SCREEN
Synergic CirculaR Economy across European regioNs

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No730313

Identifying potential cross-regional synergies in Circular Economy

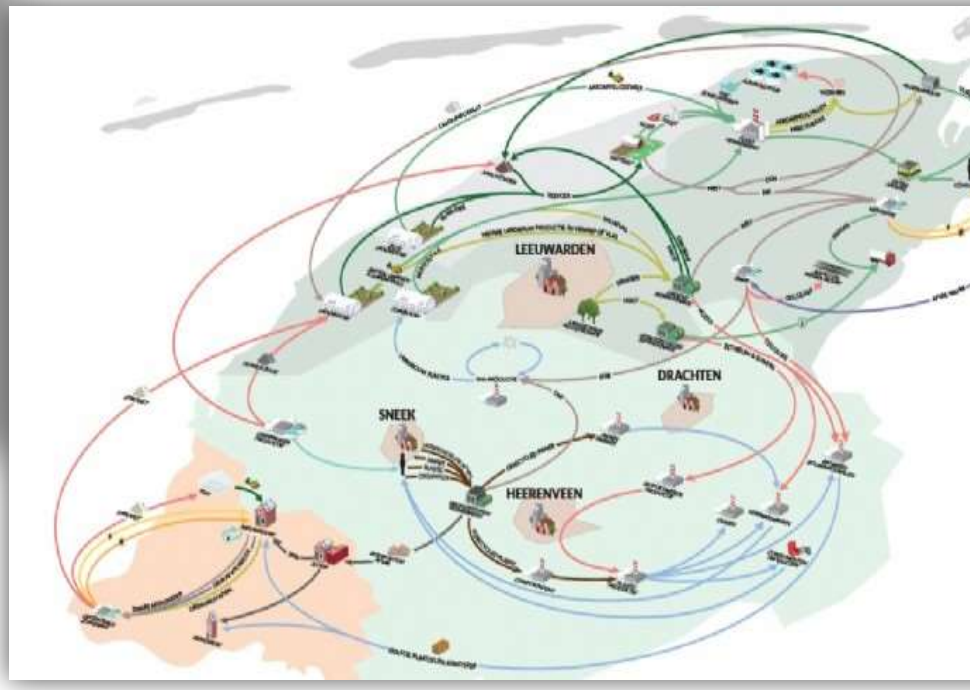
Applied approach and results so far

Ir. B.C. (Bart) Volkers, on behalf of SCREEN-partner
Province of Fryslân

Grid for potential synergies

Requirements & criteria:

- Smart Specialization – Fixed
- Regional capabilities – Fixed
- Matching criteria:
  - Capabilities
  - Emerging ideas



