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# Hvordan integrere RRI i forskningspraksis?

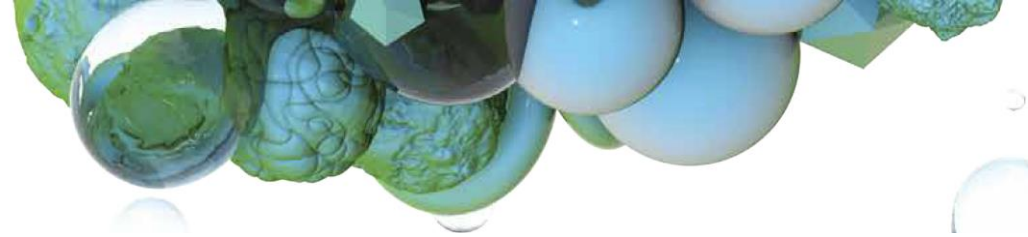
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Forsker

Senter for Teknologi og Samfunn, NTNU

Gruppeleder RRI, Senter for Digitalt Liv Norge





## RRI – en policy ide

... aktivt å styre og utforme forholdet mellom forsknings- og teknologiutvikling og samfunnet

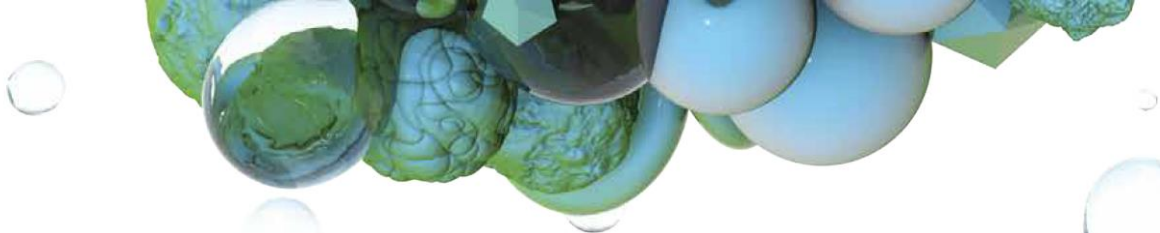
ELSA: etiske, rettslige (legale) og sosiale aspekter

RRI: *What do we want science and innovation to do (not only what do we not want them to do).* (Owen, Stilgoe, Macnaghten, Gorman, Fisher and Guston 2013:28f)



# Hva skal RRI bety i praksis?

1. RRI i forskningssøknader og –prosjekter: noen tips og eksempler
2. RRI i systemet – eller forskningspraksissens økologi

