The logic of smart specialisation – from clusters to transformation activities

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Interreg Alpine Space – S3-4AlpClusters

4th International Cluster Conference – March 14th 2019 – Venice, Italy
3 - Smart Specialisation: The Concept

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This brief introduces the basic concept of "Smart Specialisation" (SS) which has been a leading idea of the Knowledge for Growth expert group (K4G). The concept is spelled out in more detail in Policy Brief N°4 in relation to globalisation. Other K4G Policy Briefs that refer to the concept are those on Catching-up Member States (N°5) and on technology and specialisation (N°8).

Rationale for invigorating the R&D specialisation policy discussion

Addressing the issue of specialisation in the R&D and innovation is particularly crucial for regions/countries that are not leaders in any of the major science or technology domains. Many would argue that these regions/countries need to increase the intensity of knowledge investments in the form of high education and vocational training, public and private R&D, and other innovation-related activities. The question is whether there is a better alternative to a policy that spreads that investment thinly across several frontier technology research fields, some in biotechnology, some in information technology, some in the several branches of nanotechnology, and, as a consequence, not making much of an impact in any one area. A more promising strategy appears to be to encourage investment in programs that will complement the country’s other productive assets to create future domestic capability and interregional comparative advantage. We have termed this strategy “smart specialisation.”

Smart specialisation is expected to create more diversity among regions than a regime in which each region tries to create more or less the same in an imitative manner. The latter would almost certainly result in excess correlation and duplication of R&D and educational investment programs, which in turn would diminish the potential for complementarities within the European knowledge base. It is both an idea and a tool to help regions or countries to answer this critical question about their respective (and unique) positions in the knowledge economy.

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Reports and Policy Brief of the K4G expert group are to be found at: http://ec.europa.eu/invest-in-research/monitoring/knowledge_en.htm
S3 propositions

- A principle of targeted spending – focus & priorities - density
  - Proves to be more effective than proceeding as usual with dispersed spending and limited targeting

- A principle of (regional) differentiation of policy goals, instruments and practices – regions are characterized by region-specific capacities & opportunities
  - Proves to be more effective than undifferentiated recommendations of undifferentiated «best policy practices» - encouraging policy makers all to set their sights on doing the same «good things»

- A principle of prioritizing transformations, processes – «a direction»
  - Proves to be more effective than prioritizing structures (sectors)

- A principle of experimentalist governance and entrepreneurial discovery
  - Instead of principal-agent governance
**The 4 D’s + another one**

- **High degree of intentionality, prioritization towards** direction of changes
- **Gouvernance** discovery
- **Place-based policy** density (focus) and differentiation

**Towards agriculture 4.0 in Wallis (CH)**

- **Centrality of policy** design
  - The main mode of operation: building and developing a transformative activity

**Transformative activity (TA):**

A collection of related projects/actors i.e. density – all committed towards the same direction of change;
differentiation will occur since the TA captures region specific capacities and opportunities;
both construction and development of the TA involve a strong component of entrepreneurial discovery;
TA as a catalyst to transform and change structures (incl. clusters)
A process aimed at transforming one particular economic/industry structure of a region through the formation of new capacities and capabilities – the goal is to focus on and target this emerging transformative activity.

It is neither an individual project nor a sector as a whole but rather a collection of innovation capacities and actions, that have been “extracted” as it were from an existing structure or several structures, to which can be added extra-regional capacities and that is oriented towards a certain structural change.

Not necessarily cooperation but coordination
A framework to densify R&D networks and provide the related critical inputs

Each transformative activity is different and need to solve different capacity and coordination problems
Moving towards agric.4.0 (Wallis)
Modernizing the footwear industry through flexible production tech and design intensive products (Norther Portugal)
Developing a wind energy cluster (Galicia)
Digitalizing tourism activities in the area of cultural/historical heritage (Crete)

This is haute couture
Three phases – the S3 script

What priorities = what goals in terms of structural transformation

Why?

Translation of a goal into a transformational roadmap

Who and what?

Pertinent level – neither sector nor one big project but a set of related projects – Transformative activities

Action plan for the development of each transformative activity

How?

Coordination of funding instruments, EDP, monitoring & flexibility

Inter-regional cooperation

It is likely that some Regions will share similar priorities

Differentiation occurs because each Region has specific capacities and specific opportunities

Differentiation continues because instruments and programs are also specific

Public-private dialog – evidence based - centralized decisions

Decentralization – investment boards

Discovery

Decentralization – boards – active project management

Entrepreneurial discovery

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The three phases and the deliverables

**What priorities = what goals in terms of structural transformation**

*Why?*

**Translation of a goal into a transformational roadmap**

*Who and What?*

Pertinent level – neither sector nor individual project but a set of related projects - TA (density, direction)

**Action plan for the development of each transformative activity**

*How?*

Coordination of funding instruments, EDP, monitoring & flexibility
Inter-regional cooperation

**A few goals in terms of transformation (priorities)**

**A transformational roadmap for each priority**

**An action plan for each transformative activity**

Many regions tend to stop here – but ‘vision without execution is hallucination!’

