

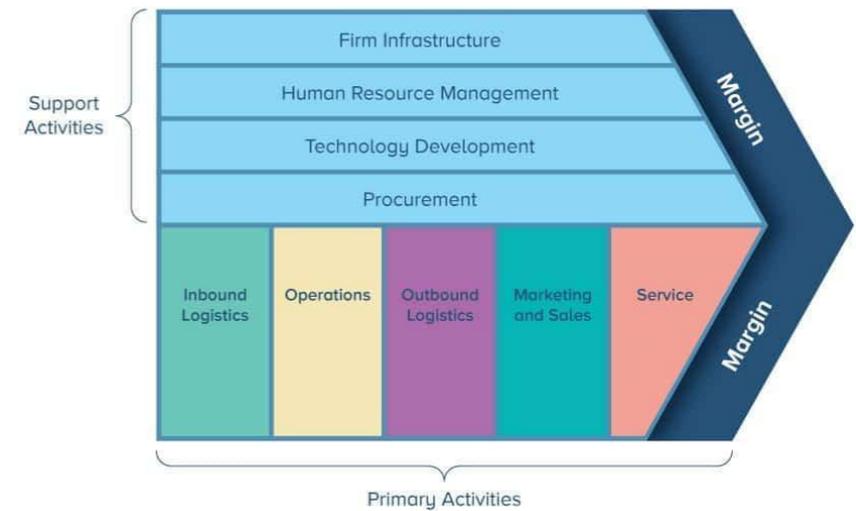
BRIDGES project

Additional activities

Value chain mapping methodology
Interregional meeting 9.3.2022

Why value chain mapping is one of our priorities?

- Michael Porter; Porter's Value Chain Analysis is a business management concept that was developed by Michael Porter (Competitive Advantage (1985)).
- Value chain analysis is more than a straightforward cost-to-profit model. It expands on the principles of economies of scale and capacity (<https://www.smartsheet.com/everything-you-need-to-know-about-value-chain-analysis>)
- Economies of scale and capacity have both a territorial and value chain dimension. The territorial dimension relates to localisation of value chains as well as to industrial, innovation and regional policy.
- For a business, the overall goal of value chain analysis is to identify areas and activities that will benefit from change in order to improve profitability and efficiency, taking into account that lowering costs has a limit and quality and differentiation are also important (<https://www.smartsheet.com/everything-you-need-to-know-about-value-chain-analysis>).
- The latter leads to differentiate between comparative advantage (cheaper) and competitive advantage (better and cheaper).
- In the BRIDGES project we deal with value chains from the territorial perspective (localisation) linking with place-based potential and strategies.



Value chain analysis,
Porter's concept

Why is value chain mapping a (relative) challenge?