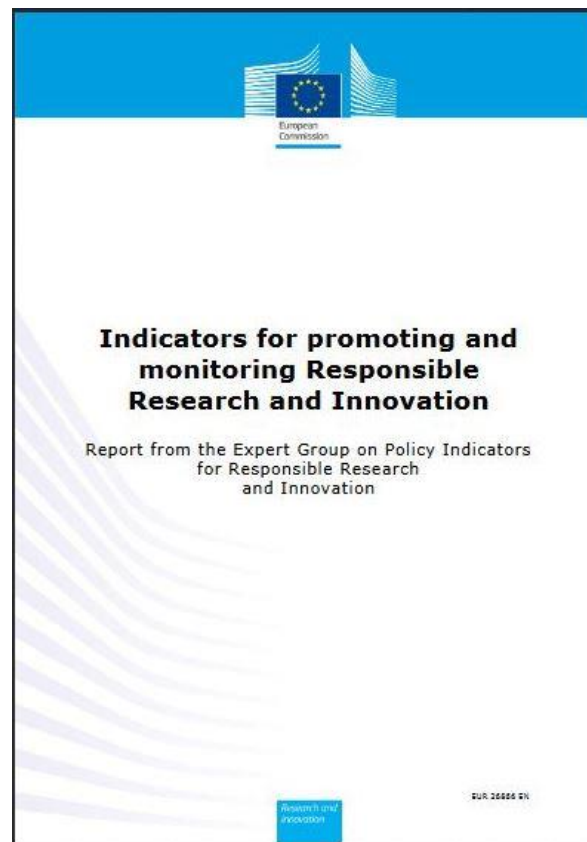


# 1. RRI i forskningssøknader og –prosjekter: noen tips og eksempler

# RRI i praksis - EU

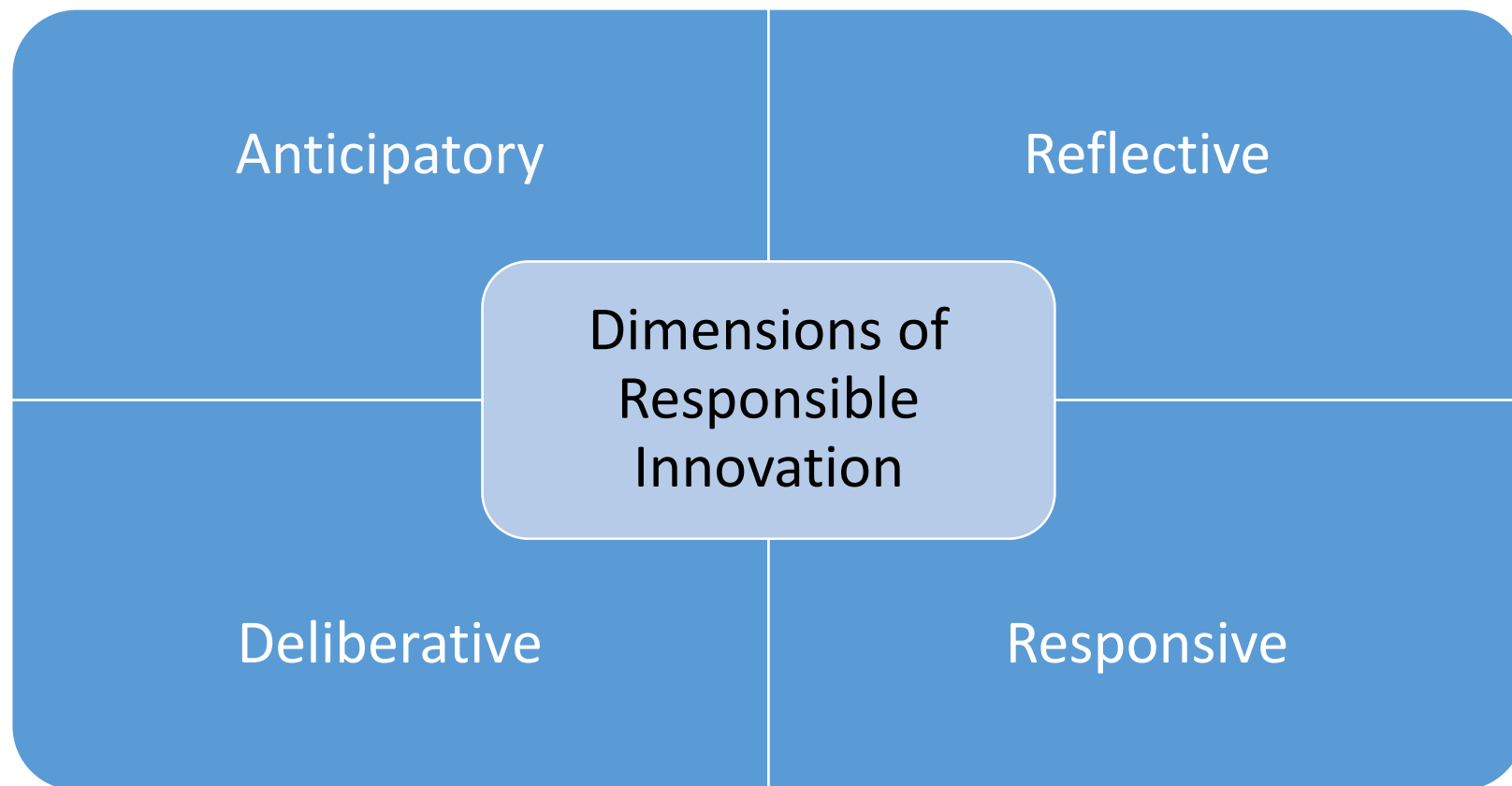
Keys of RRI:

1. Governance
2. Ethics
3. Gender balance
4. Open access
5. Science education
6. Public engagement
7. Sustainability
8. Social equality



