

OUTSIDE THE BOX THINKING FOR AN INNOVATIVE RESEARCH AGENDA

Paul Nathanail (University of Nottingham)

Co-Authors from INSPIRATION consortium

Why Motivation and problem statement

Soil is a finite threatened resource. Land is limited and once built on is hard to return to soft uses. Spatial planning has a key role to play in how our soils are protected and our land is managed.

European citizens are increasingly realising that they both need and want: Net land degradation neutrality; Zero waste; Circular land economy; Protected soils, waters & sediments; Biodiversity and Clean air.

A bottom up approach has led to the development of a strategic research agenda to improve the way we plan, manage and use our land and the soil-sediment-water system.

What Approach, results and key messages

Business as usual will at best slow down the rate of land consumption and soil loss. Delaying the inevitable is not compatible with the principle of sustainable development nor would it contribute to achieving the United Nations sustainable development goals (SDG). The SDG consider ab initio how to mobilize of financial resources, how to build capacity, ways of transferring environmentally sound technologies and ultimately tackling the societal implications of climate change.

Research and innovation needs have been identified in the way we understand the supply of natural resources and ecosystem services; how we call on, or demand from, them; how we manage land use and how we measure and evaluate the impact of such use. In addition to these thematic research and innovation needs, cross cutting activities were also identified.

Such activities need to result in a step change in policy and practice and to do so relatively quickly.

Key Conclusion and take home message

Co-funding is essential if the identified research and innovation is to take place and do so at a pace that will allow it to have the impact it needs within the next 10-15 years. INSPIRATION partners remain committed to helping Europe's funders, end users and researchers deliver on the bottom-up inspired strategic research agenda.

More Further reading

<http://www.inspiration-h2020.eu/>



Outside the box thinking for an innovative research agenda

Paul Nathanail, University of Nottingham



Integrated Spatial Planning, land use and soil management Research ActTION

Topical knowledge gaps and research needs of Europeans towards sustainability in spatial planning, land use and soil management: The INSPIRATION Strategic Research Agenda



Outside the box thinking for an innovative research agenda

On behalf of INSPIRATION consortium

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The University of Nottingham

UNITED KINGDOM • CHINA • MALAYSIA



World soil day is coming... is here!



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This Land Is Your Land Woody Guthrie

As I went walking I saw a sign there
And on the sign it said "No
Trespassing."
But on the other side it didn't say
nothing,
That side



d me.

In the shadow of the steeple I saw
my people,
By the relief office I seen my
people;
As they stood there hungry, I stood
there asking
Is this land made for you and me?
Nobody living can ever stop me,
As I go walking that freedom
highway;
Nobody living can ever make me
turn back
**This land was made for you and
me.**



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The box...

- *What* is the box?
- *Where* is it?
- *Who* is in it?
- *When* was it finished?
- *Why* was it made?
- *How* can we work outside it?

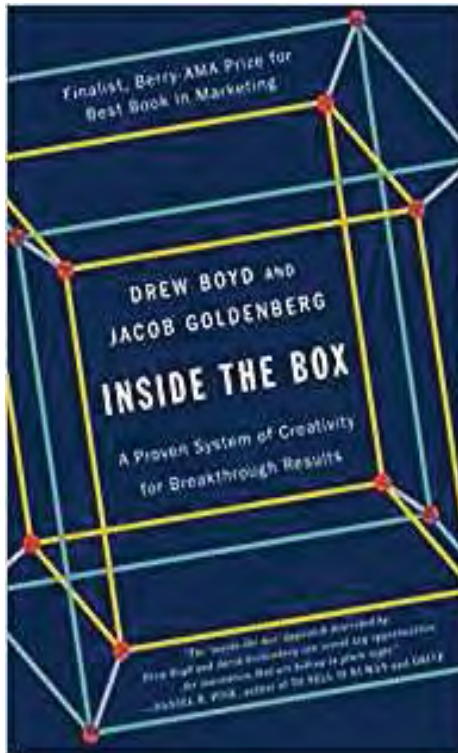


The box...

- | | |
|--------------------------------------|---------------------------|
| ■ <i>What</i> is the box? | Silos |
| ■ <i>Where</i> is it? | Take a look around you |
| ■ <i>Who</i> is in it? | We are, by default |
| ■ <i>When</i> was it finished? | Boiling a frog |
| ■ <i>Why</i> was it made? | Mind limits |
| ■ <i>How</i> can we work outside it? | Mind blowing |



Thinking inside the box



new ideas vs problem solving

Systematic Inventive Thinking Five Thinking Tools

- Subtraction
- Multiplication
- Division
- Task Unification
- Attribute Dependency

What do we want?