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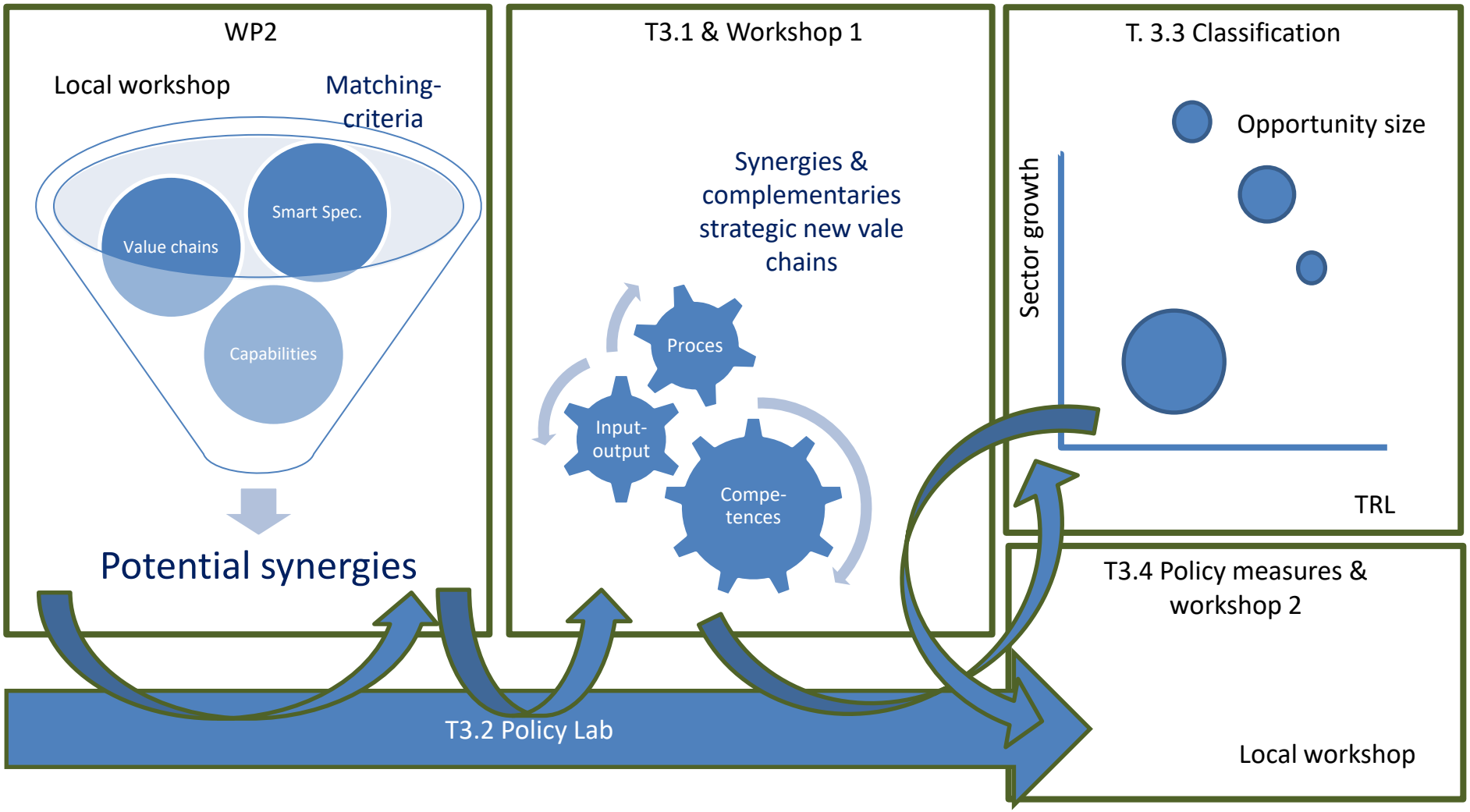
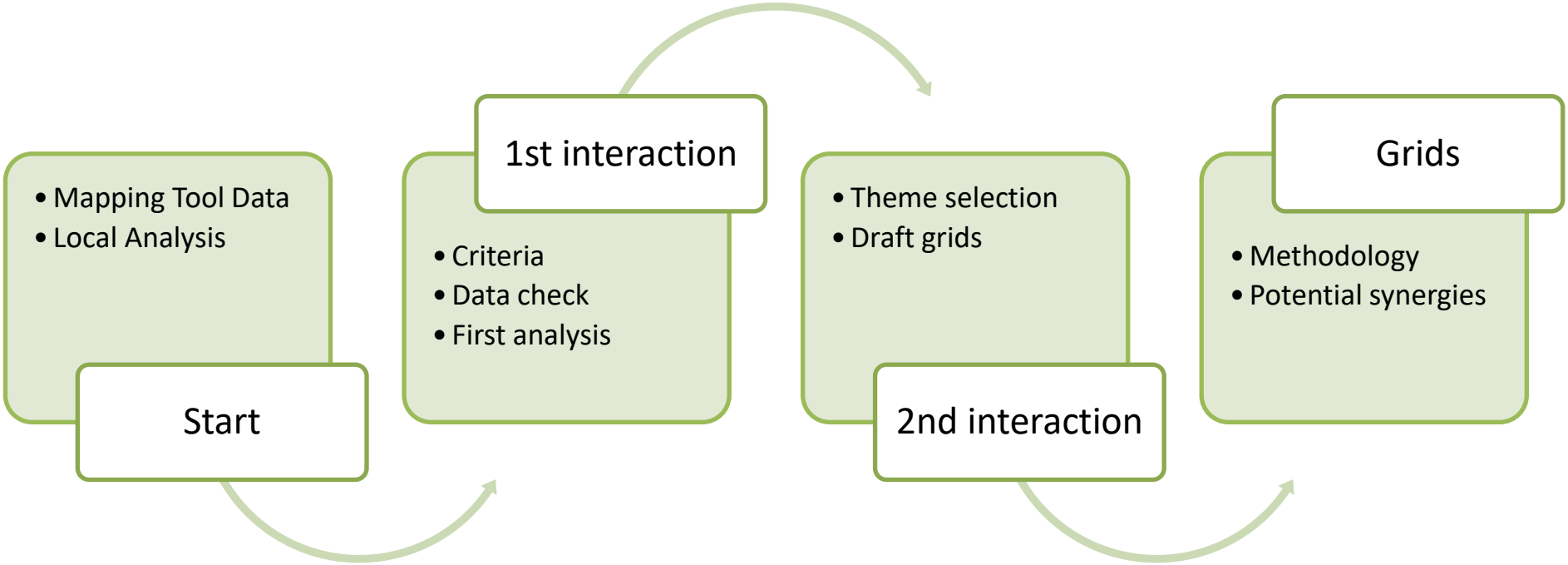
SCREEN analysis