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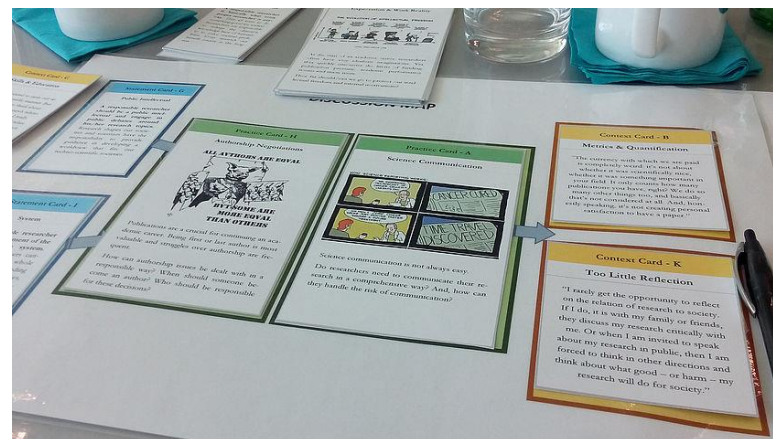
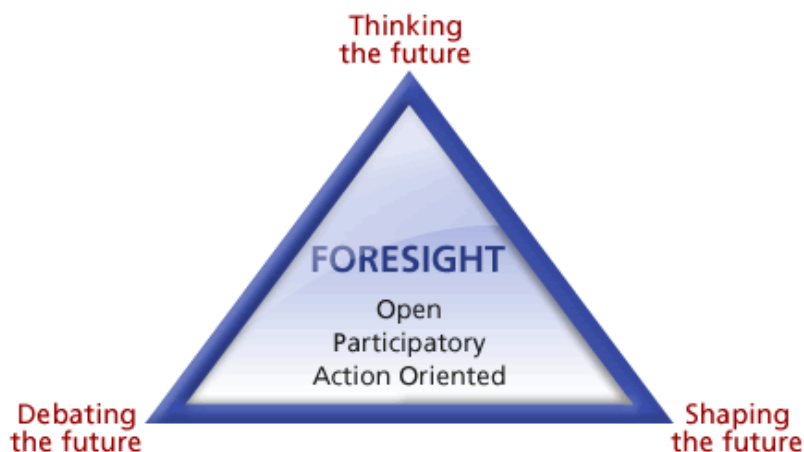
# RRI i praksis - Norge



## The adaptive management cycle



# Metoder for å fremme refleksjon, inkludering, eller framsyn



Public Engagement



| Dimension    | Indicative techniques and approaches | Factors affecting implementation                 |
|--------------|--------------------------------------|--------------------------------------------------|
| Anticipation | Foresight                            | Engaging with existing imaginaries               |
|              | Technology assessment                | Participation rather than prediction             |
|              | Horizon scanning                     | Plausibility                                     |
|              | Scenarios                            | Investment in scenario-building                  |
|              | Vision assessment                    | Scientific autonomy and reluctance to anticipate |
|              | Socio-literary techniques            |                                                  |

| Dimension | Indicative techniques and approaches                                                                                                                                                                                                                      | Factors affecting implementation                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inclusion | <p>Consensus conferences</p> <p>Citizens' juries and panels</p> <p>Focus groups</p> <p>Science shops</p> <p>Deliberative mapping</p> <p>Deliberative polling</p> <p>Lay membership of expert bodies</p> <p>User-centred design</p> <p>Open innovation</p> | <p>Questionable legitimacy of deliberative exercises</p> <p>Need for clarity about, purposes of and motivation for dialogue</p> <p>Deliberation on framing assumptions</p> <p>Ability to consider power imbalances</p> <p>Ability to interrogate the social and ethical stakes associated with new science and technology</p> <p>Quality of dialogue as a learning exercise</p> |

| Dimension   | Indicative techniques and approaches                                                                                                                                                                                                                                                                                                            | Factors affecting implementation                                                                                                                                                                                                                                                                                                                            |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reflexivity | <p>Multidisciplinary collaboration and training</p> <p>Embedded social scientists and ethicists in laboratories</p> <p>Ethical technology assessment</p> <p>Codes of conduct</p> <p>Moratoriums</p> | <p>Rethinking moral division of labour</p> <p>Enlarging or redefining role responsibilities</p> <p>Reflexive capacity among scientists and within institutions</p> <p>Connections made between research practice and governance</p> |