- Net neutrality
- Zero waste
- Circular land economy
- Protected soils, waters & sediments
- Biodiversity
- Clean air

What do Europeans, really, really want?

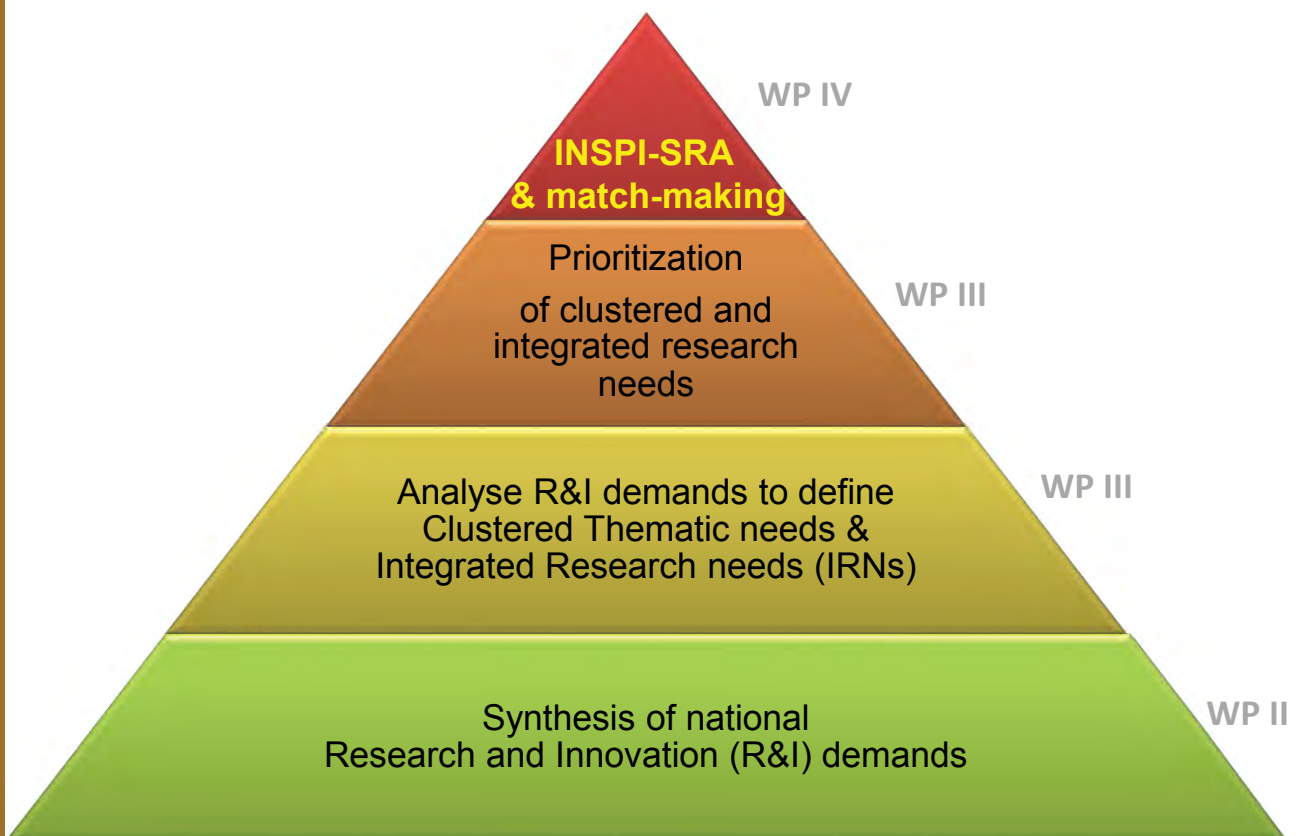
- Peace & security (Bosnia)
- Wholesome Food & water (Slovenia)
- Health (EHIC cards)
- Education (Marie Curie; Erasmus; Tempus)
- Pleasant environment (my university's campus)
- Fast wifi and cheap mobile access (no roaming charges)
- A better future for their children (or nephews nieces...)
- **Hope! (Pandora's box!)**