From data to grid(s)



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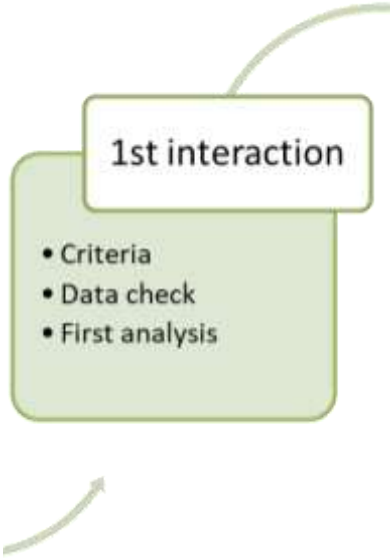

Matching criteria & requirements:

- ✓ Requirement: Aligned/Supported by regions RIS3
- ✓ Requirement: Relation to existing or emerging sectors
- ✓ Criterium: Support by regions capabilities
- ✓ Criterium: Support by regions companies/available technologies
- ✓ Criterium: Availability of emerging ideas

Data check:

- ✓ Complete & applicable
- ✓ RIS3 alignment – S3-platform
- ✓ Focus sectors
- ✓ Interpretation

First analysis:

- ✓ Semi-kwantitative analysis
- ✓ Emerging ideas as guiding principle
- ✓ Interaction necessary

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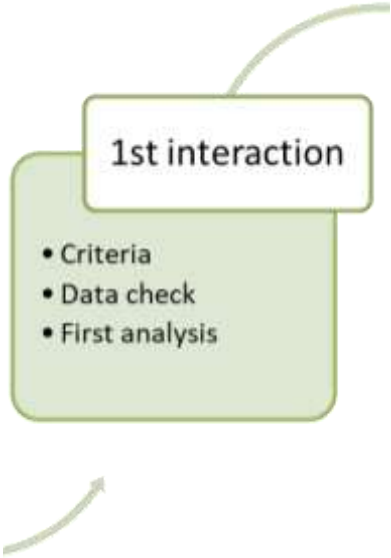

1st interaction:

Prioritize:

- ✓ Focus sectors: max. 2
- ✓ RIS themes: max. 2

Selection:

- ✓ Comfort in stakeholder involvement
- ✓ Potential synergy for at least 2 regions
- ✓ Synergy should be carried by ‘champions’

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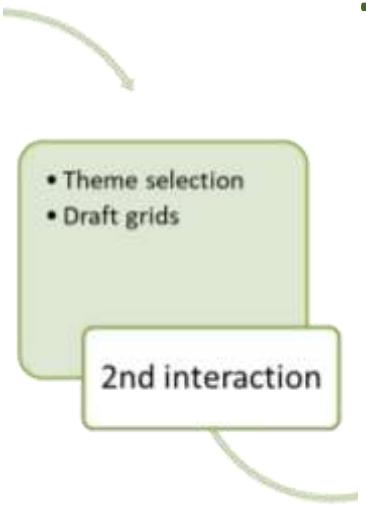
Theme selection results



Theme	Regions	
Agriculture & food	Navarra Limburg Crete	Scotland Centro Portugal Fryslân Lazio Łódzkie
(Smart) Packaging	Limburg Crete Centro Portugal	Fryslân Navarra Ile de France
(Resources from) water and wastewater	Fryslân Navarra Tampere Lombardy	Crete Limburg Łódzkie Scotland
Biobased materials & biotechnology	Crete Lombardy Fryslân Scotland	Tampere Navarra Flanders Lazio Łódzkie
Manufacturing and re-manufacturing	Navarra Lombardy	Tampere
(Bio)Waste management	Navarra Tampere Lombardy	Crete Łódzkie
Construction	Tampere	

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Potential Synergies in (resources from) water & wastewater

Description
Resource recovey from water and wastewater is aiming at:
1) recovering the valuable organic and inorganics from abstracted ground- and surface water, industrial process water and waste water contain valuable resources;
2) recovering energy (heat and biogas) from wastewater and domestic used water;
3) saving water, harvesting & using rainwater, water recycling.