# Eksempel: Definere Forskningsagenda i Felleskap



You are in: [Home](#) » [About the JLA](#)

[About PSPs](#)

[JLA Advisers](#)

[History](#)

## About the James Lind Alliance



**“The idea of bringing together clinicians, patients and carers to discuss research priorities seems obvious – why shouldn’t all those affected have a chance to jointly discuss frustrations about the things we don’t know, and aspirations for the future?”**

*- Irenie Ekkeshis, patient involved in the Sight Loss and Vision PSP*



# Eksempel: Valoriseringspanel

... eksempel for en metode for å fremme verdiskaping

- Drøfter relevans, målsetninger, applikasjonsaspekter, sosial aspekter, etc. ...

## Valorisation panel

- Leiden Alzheimer Research Nederland (LeARN)
- Centre for Translational Molecular Medicine (CTMM)
- Alzheimer Nederland
- Ministerie van VWS
- Nederlandse Vereniging van Neurologen
- Geheugenpoli UMC & VU
- CBO/Kwaliteitsinstituut voor de gezondheidszorg
- Huisartsenpraktijk
- NHG School voor Geriatrie
- Philips Research
- Schering Plough

# Eksempel: Integrasjon av samfunnsviter

## BioZement 2.0

Systems analysis and fundamental control of bacterial processes in the production of bio-concrete for construction purposes.

The production of concrete accounts for more than 5% of global anthropogenic CO<sub>2</sub> emissions, and new, disruptive technology in the field is needed to make a large-scale impact. Among the alternative avenues currently pursued is the use of naturally occurring mineral-microbe interactions in the production of construction materials. Integrated efforts across multiple disciplines, including biotechnology, nanotechnology, mathematics, geochemistry, process engineering, techno-economics, and social sciences will make it possible to pave the way for a more sustainable production of concrete for construction purposes in the bioeconomy era.



The idea of BioZement originates from the Research Council of Norway's first Idélab "Towards the Zero Emission Society" (2014). Our basic concept is to employ bacteria to produce acid to partially dissolve crushed limestone, and subsequently induce an increase in pH by biocatalysis to initiate re-precipitation of calcium carbonate to bind sand grains together, forming a solid, concrete-like

### Prosjektinformasjon



Kategori:  
Industri



Varighet:  
01.05.2017-30.09.2018



Støtte:  
2020111. kr



Institusjon:  
UiO

### Prosjektleder



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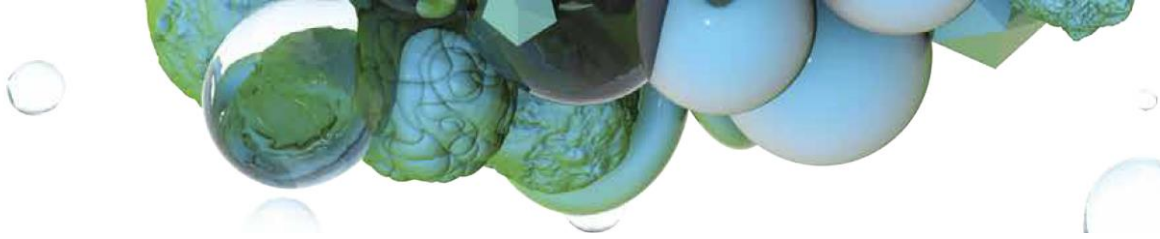
[Profil](#)

### Partnere

SINTEF, NTNU, Consumption Research Norway (SIFO), SP, Sveriges Tekniska Forskningsinstitut



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→ Hva gir mening for min forskingspraksis –  
hva vil jeg få ut av «å gjøre RRI»?