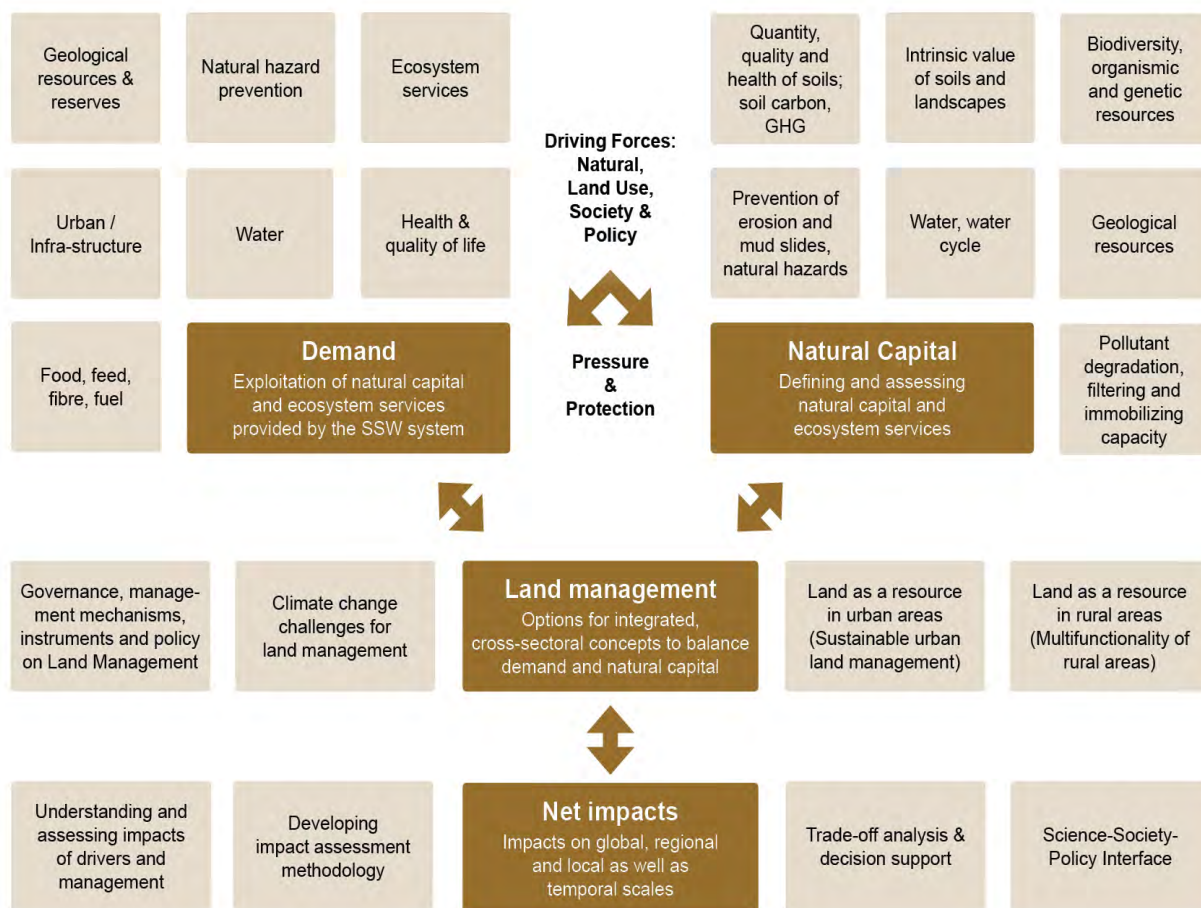


Spice Girls, London 2012



Bottom-up inspiration





Integrating research Needs (IRNs)

From information to implementation

IRN-1: Integrated Environmental Assessment and Soil Monitoring for Europe

IRN-2: Recognizing the value of ecosystem service in agricultural land use

IRN-3: From indicators to implementation: Integrated tools for a holistic impact and land use assessment

FFFF: demand, potentials and risks

IRN-4: Bio-Economy – unleashing the potentials while sustaining soils

IRN-5: Integrated scenarios for the Soil-Water-Food nexus under societal challenges

IRN-6: Assessing the efficiency of the Soil-Sediment-Water nexus of resources

IRN-7: Maintaining soil fertility by organic farming to sustain food security

Challenge: Integrated urban management

IRN-8: Circular land management

IRN-9: Developing effective policies to combat urban sprawl

IRN-10: Facilitating the implementation of urban governance through stakeholder participation