Important sectors associated to these synergies are waterauthorities, animal and food production (primary agrofood sectors) as well as food & beverage manufacturing, wood processing industry, waste collection and also construction of buildings/urban areas.

Emerging Ideas
Resource recovery from wastewater (energy, nutrients, cellulose, bioplastics, neo-alginate)

Water in smart & circular cities

Rainwater harvesting and use in construction and agrofood sector

Industrial water separation and reuse

Concentrating milk at the farm

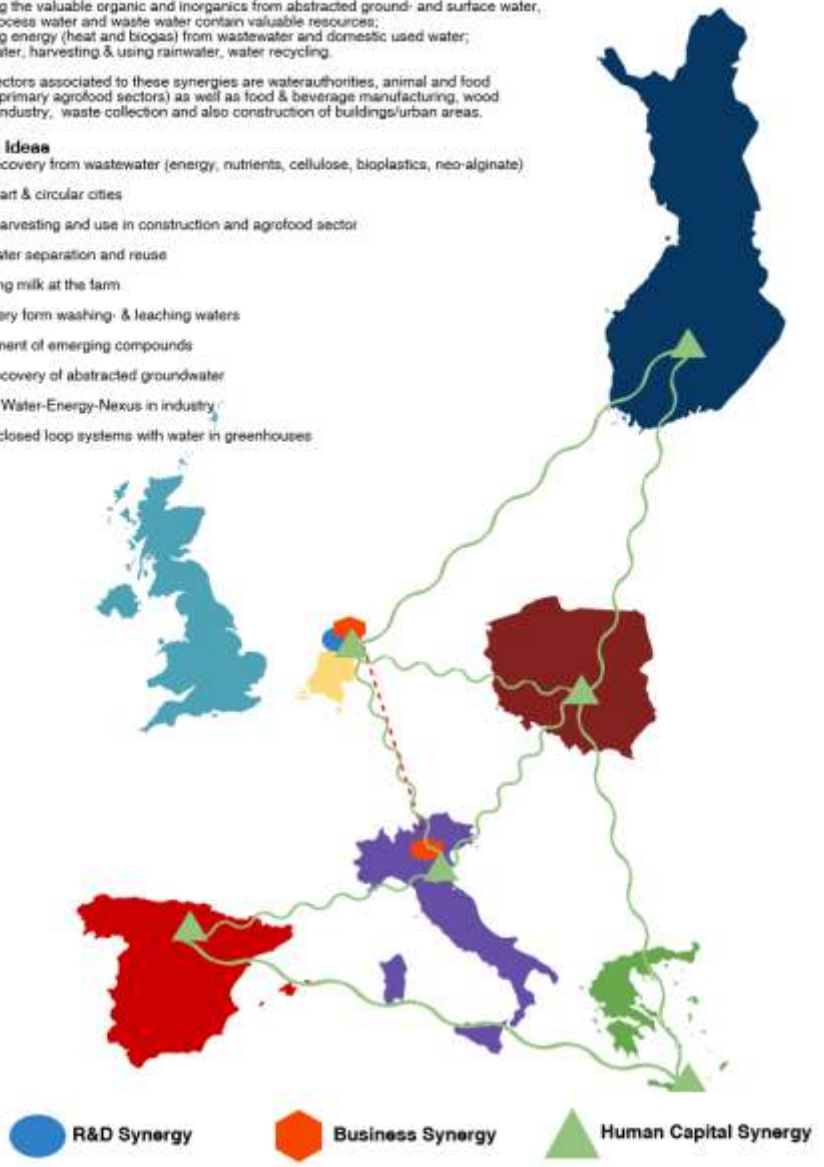
Metal recovery form washing- & leaching waters

Water treatment of emerging compounds

Resource recovery of abstracted groundwater

Solutions in Water-Energy-Nexus in industry

Creation of closed loop systems with water in greenhouses



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Potential Synergies in (Resources from) water and wastewater Blind Spots

The regions presented in this Grid all have issues and ideas in relation to (resources from) water and wastewater. However, the regions may need support from other regions on the field of R&D, business or human capital (as indicated by the three colors)

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Potential synergies in Agriculture & food

Description

Organic waste in agrifood production, processing and consumption needs to be prevented/reduced and what remains needs to be collected for other use (resource for energy, packaging, animal feed, etc.)

Biotechnology can play an important role for increasing yield and preservation. And for recovering resources, applying biorefinery on agrifood products and producing biobased chamicals.