# ...oversatt til forskningssøknad

2. Societal and scientific challenges

5. Transdisciplinary approach

6. The project plan, project management, organisation and cooperation

**Task 8. Project management, RRI and dissemination**

9. Responsible research and innovation, communication and dialogue with society

10. Other relevant aspects

Environmental impact

Ethical perspectives

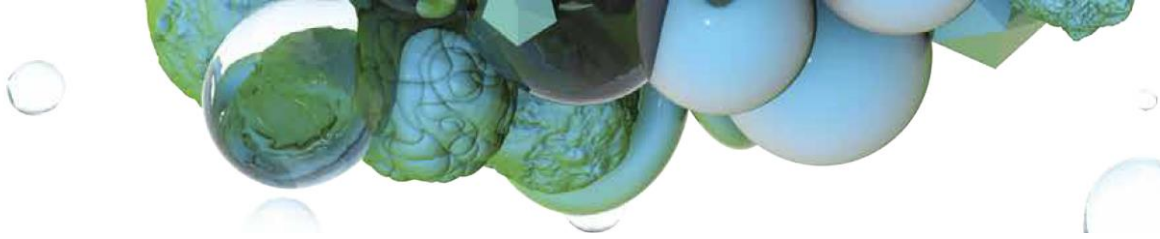
Gender issues (Recruitment of women, gender balance and gender perspectives)



# Vurdering av RRI

- RRI-rammeverk
- Er det satt av budsjett for RRI?
- Wording (dialogue vs outreach, public engagement vs. public perception ...)