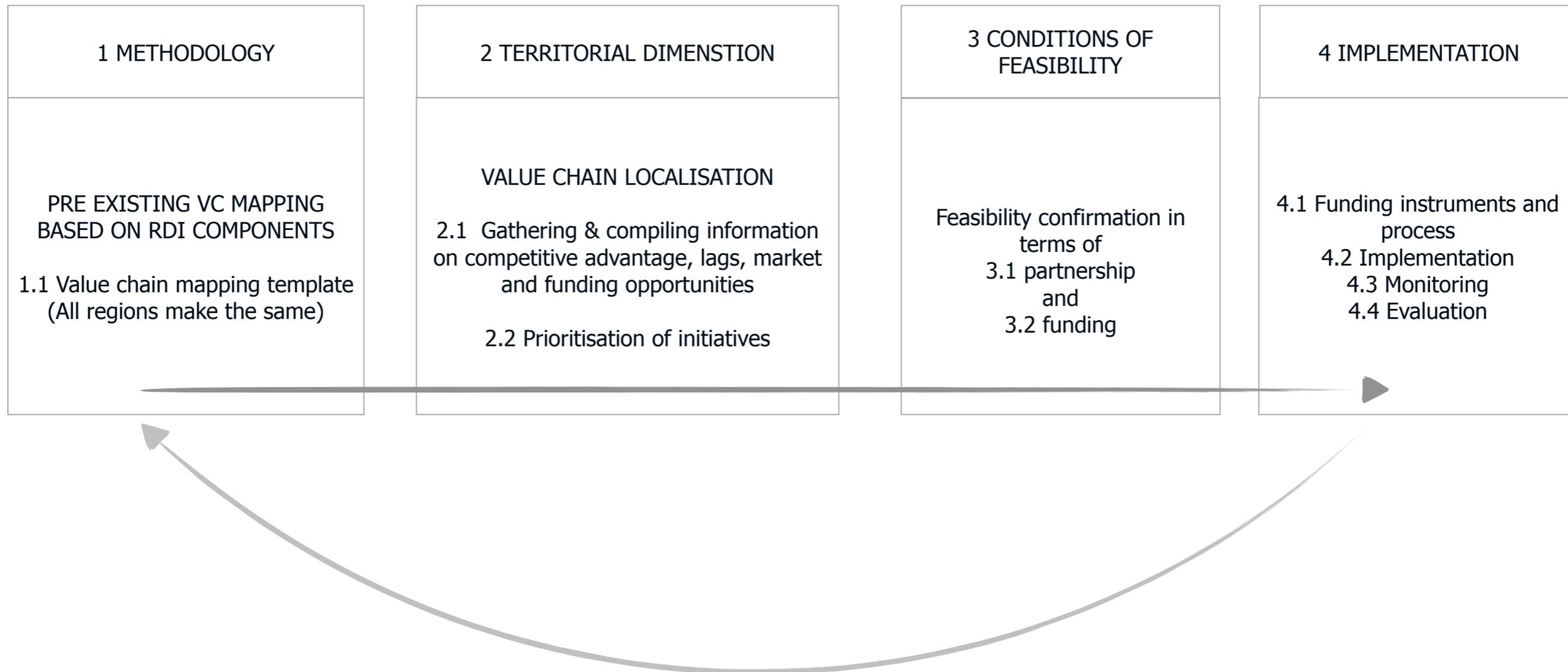
Cost Drivers of Value Chain Analysis & focus in the BRIDGES project

- Porter's 10 cost drivers are factors that can impact the cost of an activity. In **green fonts** the cost drivers that are currently included into the BRIDGES project value chain mapping.
 1. Economies of scale (part of the regional competitive advantage consideration)
 2. Learning and spillovers (part of the in-shoring and re-shoring considerations)
 3. Pattern of capacity utilisation
 4. Linkages (part of the in-shoring, re-shoring and near-shoring considerations)
 5. Interrelationships (part of the in-shoring, re-shoring and near-shoring considerations)
 6. Integration (through another project.....)
 7. Timing
 8. Organisation's (business) policies
 9. Location (we bring together 1,2,4 and 5)
 10. Institutional factors (regional smart specialisation strategies)
- An organisation can aim to control these cost drivers in order to improve efficiency, add value, and differentiate.
- A region can discuss where economies of scale are concentrated, what interactions are the most useful / promising for the region and how to address them.

Disadvantages of Value Chain Analysis (Source: <https://www.smartsheet.com/everything-you-need-to-know-about-value-chain-analysis>)

- Experts argue that "Value chain analysis is no simple feat".
- Difficulties involve gathering data (which can be labour and time-intensive), identifying the tasks or functions that can add perceived or real value, and developing and deploying the plan.
- Additionally, it is not always easy to find appropriate information in order to break your value chain down into primary and supporting activities.

Our approach



1. Value chain mapping methodology (1)

1) Background experience from the feasibility study of the Kainuu BRIDGES project action plan. It focused then, on the berry industry value chain based on R&D analysis.