Limited water resources make it necessary to invest in water efficiency/recovery measures, and rainwater harvesting technologies.
Water technology is enabling technology for closed loop systems and environmental emission reduction.

Emerging Ideas

Reuse of waste materials from agriculture and food transformation industry

Application of biotechnology to improve yield and preservation

Biodegradable / circular packaging for Agrifood distribution

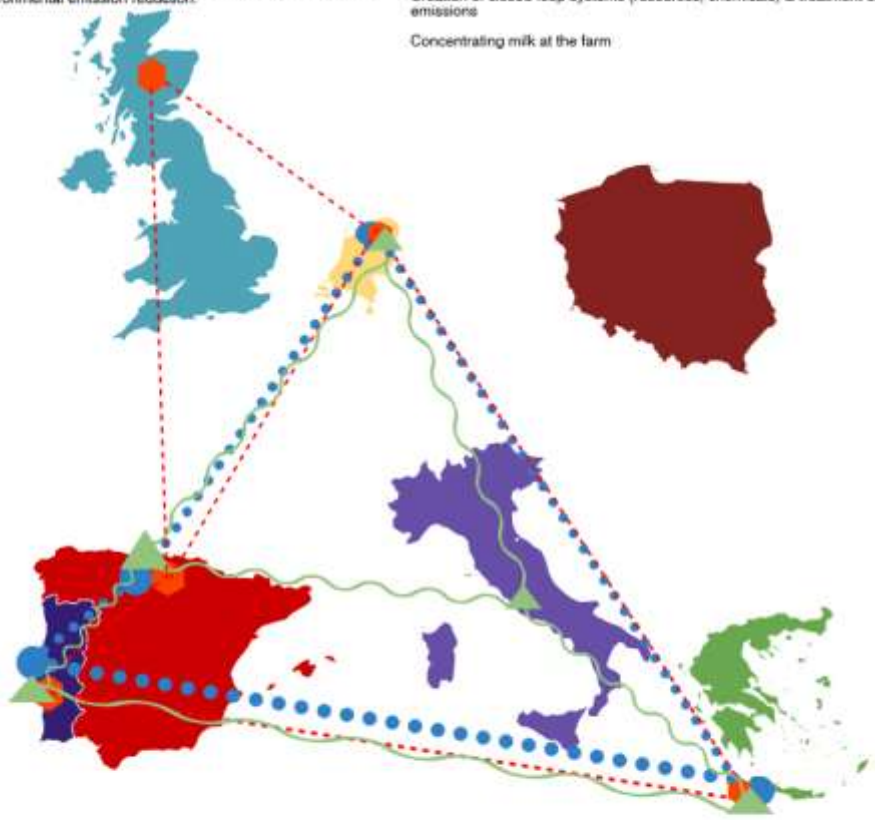
From organic foodwaste to feed for animal breeding

Use of organic waste for energy production

Water efficiency and water harvesting solutions

Creation of closed-loop systems (resources, chemicals) & treatment of emissions

Concentrating milk at the farm



R&D Synergy Business Synergy Human Capital Synergy

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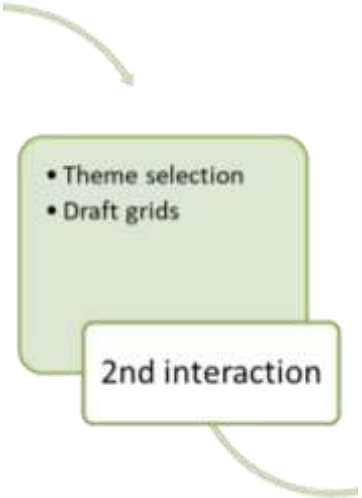

Draft grids

Description: Scope / framework

Regions: Interested regions

Emerging ideas: Concrete ideas for development cooperation. Both functional and collaborative

Synergies:

- ✓ R&D
- ✓ Education
- ✓ Business

Types of potential synergies:

- Synergies: cooperation on strengths
- Blind spots: cooperation on needs

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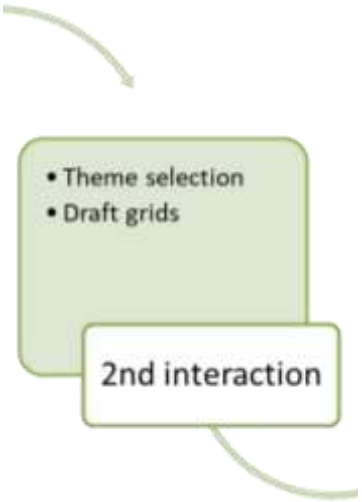

