

Need to ensure that everyone is on the same page. Many could follow it, it could build effect.

Shared data same format comparison applies to apples & oranges. Need to be flexible for emerging contaminants.

Proximity factors are important need to be explored uncertainty all steps of R.A. NI 2.3

Emerging Contaminants we will never finish IRT 14

Need feedback loops to citizens of public at all pts thru the RA process

We need to do a lot more work to help fit uncertainty into uncertainty analysis

Inspiration
Integrated Spatial Planning, land use and soil management Research Action

b. Risk assessment
- Annette Gatchett (EPA, US)

Clear Risk endpoints

Risk characterization

IRT 14 Harmonized methods for sampling, analyses and risk assessment of emerging contaminants in SSW

NI 1 Health risk assessment with uncertain inputs ✓

NI 1.3 Systematic and comprehensive risk assessments of combined risks (ecological, technological & economic)

NI 2.3 Understanding effects from diffuse contaminant sources? *Health*
cumulative contributions from many "small" sources? Effect of contaminant mixtures? Impact of contaminant sinks? ✓

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All Groups think this is important

Systematic way of addressing uncertainty

NI 1.3 NI 1

Better communication to present uncertainty to citizens & other stakeholders

What is the real risk speak in right language & level of understanding

What effort do you want to reach with the communication

Need more NI 2.3 New approach for health assessments for assessments & to understand the context

Need scientific evidence to support this for legislators & citizens this makes the case for

Need to communicate the steps & timeline & uncertainty

Multinational integration NI 2.3

More complex communication

How do we communicate uncertainty of how do we deal with it?

How do we manage it?

Empty orange sticky notes.

What is the effect/development of the future? What will be effect on soils? [e.g. self-driving cars]

policies for emerging problems / contaminants needed

resilience?

how can we understand and then use the drivers for more sustainable soil/land use/cities

going up & going down in quality
what does it mean?

contaminant transport

flows & stocks
increasing concentrations of (hazardous) substances

what is the goal
SDGs

could be health

bio chemical cycles need more research
- applied - on cycles connecting human activities

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- d. Strategies and policies for pollution management and remediation - Stephan Bartke (UBA, DE)
- IRT13 Urban Metabolism - Enhance efficient use of soil-sediment-water resources through a closing of urban material loops
- D2 Regulating Ecosystem Services
- D3 Urban / infrastructure land
- D7 Health and quality of life (living environment)
- LM 1 Governance, management mechanisms, instruments and policy
- LM 3 Land as a resource in urban areas (Sustainable urban land management)
- LM 4: Land as a resource in rural areas (Multifunctionality of rural areas)
- NI 3 Trade-off analysis & decision support



geotech. + phys. compaction

strive to understand what people want

where is values going!
more green & blue cities
tools to make policy based on ESS

Liability / Responsibility driving behaviour

Do we know what the citizens want?

Do (local) politicians really know what their citizens need?

stimulate / involve participation

Is it about more policy needed or about decision support?

what is the role of regulation for effective governance?

Cultural role: what impact have different European backgrounds?

set guidance
transform / transition

role of communication (understanding demands)