ACTIVITIES		SUPPLY CHAIN						
R&D		Production	Logistics	Policy	Promotion	Funding	Partnerships	
Supply chain mapping								
Key technologies		Products	Application	Key in-vestment	Promotion	Policy, 3S, industrial modernisation/ agrifood	Partnership/ Markets	
Input / raw material	Cultivation development in field an forest (wilderness)	Facilitative: ICT and logistics	Cultivars, lines, material from specified production	Correct raw material to correct process	Plant breeding	Economic sustainability	Rural (innovation) policy Horticulture, agriculture, forestry,	
Harvesting	Harvesting technology	Primary supply networks	Harvester: robot or hand-held tools	Intensification of the harvesting process	Automatic, robotics	Sustainability, naturalness	(Rural) innovation policy Robotic, censor technology markets	
Storing	Storage manufacturing	Logistics	Optimization	Balancing of the input to processing	Renewable energy, material efficiency	Clean technology	Energy and climate policy Energy technology	
Cleaning	Sorting, cleaning, grading – utilization of side flows	Robotics, blockchain technologies	Fresh products	Food and food ingredients	Automatization	Naturalness, organic, freshness, cleanness, health impacts, sustainability	Nature-based innovation, clean investment, competition, health, SDG Manufacturing	
Processing	Extraction – utilization of side flows, deoil	Assembling critical masses, stabilizing (drying and freezing)	Berry juice concentrates, berry nfc juices and syrups. Purees with seeds.	Food, feed, end ingredients	Extraction facilities- concentration –(hot water, ethanol, supercritical I-CO2 circulation	Naturalnes, organic, freshness, cleanness, health impacts, sustainability, techn. Quality	Nature-based innovation, clean investment, competition, health, SDG metrics Food technology	
	Dewater, dry, deoil, grinding	Logistics	Berry powders for feed, food Grinded material for cosmetics compensate plastic beans	Food, feed, cosmetic ingredients	Mill/ grinder, separator, drier, cocentrator SFE	Naturalness, organic, cleanness, health impacts, sustainability, techn. Quality	Innovation (purity), clean investment, competition, transparency, health, SDG metrics Food technology, cosmetics technology	
	Functional food and cosmetic ingredient processing	Critical quality of the raw material, wide spectrum	Aromatic ingredients, functional polyphenolics, seed oil, fibre, stains	Cosmetics	Extraction facilities- concentration –(hot water, ethanol, supercritical I-CO2 circulation	Naturalness, organic, cleanness, health impacts, sustainability, techn. quality	Innovation (purity), clean investment, nature-based competition, transparency, health, SDG metrics Cosmetics technology	
	Consumer product processing	Encapsulation (micro, nano) from the extract during the drying process	Consumer product for feed, for food, for cosmetic	Consumer products in combination with oat ingredients (together with Valio and Dermosil etc.)	Food technology investments	Taste, applicability, naturalness, organic, health impacts, cleanness, sustainability, image building	Health, food, Innovation (purity), clean investment, nature-based competition, transparency, SDG metrics Food, feed, heath care, hotel services, sports, fashion and life style enterprises and NGOs	

Source: Resources Institute Finland (Luke) [Kurppa S., Hoppula K., Peltola R., Tupasela T., Järvenpää E., Mattila P., Virkkunen E., Mäkinen S. (2018). Berry industry renewal feasibility study. December 2018. BRIDGES project, Kainuu region action plan, Action 2 Berry industry renewal, page 10, Table 5. https://www.interregeurope.eu/fileadmin/user_upload/bx_tevprojects/library/file_1565773671.pdf.

3. Territorial dimension (1)

- 3) We are seeking localised concentrations of added value and competitive advantage in relation to the value chain map. Competitive advantage means 'doing things better & cheaper', i.e. it differs to the concept of comparative advantage which means 'doing things cheaper'.
- 4) Ideally, through statistical data, related to the region and value chain in question.
- 5) How do we decide competitive advantage? We map localised information in term of six (6) categories (business, product, research, solution, skills, policies; see next slide). Competitive advantage is decided in terms of concentrations of products, businesses, and so on.
- 6) Competitive advantage categories are the region's "peaks"; they are the categories on which we focus our re-shoring and in-shoring policy impact initiatives. Gaps (= the region's "valleys") are those categories which, in general, we consider for near shoring.
- 7) Template for identifying competitive advantage on the next slide.