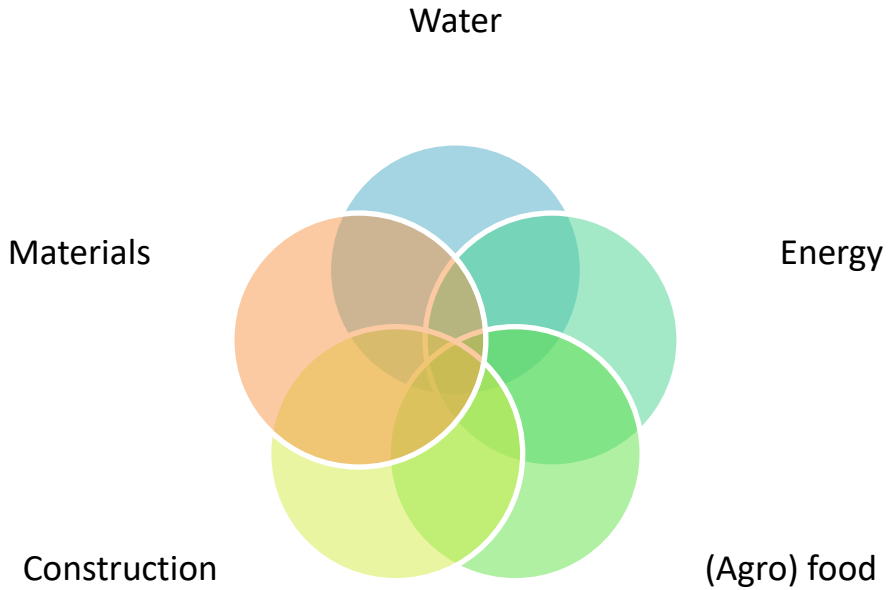

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- Theme selection
- Draft grids

2nd interaction

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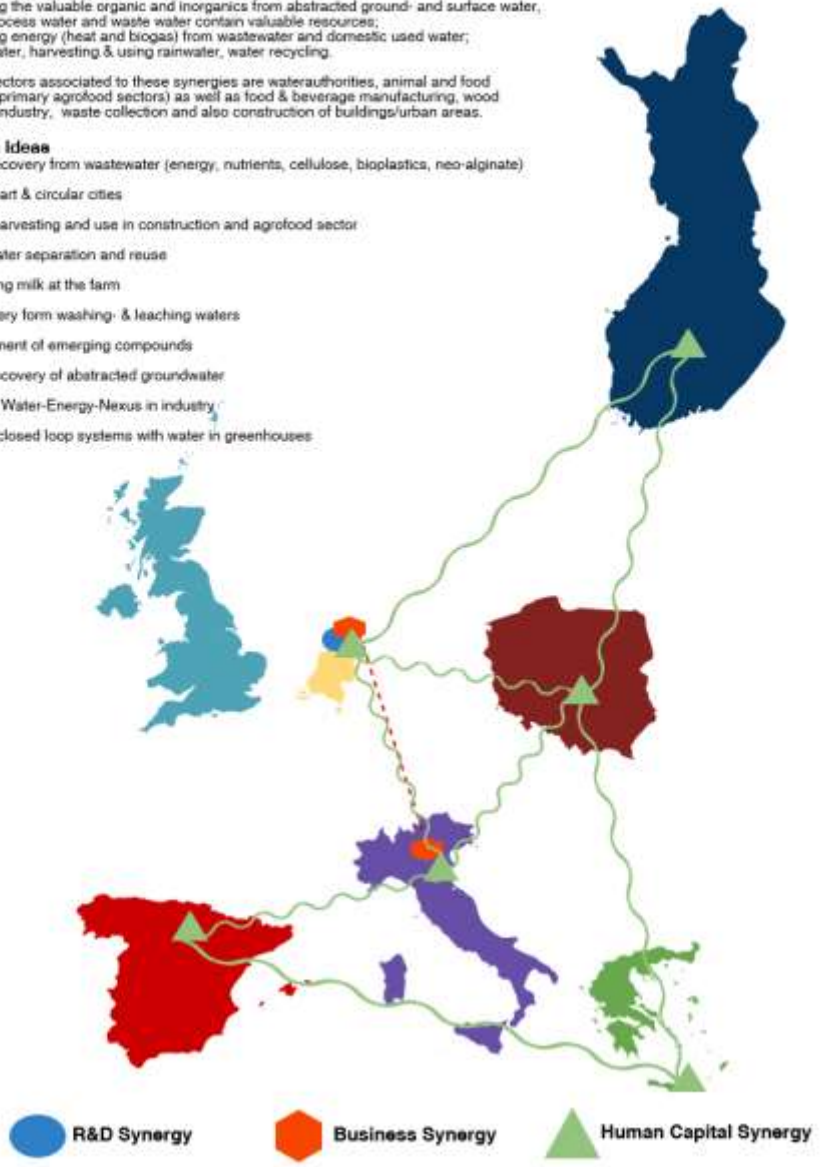