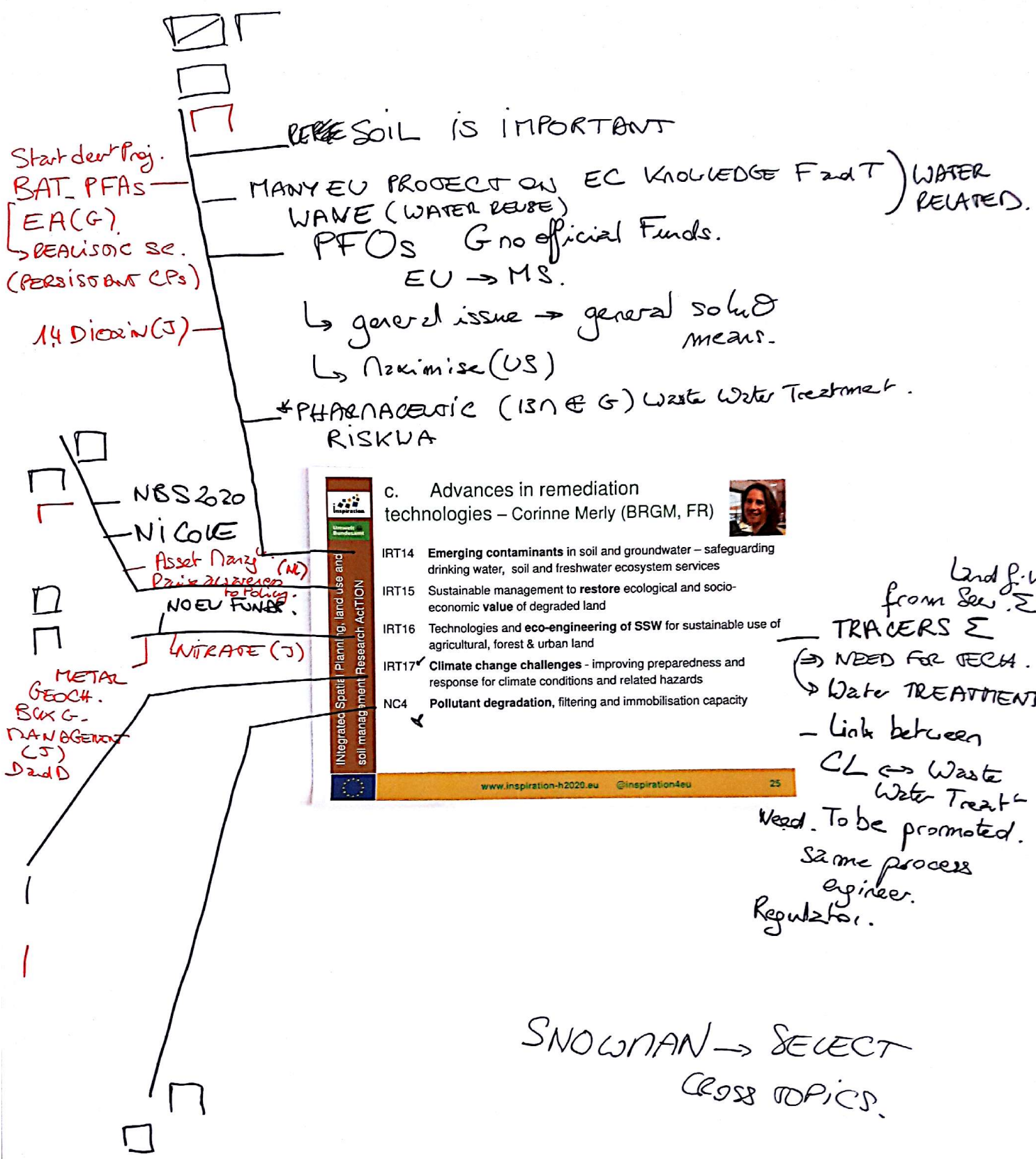
more sust. use of soil

redevelop den Lick (and in cities)
PPP
Sustaining inner city development
land use trade

health
-> point out personal impacts for citizens
Link to global problem

awareness raising
[water use for car washing / pesticides]

policy makers are citizens too!
Awareness raising needed!



c. Advances in remediation technologies – Corinne Merly (BRGM, FR)



IRT14 Emerging contaminants in soil and groundwater – safeguarding drinking water, soil and freshwater ecosystem services

IRT15 Sustainable management to restore ecological and socio-economic value of degraded land

IRT16 Technologies and eco-engineering of SSW for sustainable use of agricultural, forest & urban land

IRT17 Climate change challenges - improving preparedness and response for climate conditions and related hazards

NC4 Pollutant degradation, filtering and immobilisation capacity

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unexpected events → think how to cope
playmaker
pressure on land is driver/different in context

Consult

Reuse define

(and degradation)

The contract for should be met with criteria for sustainable procurement.

Industry

NGO

Knowledge broker

What are the restrictions how to model make a guide as a resource

Take future development into account → scenarios
connect land use decisions

land - space

What are the end goals for land use

national level - evidence - goals

Soil resource

soil as a sink! goals

important why? How?

soil reuse upgrade by process?



- e. Reuse & upgrading of land, water & sediment in a circular economy - Margot de Cleen (RWS, NL)
- IRT2 Recognizing the value of ecosystem services in land use decisions
- IRT5 Integrated scenarios for the Land-Soil-Water-Food system under societal pressures and challenges
- IRT6 Indicators of Soil-Sediment-Water-Energy system efficiency
- IRT8 Circular land management
- NC6 Geological resources
- D1 The 4 F's: Food, feed, fibre, (bio)fuel
- D3 Urban / infrastructure land
- D4 Water
- NI4 Science-Policy-Society Interface

LT prospective needed - how?

How to improve the quality by reuse?