IRN-11: Integrated management of soils in urban areas

IRN-12: Environmentally friendly and socially sensitive urban development

IRN-13: Urban Metabolism – Enhance resource efficiency through a closing of urban material loops

Disturbed landscapes

IRN-14: 'Emerging contaminants' in soil and groundwater

IRN-15: Sustainable management and valorization of degraded land

IRN-16: Innovative technologies and eco-engineering 4.0: Challenges for a sustainable use of rural and urban landscapes and the SSW system

Climate change challenges

IRN-17: Climate change challenges - improving preparedness, response for climate conditions and related hazards

The 17 United Nations Sustainable Development Goals (SDGs)



The World's To-Do List by 2030

MDG vs SDG millennium vs sustainable

- Broader
- Deeper
- Global
- Implementation considered up front
 - mobilization of financial resources
 - capacity–building
 - transfer of environmentally sound technologies
 - Tacking climate change is key

The Global goals...

1. need you-us
2. will change how we do business
3. are one for all and all for one
4. will address climate change
5. will eradicate extreme poverty by 2030
6. will leave no one behind
7. are hands-on: planned, costed, buy-in
8. are "Global"
9. are the people's goals
10. are the world's ultimate to-do list for the next 15 years

UN Sustainable Development Goals (SDG): INSPIRATION



More on this tomorrow!

| Sustainable Development Goal | No poverty | Zero hunger | Good health | Quality Education | Gender equality | Clean water & sanitation | Affordable and clean energy | Decent work and economic growth | Industry, innovation and infrastructure | Reduced inequalities | Sustainable cities and communities | Responsible consumption | Climate action | Life below water | Life on land | Peace and justice | Partnership for the goals |
|------------------------------|------------|-------------|-------------|-------------------|-----------------|--------------------------|-----------------------------|---------------------------------|---|----------------------|------------------------------------|-------------------------|----------------|------------------|--------------|-------------------|---------------------------|
| SDG | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| Soil | ✓ | ✓ | ✓ | ✗ | ✗ | ✓ | ✓ | ✓ | ✓ | ✗ | ✓✓ | ✓ | ✓✓ | ✗ | ✓✓ | ✗ | ✗ |
| Sedi-ment | ✗ | ✗ | ✗ | ✗ | ✗ | ✓ | ✗ | ✗ | ✓ | ✗ | ✓ | ✓ | ✓✓ | ✓✓ | ✓ | ✗ | ✗ |
| Water | ✓ | ✓ | ✓ | ✓ | ✓ | ✓✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓✓ | ✓✓ | ✓ | ✗ | ✗ |
| SSW System | | | | | | ✓ | | | ✓ | | ✓ | ✓ | ✓✓ | | ✓ | | |