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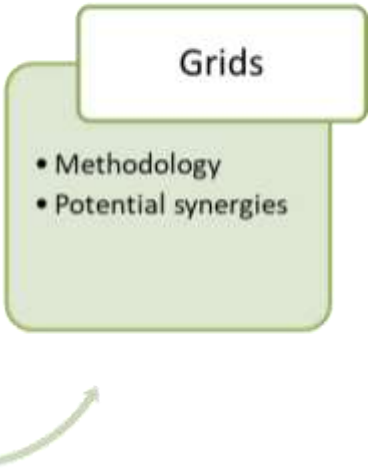

Observations

Granularity level:

- ✓ Data input – overall level of detail, granularity, etc.
- ✓ Quality (and quantity) of interaction
  - Local
  - Cross-regional
- ✓ Thematic level with (emerging) ideas most detailed level

Mapping of information shows (Direction):

- ✓ Tool for relevant data & stakeholder
- ✓ Potentials for regions
- ✓ Interesting capabilities
- ✓ Cross-regional possibilities
- ✓ Emerging ideas

Interaction shows (Effort):

- ✓ Understanding & Trust
- ✓ Inspiration & Energy
- ✓ Concrete (emerging) ideas

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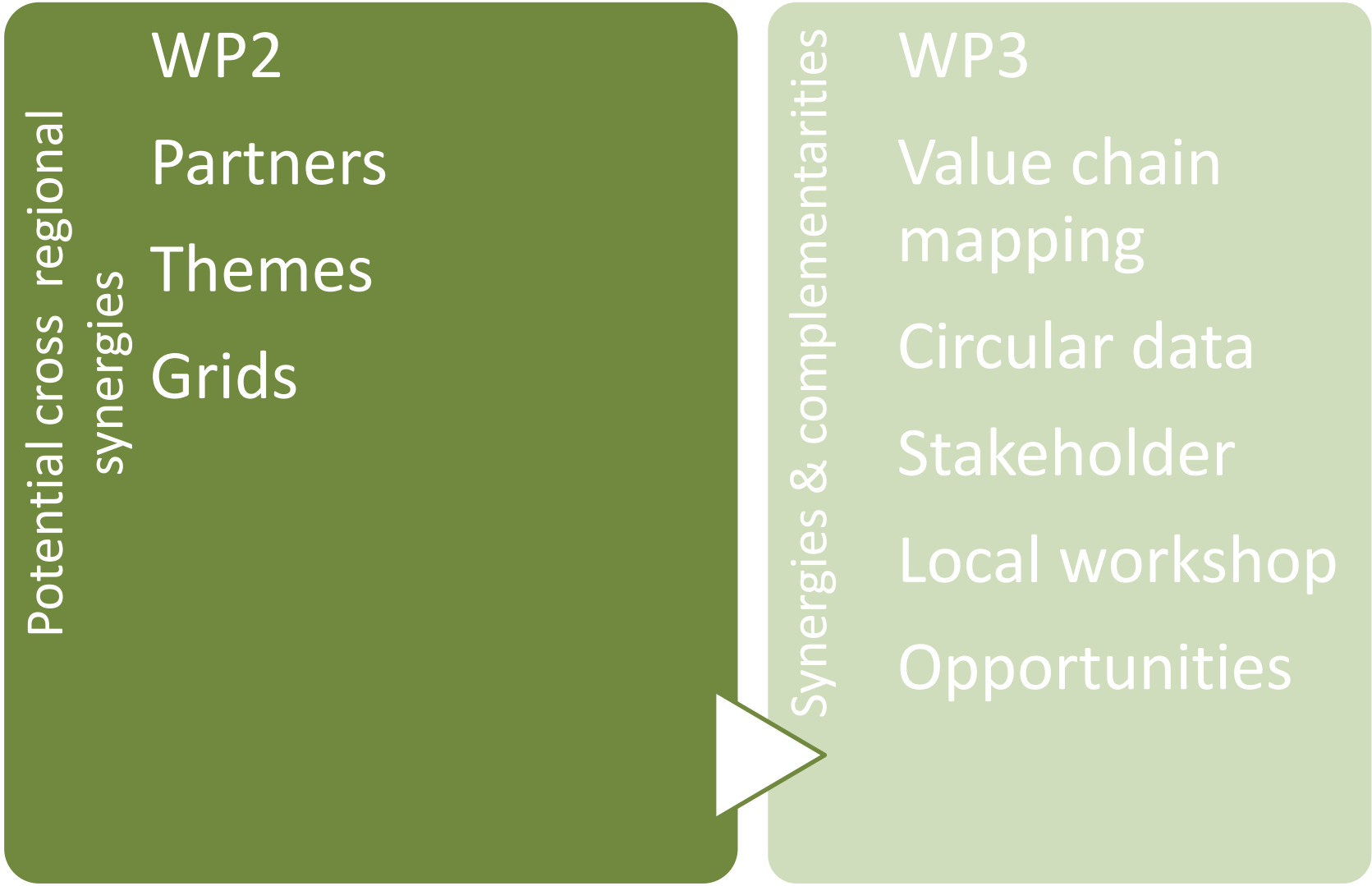