Transition Energetic Society interface?

knowledge avoid irreversible land use forms

Policy framework Lacks/ not up to date

sustainable land use

also by good procurement awareness

multiple use

Judicial boundaries How to cope?

is there a level of 'high' (re)use and low (re)use

this is also can different

do you need the circular use based on ESS?

Stakeholders/beneficiaries

Cost-benefit analysis

What is needed? also concerns towards comparison on agricultural use

try to understand the economics behind land and land as a financial resource

a. Assessment and monitoring of soil, water and sediment quality
 Valérie Guerin (BRGM, FR) (13)

IRT 1	Harmonised, statistically robust soil assessment & monitoring	2/5	2/2	3/6
D 2	Map, assess, regulate ecosystem services	1/5	1/2	4/6
IRT 15	Restoring ecological & socio-economic value of degraded land	3/5	1/6	1/2
IRT 16	Innovative technologies & eco-engineering for on-site monitoring, soil quality & plant cover	2/5	1/6	1/2
NI 1.1	Net impact of changing SSW on human well-being & prosperity; effects of contaminants on organisms & ecosystem services	2/5	0/2	4/6

≠ need : diffuse pollution
point source

→ need to check minimum data needed
 → model / fact sheet *
 include in monitoring

important to define the right indicators to follow
 → bioaccessibility. ↑
 need tools

Create additional value from data, which would pay off the value of raw data to data owners

presentation of results
 (same order)

Open data

- public data
- value of data - share?

Who fund DB?

- policy makers → public / gov region
- taxes
- Co-funding users. Consortium.

right parameters

Good data:

- which data needed to make decision? → right indicators
- what for? what scale? frequency? → variability
- dependant on
 - around ind. site (eg cross pollution) → enjeu AEP
 - scientific community
 - question (operational)

Data: Public?
 Publicity?

Careful attention on how using data

- correlations
- proper way to data

Right indicators

in some countries must be paid by SME companies.
 (or use only existing tools → given to emerging gov tools)

Monitoring technologies:

- SRI
- University

education of Service Provider
 net working
 Partnership transfer
 Spin. OFF - crowd funding

to increase to help getting
 the spin. off money

Funding: Fund at EU level and in some countries at National & Regional level.

Involve public in monitoring - lots of data - validity

Define quality indicators

Collect not only chemical properties, look for other determinants of quality

Innovative Ecosystem health monitoring
 Methods for emerging contaminants

users + water companies
 Top down responsibility
 water = SOC challenge
 TAX paper
 National gov + Regional

Secure supply = Quantity
 F
 F

Secure water pipes
 cleaning of pipes
 waste water
 Reused

How improve natural isolation
 Barrier
 spatial planning in the soil
 sealing, storage for use change
 subsurface structures
 surface
 + SW interaction water man
 Regulation for Peak
 Oxidation

New uses =
 other demands
 urban agriculture
 solar fields

movement of water +
 contaminants
 in vadose zone
 air pollution
 percolation rate
 (African project)

Reducing impact for
 surroundings (people)

Planning +
 future needs
 + infrastructure

Legacy
 mining
 relation
 with land use

Future needs
 IRT energy transition

who is owner
 restrictions + legislation
 (ATES) physical pollution
 effects

Land under
 licence → part
 of € / \$ → research
 Frameworks
 energy companies
 Cost + Ben. energy consumers
 instead of tax
 "incentives"

new technologies + policies
 call in research
 shale gas
 (limit to transboundary
 collaboration due to geo diff)

f. Sustainable use & spatial planning of the subsurface
 Spatial Planning
 - Linda Maring (Deltares, NL)

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1 IRT3	Integrated tools for a holistic assessment of agricultural and forest land use + URBAN	
2 IRT4	Bio-Economy - unleashing potential while sustaining soils	
3 IRT9	Policy to effectively reduce land consumption by settlements	
4 NC1	Quantity, quality & health of soils, soil C, greenhouse gases	
5 NC3	Water, water cycle	
6 NC5	Prevention of erosion and mudslides	
7 NC6	Geological resources	
8 D5	Geological (and fossil) subsurface resources	
9 D6	Natural hazard prevention and resilience	

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Association
 Env groups → vision
 Governing Research
 costs → change
 new field knowledge
 F
 F
 - Envir. agencies funders
 - national agencies funders
 - transboundary (European)
 - communication! ex-FR
 - make knowledge understandable for the right target groups
 How to use tools
 Right kind of user → experts
 Right kind of use
 LCA's
 network of actors
 + collaboration with policy maker
 → system tools in a network
 interactions
 "water protected" project