Feedback: poor projects invalidate the choice of a priority
Phase 1 – Why these priorities?

- Priorities are identified with some levels of details. Priorities combine one (or more) sector(s) and a transformation goal
- Are similar priorities across regions a problem?
- Regional specificities and differentiation will emerge during the next phase
- Strong case for inter-reg.cooperation
Phase 2 – Translating a priority into a transformational roadmap

- Projects and actors are identified according to one priority – a direction of change within a sector or several sectors.
- They are qualified in terms of:
  - Capacities
    - Is the Region capable to undertake such project? What additional capacities would be needed?
  - Opportunities
    - Is the project based on innovation, new technologies and/or business models?
  - Relations
    - Are there contact points between this project and the others in terms of similar inputs (skills, research, services), complementarity in the value chain, search for similar business models?
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Wallis Region
Towards Agriculture 4.0 – fruits and related products

Application developed in collaboration with Agroscope (Monthey)

- A) Gestion des systèmes de culture en serre par contrôle non destructifs
- B) Sélection d’abricots: Lisa et Mia
- C) FREDR: la nouvelle poire d’Agroscope
- D) Robots pulvérisateurs sachant reconnaître les plantes
- E) Pulvérisation agricole par drone (SpUAV)
- F) Nouvelles méthodes de vinification rappelant l’utilisation récipients en argile (Rome, Georgie)
- G) Smartbox
- H) Effeuilleuse viticole
- I) Impression numérique
- J) Bouchon en liège technologique
- K) Emballage intelligent
- L) Automatisation de l’évaluation des plantes avec 3D multispectoral sensor
- M) Application mobile pour comptabilisation automatique des fruits
- N) Réseau de stations météos pour lutter contre le gel
- O) Kiwi rouge
- P) Technologie de maturité Softtripe
- Q) Emballage recyclable pour fruit
- R) Mise en culture de cacaoyers dans les régions semi-arides du Brésil
- S) Swiss future farm
- T) Formation des exploitants aux nouvelles techniques logistiques
- U) Compétences 4.0 pour le management des exploitations
- V) Acquisition de nouveaux tracteurs
- W) Nouvelles certifications et AOC
- X) Construction d’une plate forme logistique à la gare de Sion
- Y) Technologies des semences, engrais et protection avec contrôle digital et application à taux variable
- Z) A l’écoute des consommateurs
- A) Gestion des systèmes de culture en serre par contrôle non destructifs
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- Z) Shortcut towards consumers (streetmarket)
Mapping projects – cap - opp

- Core
- Capacity building
- Redeploy
- Elimin
- Uncertain
  - Need to check relatedness
Relatedness means that different projects if developed will share some critical inputs, some kind of business models, some research infrastructures.

Relatedness is required to get synergies, spillovers, relational density (all ingredients of a dynamic system of innovation).

Projects B, C, F, H,.. are NOT related (deal with plant variety breeding, winemaking processes or simple purchasing of equipments).
Transformative activity

- It is neither an individual project nor a sector as a whole but rather a collection of innovation capacities and actions, that have been “extracted” as it were from an existing structure or several structures, to which can be added extra-regional capacities and that is oriented towards a certain structural change.

- Many projects covering many issues (instead of one big project)
- Not necessarily collaboration but coordination
- A framework to densify networks of actors all engaged into a certain direction
- An intermediate level of granularity to generate an effective process of structural change – based on the 4Ds – direction, density, differentiation and discovery
- Transformative activity as a catalyst to transform a structure – a sector – a cluster

At first glance – it is just a call for proposals! But all selected projects:
- Will help the industry to move towards the same direction
- They are related (coordination and density)
- They don’t only cover R&D issues but also human capital and other critical specific inputs

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Action plan (phase 3)

- Availability of finance and specific public inputs
  - InnoSuisse get all R&D projects for funding decisions
- Contribution of public research sector (Agroscope)
- New training programs in UAS Suisse Occidentale
- Need for coordinated policy (funding) instruments
- A living document
  - Entrepreneurial Discoveries – surprise, failure, success
- Monitoring & flexibility
S3 meets the challenge of policy design

- Three tensions to manage
- Discipline *and* freedom to experiment
- Structure *and* process
- Generic *and* specific capacities and infrastructures

Nor absolute top down neither pure bottom up but this is about..

…”Designing an intermediate process aiming to enhance entrepreneurial efforts and coordination within a framework (a strategic priority such as industrial modernization of one/more sector(s)) structured by the government.”

- The EDP component is present in phases 2 and 3
A sound and unique innovation policy design for regional development

Thank you!

Smart Specialisation Strategies with Smart Clusters

A New Approach to Generating Transformative Activities

Transformative activities for smart specialisation – considerations on a Workshop Methodology – Working Paper – EPF Lausanne, UAS Fribourg & IIT Berlin, Keller et al., 2018