Integrate soil ma

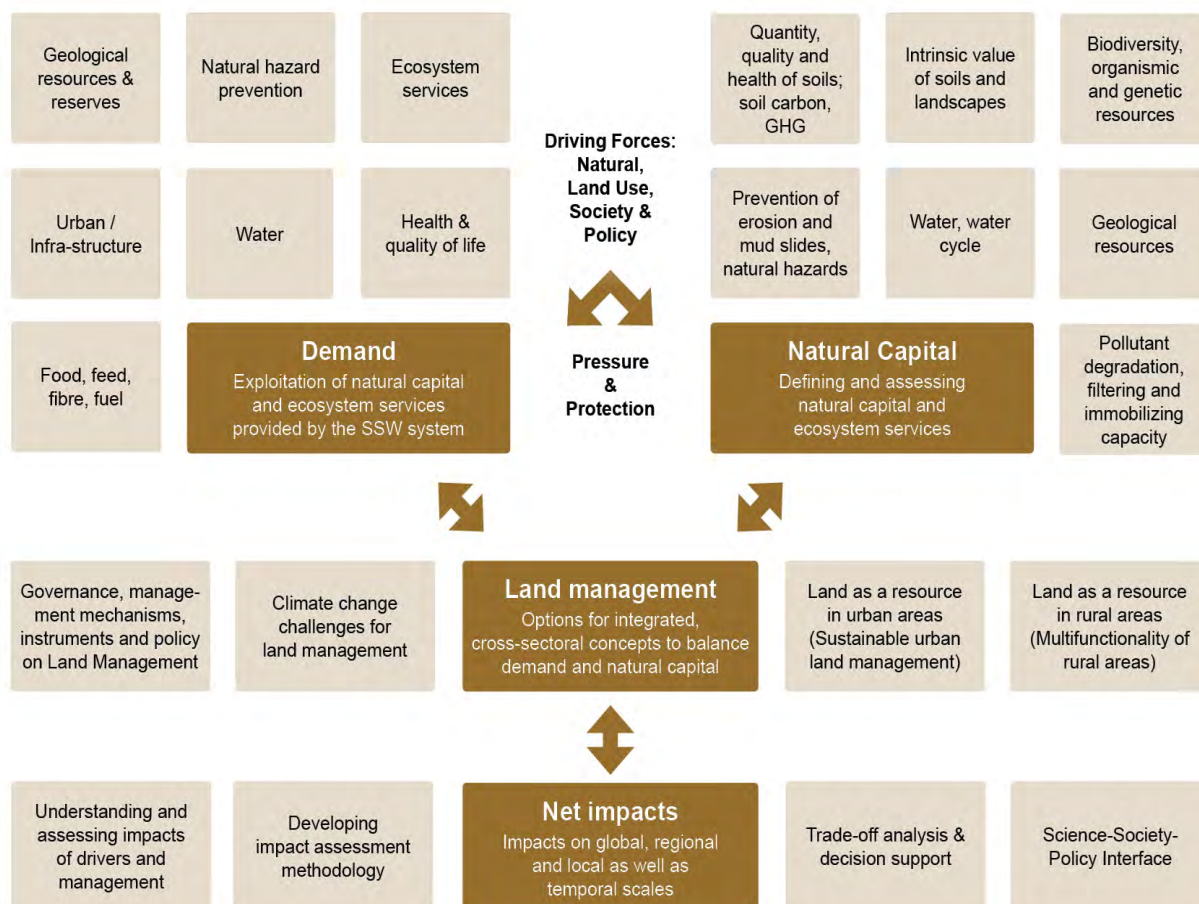


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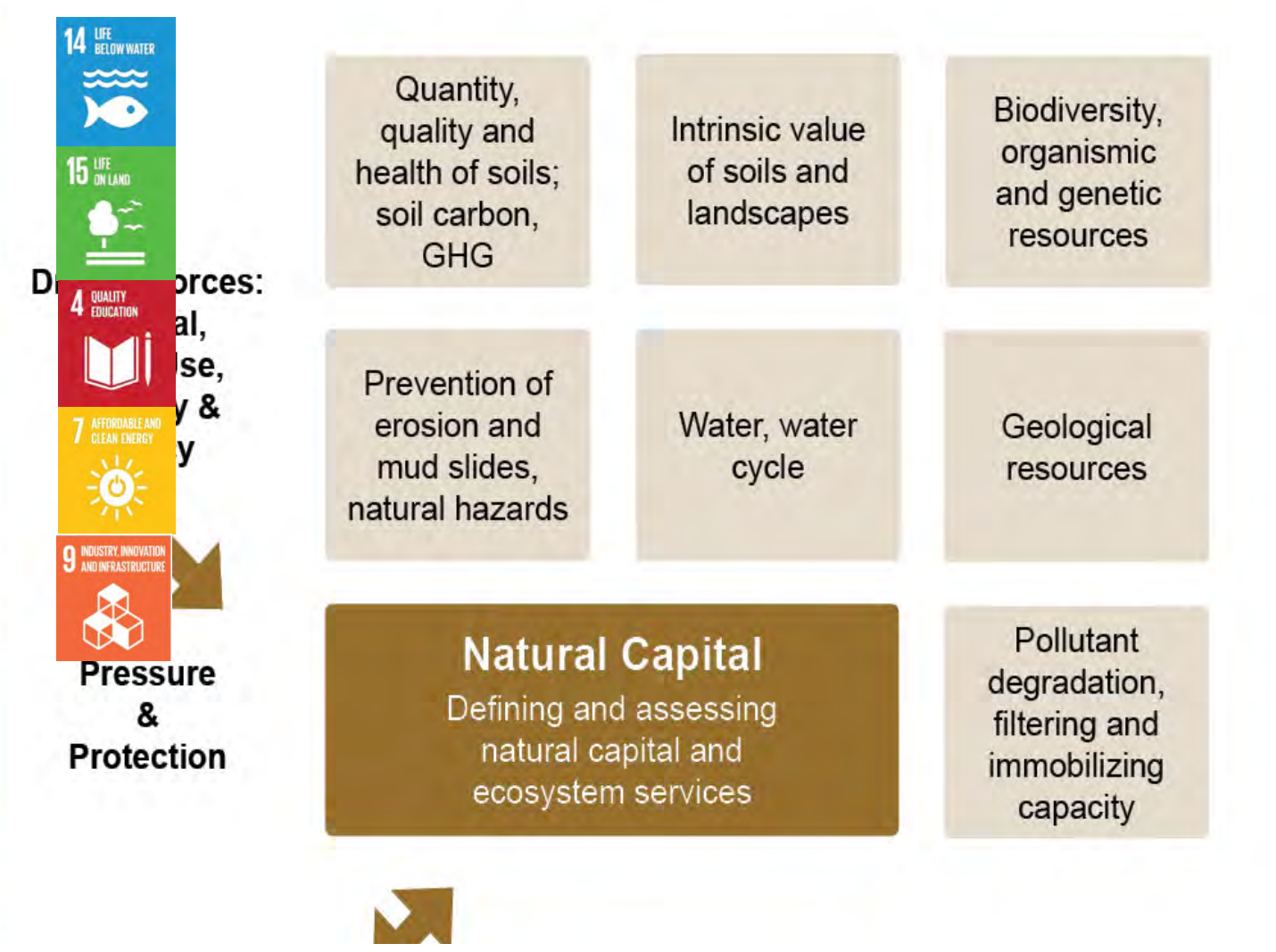
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provided by the SSW system