3. Territorial dimension (2)

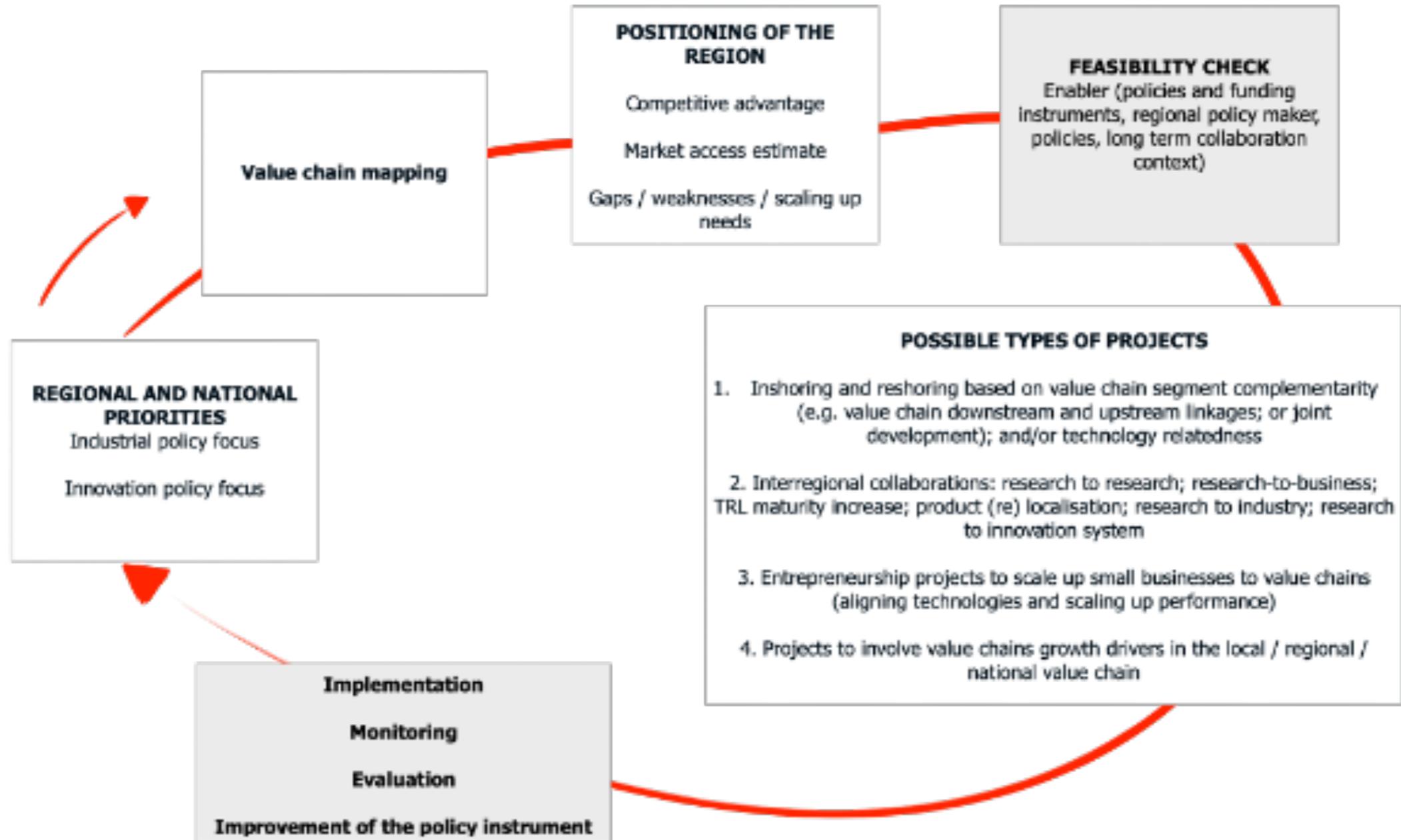
Value chain mapping based on supply chain linkages

	Key technologies	Products	Application	Key investment	Promotion	Policy, 3S, industrial modernisation/ agrifood	Partnership/ Markets
<i>Business</i>							
<i>Product</i>							
<i>Research</i>							
<i>Solution</i>							
<i>Skills available (none, some, average, very good, seeking to transfer knowledge and curricula)</i>							
<i>Policy</i>							
<i>Business</i>							
<i>Product</i>							
<i>Research</i>							
<i>Solution</i>							
<i>Skills available (none, some, average, very good, seeking to transfer knowledge and curricula)</i>							
<i>Policy</i>							
<i>Business</i>							
<i>Product</i>							
<i>Research</i>							
<i>Solution</i>							
<i>Skills available (none, some, average, very good, seeking to transfer knowledge and curricula)</i>							
<i>Policy</i>							
<i>Business</i>							
<i>Product</i>							
<i>Research</i>							
<i>Solution</i>							
<i>Skills available (none, some, average, very good, seeking to transfer knowledge and curricula)</i>							
<i>Policy</i>							

8) What we expect to find from the localisation of the value chain mapping and the identification of competitive advantage, is that for many regions, many boxes will not be filled in.