## 2. RRI i system – eller forskningspraksis' økologi



# Hvordan forskere navigerer RRI

1) Følge regler og prøve seg fram

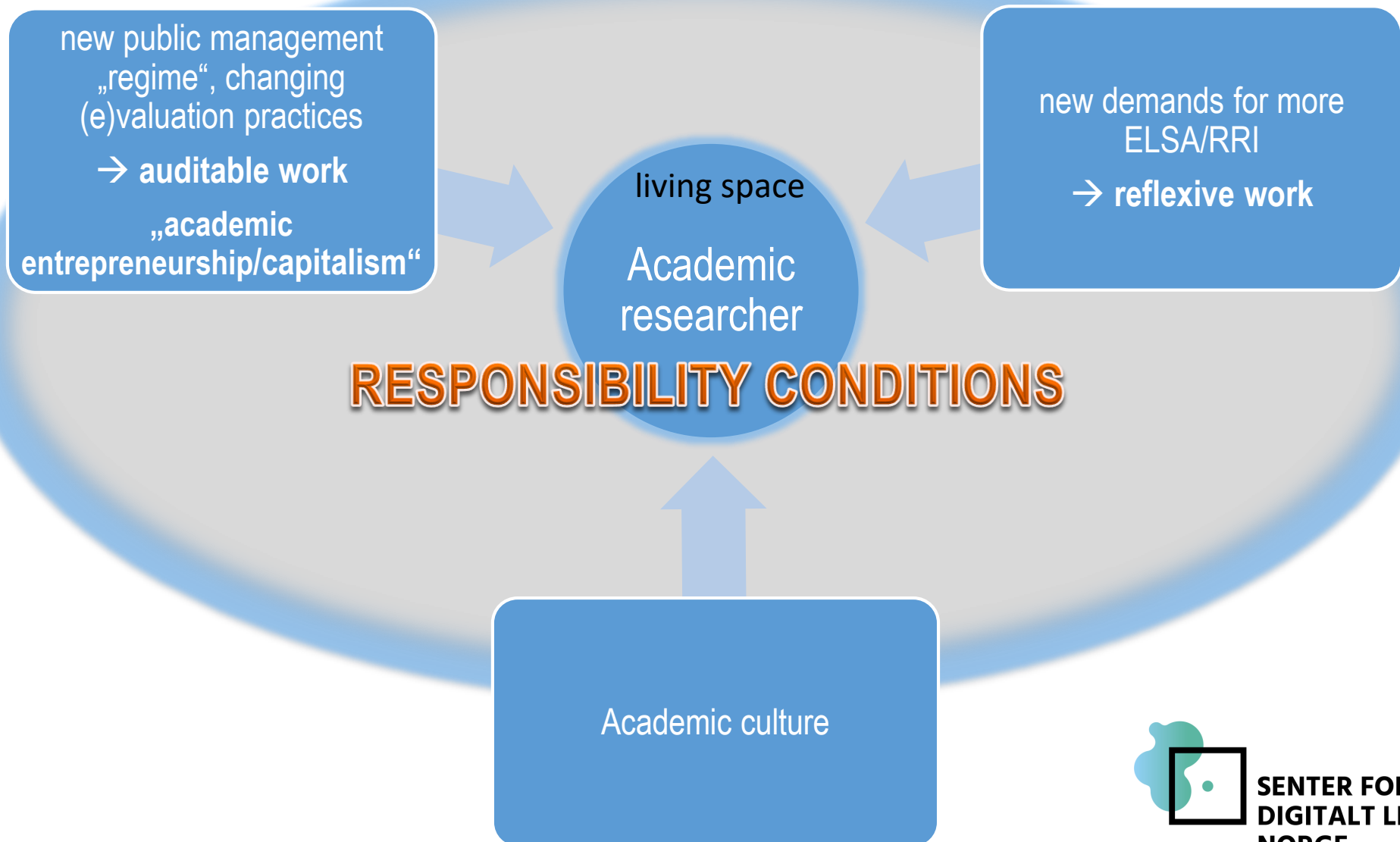


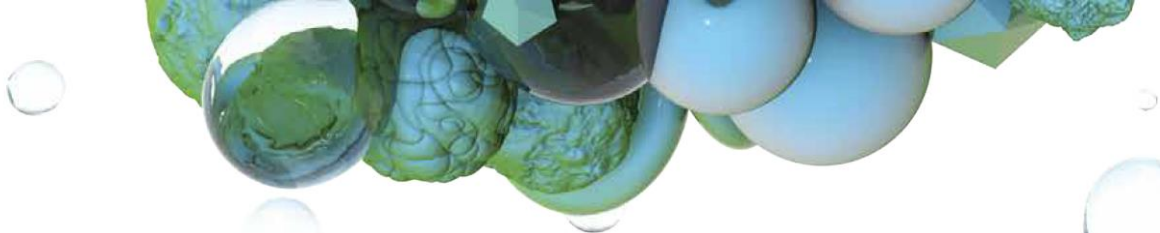
// responsibility in  
ground-breaking research //

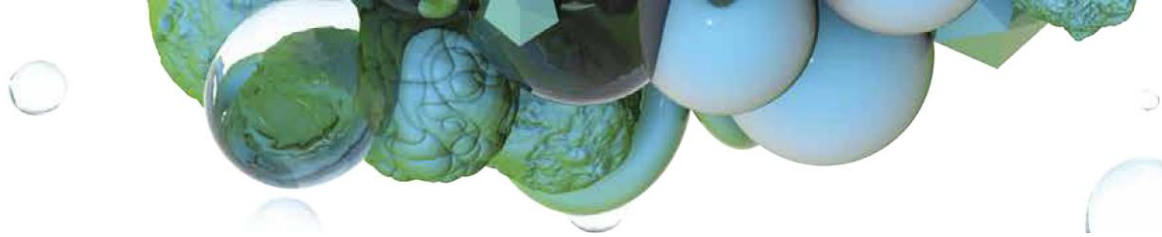
2) Forkaste RRI

3) «Talk the talk but  
don't walk the walk»

Felt 2015:







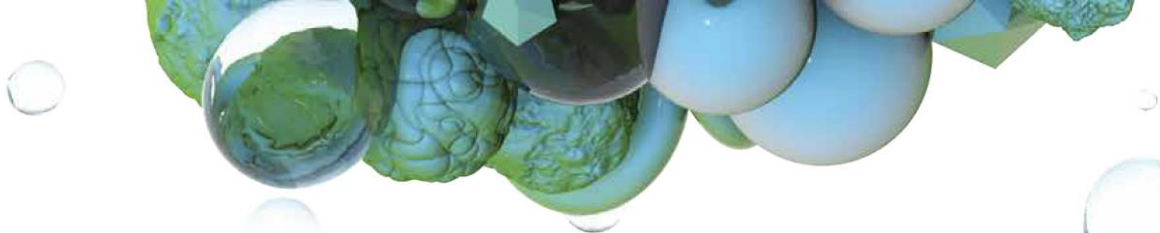
# RRI trenger ...

## ... et ansvarlig forskningssystem

- Ikke strømlinjeforme kun mot eksellens
- Ikke strømlinjeforme kun mot innovasjon

Nok tid (langfristige perspektiver), nok personalet, diversitet, og et bredt forståelse av 'impact'.

Eksempel: San Francisco Declaration for Research Assessment.



Takk!

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