Governance, management mechanisms, instruments and policy on Land Management

Climate change challenges for land management

Land management
Options for integrated cross-sectoral concepts to balance demand and natural capital



Understanding and assessing impacts of drivers and management

Developing impact assessment methodology

Net impacts
Impacts on global, regional and local as well as temporal scales

ecosystem services

immobilizing capacity



Land management
Options for integrated, cross-sectoral concepts to balance demand and natural capital

Land as a resource in urban areas
(Sustainable urban land management)

Land as a resource in rural areas
(Multifunctionality of rural areas)



Net impacts
Impacts on global, regional and local as well as temporal scales

Trade-off analysis & decision support

Science-Society-Policy Interface

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Climate change challenges

IRN-17: Climate change challenges - improving preparedness, response for climate conditions and related hazards

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If you don't know where you are going, how will you know you have got there?



SUSTAINABLE DEVELOPMENT KNOWLEDGE PLATFORM

HOME HIGH-LEVEL POLITICAL FORUM STATES SIDS SDGS TOPICS UN SYSTEM STAKEHOLDER ENGAGEMENT PARTNERSHIPS RESOURCES ABOUT

PROGRESS & INFO (2017) PROGRESS & INFO (2016) TARGETS & INDICATORS

The global indicator framework was developed by the Inter-Agency and Expert Group on SDG Indicators (IAEG-SDGs) and agreed to, as a practical starting point at the 47th session of the UN Statistical Commission held in March 2016. The report of the Commission, which included the global indicator framework, was then taken note of by ECOSOC at its 70th session in June 2016. [More information.](#)

| TARGETS | INDICATORS |
|--|---|
| 6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all | 6.1.1 Proportion of population using safely managed drinking water services |
| 6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations | 6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water |

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TARGETS

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INDICATORS

6.1.1 Proportion of population using safely managed drinking water services

6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water

17 >> 169 >> 300+

Funding models

- International funding
- Bilateral
- EU
 - Fwk
 - ERANets
 - COST
 - JPI
 - Article 185
- National Research foundations/ councils
- Public/ Private (eg Innovate UK)
- Third sector
- Crowd funding

Woodie Guthrie was wrong



Brand new state!
Brand new state, gonna treat you great!
Gonna give you barley, carrots and
pertaters
Pasture fer the cattle
Spinach and termayters!
Flowers on the prairie where the June
bugs zoom
Plen'y of air and plen'y of room
Plen'y of room to swing a rope!
Plen'y of heart and plen'y of hope

Oklahoma, where the wind comes
sweepin' down the plain
And the wavin' wheat can sure smell
sweet
When the wind comes right behind the
rain
Oklahoma

Ev'ry night my honey lamb and I
Sit alone and talk and watch a hawk
Makin' lazy circles in the sky
We know we belong to the land
And the land we belong to is grand!
And when we say
Yeeow! Ayipioeeay!
We're only sayin'
You're doin' fine
Oklahoma!
Oklahoma O.K





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INSPIRATION Research Agenda