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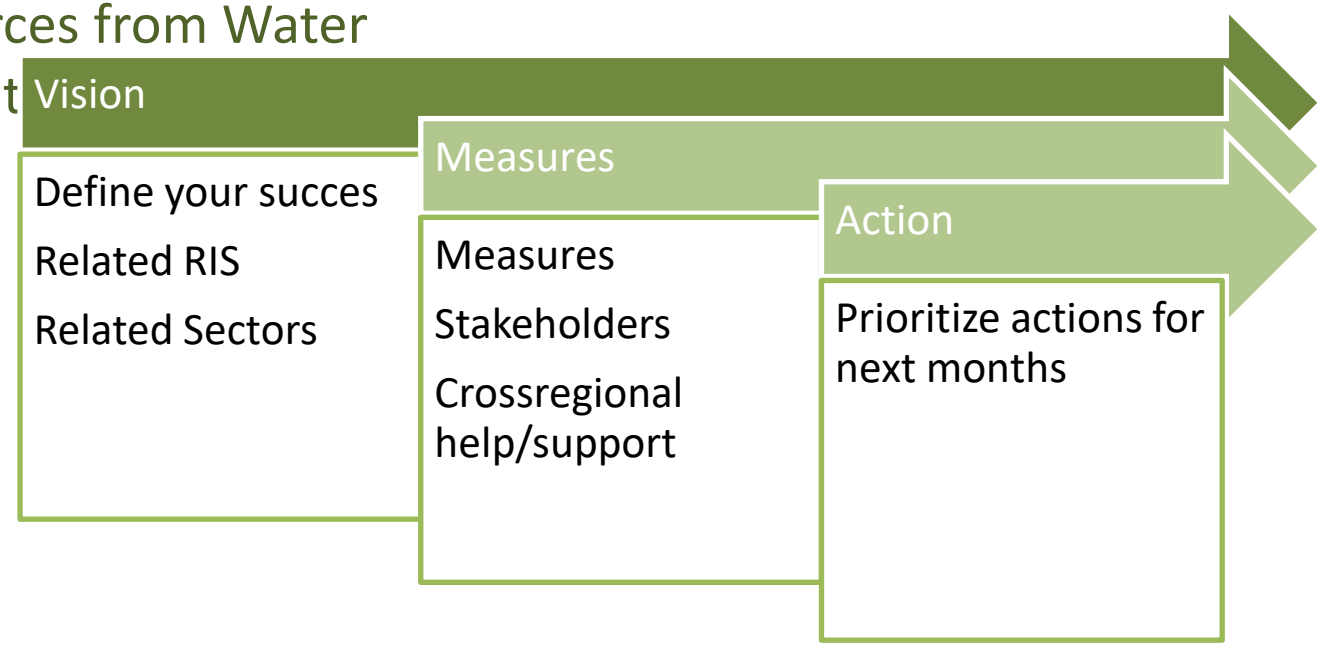
Workshop cross regional synergies
15:15 – 17:00

1. **Reflection on approach**
   - Focus by: Criteria & requirements, RIS & sectors
   - Data, Interaction or both?
   - Importance of emerging ideas
   - Necessary follow-up steps

2. **Exercise on:**
   - Resources from Water
   - Agricult
   - ……



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