This is very fine, the issue is how to grow and ever improve the strengths and find good collaborations for the gaps.

4. Implementation

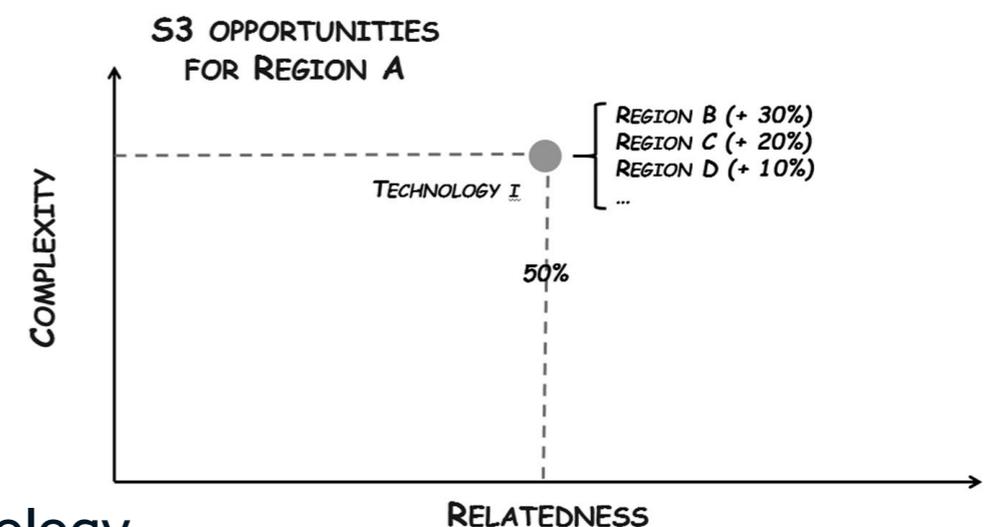


Does it work?

Experience: The method has been relatively new. Ultimately it boils down to the issue of tools for systematically identifying interregional complementarities.

Are there other options? Yes, there are other options. We identified the Balland & Boschma proposal (Pierre-Alexandre Balland & Ron Boschma (2021) Complementary interregional linkages and Smart Specialisation: an empirical study on European regions, *Regional Studies*, 55:6, 1059-1070, DOI: [10.1080/00343404.2020.1861240](https://doi.org/10.1080/00343404.2020.1861240)), based on technologies within patents of the same domain. It has potential for long term joint development of regions based on technological and innovation complementarities:

“An indicator for identifying and quantifying interregional technological complementarity opportunities has been proposed. The indicator is based on calculating technological relatedness and associated densities: “This indicator aims at capturing the impact of co-inventor linkages with other regions that provide access to relevant capabilities that are missing in a region, and which could increase its ability to diversify into a new technology. ... What matters is not being connected to other regions per se but being connected to regions that provide complementary capabilities”.



Does it work?

— **Why did we not apply the Balland, Boschma method?** We did not apply it because we felt that for regions that are not innovation strong or innovation leaders, patents are not always a suitable tool.

Patents' granularity is maybe not suitable for all kinds of regions, while it can be effective at any national level.

In our approach, we applied the notion of competitive advantage for added value concentrations of value chain segments in terms of raw materials and/or business (products), and/ or research, and/or education. One of our priorities has been localisation of value chain-related added value in any type of region.

Research next steps: we are seeking options to test the Balland & Boschma method in the BRIDGES / BERRY+ / other regions.

— **Finally:** is our approach ultimately operational? What should we improve, change? To be discussed during this meeting.

Thank you

Questions welcome



Photograph by Jyrki Haataja, Metsäkeskus.

Ninetta Chaniotou, Regional Council of Kainuu

www.interregeurope.eu/BRIDGES