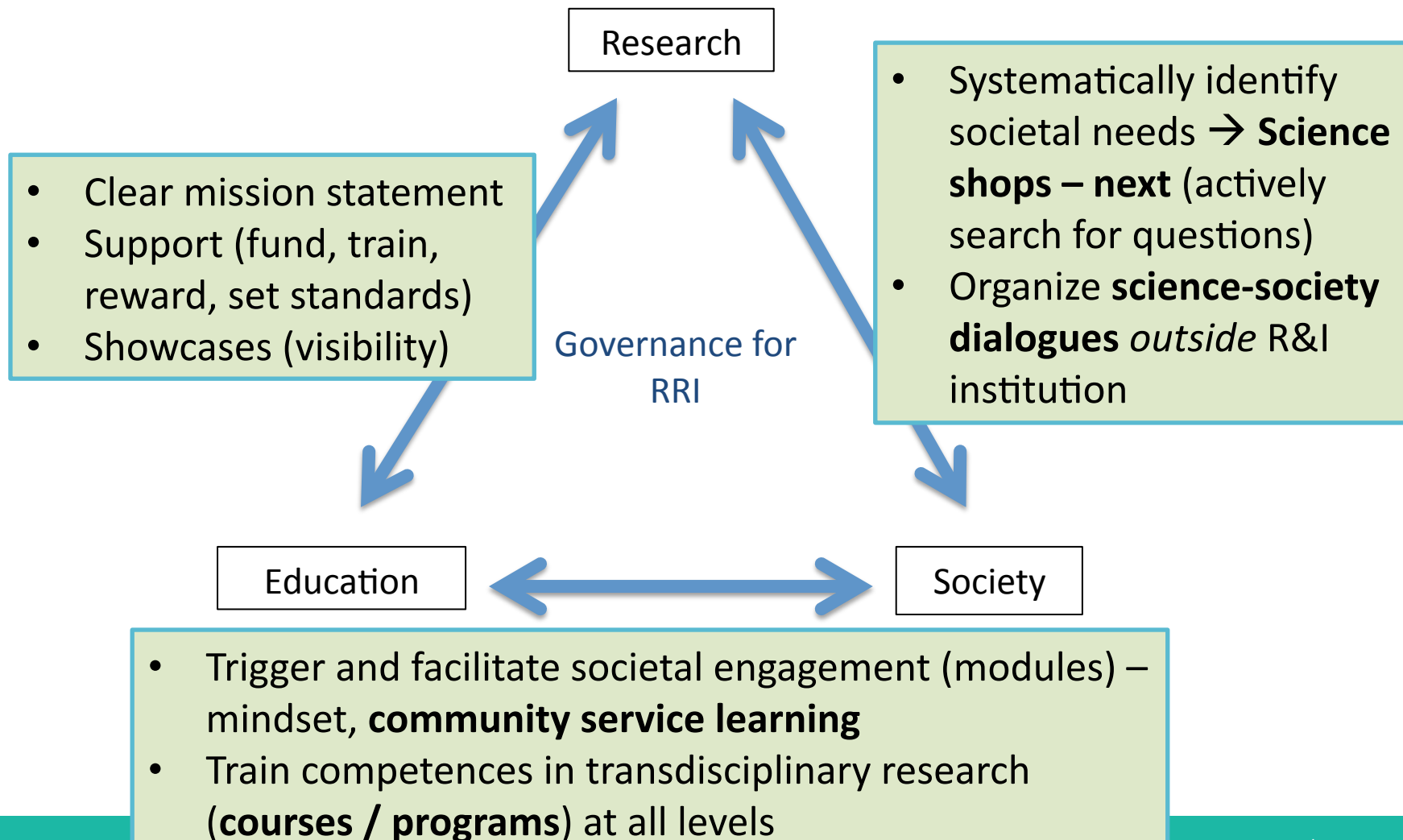Marjoleine van der Meij

Wieke Betten

Aafke Fraaije

Jantien Schuijer

Watch out for tokenistic tick boxing!

- Participatory action research
- Transdisciplinary research

Research

- Clear mission statement
- Support (fund, train, reward, set standards)
- Showcases (visibility)

Governance for RRI

- Systematically identify societal needs → **Science shops – next** (actively search for questions)
- Organize **science-society dialogues** *outside* R&I institution

Education

Society

- Trigger and facilitate societal engagement (modules) – mindset, **community service learning**
- Train competences in transdisciplinary research (**courses / programs**) at all levels

Modes of implementation

Action	shaping R&I processes	co-production of knowledge/ technology
Governance	R&I agenda-setting	Integration embedment
Learning	societal learning processes	actor learning processes