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Danube S3 Cluster

Transnational Cluster Cooperation active on Agro-Food, based on Smart Specialization Approach in the Danube region

Deliverable

Methodology for Regional Analysis of Context and Cluster Innovation Potential

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List of Abbreviations

ASP	Associated Strategic Partner
ECCP	European Cluster Collaboration Platform
EDP	Entrepreneurial Discovery Process
EU	European Union
R&D	Research & Development
RIS3	Research and Innovation Strategies for Smart Specialisations
SME	Small- and medium-sized enterprise
SO	Specific Objective
SWOT	Strengths, Weaknesses, Opportunities and Threats
S3	Smart Specialization Strategies

List of Figures

1   Executive Summary

The European Union (EU) has elaborated a growth strategy that aims at boosting jobs, small- and medium-sized enterprises (SMEs) growth and investment. Cluster policies and smart specialization strategies (S3), which are cornerstones of this growth strategy, share the idea that regions should identify and focus on their strengths, develop specializations in order to position themselves in global value chains and build strategic partnerships with other regions.

A major objective of the Danube S3 Cluster project is the elaboration of a transnational cluster strategy to foster transnational cluster cooperation in agro-food. The focus on the agro-food sector derives from the fact that most Danube partner regions included it in their smart specialization strategies. The transnational cluster strategy will integrate the findings of a transnational analysis of the Danube regional context and cluster innovation potential based on 11 regional analyses. All Danube S3 Cluster project partners including associated strategic partners are involved in this activity.

This document constitutes the methodology for the preparation of the regional analyses of context and cluster innovation potential (D 3.1.1). The methodology has a threefold objective:
1) ensure that all project partners have a common and clear understanding regarding the objective, expectations and structure,
2) increase the comparability of the different partner reports, and
3) ease the preparation of the transnational analysis.

The objective of the regional analyses is to perform a comprehensive diagnosis of the Danube region's competitiveness. In their respective report, project partners will particularly focus on the specific economic, political and cluster situation of their region. To ease the comparability of the findings and the preparation of the transnational analysis, project partners are asked to follow the same fundamental structure when drafting their regional analysis, which is composed of two parts: diagnosis and recommendations.

2 Introduction

The European Union (EU) has elaborated a growth strategy that aims at boosting jobs, small- and medium-sized enterprises (SMEs) growth and investment. Cluster policies and smart specialization strategies (S3), which are cornerstones of this strategy, rest on the idea that regions should identify and focus on their strengths, develop specializations in order to position themselves in global value chains and build strategic partnerships with other regions.[1]

The main goal of the Danube S3 Cluster project is to leverage the innovation-driven entrepreneurial ecosystem in the Danube region by developing cluster policies using the S3 approach. A major objective is thereby the elaboration of a transnational cluster strategy to foster transnational cluster cooperation in agro-food. Indeed, most Danube partner regions included agro-food in their smart specialization strategies.

The transnational cluster strategy will be the result of a process that includes among other things a transnational analysis of the context and cluster innovation potential in the Danube region fed by analyses of the different partner regions. The transnational analysis, which is the goal of Activity 3.1, will help achieving the first specific objective (SO1) of the Danube S3 Cluster project, that is, to "develop smart and coordinated cluster policies and related implementing instruments in the Danube region, using the smart specialization approach".

This deliverable develops a common methodology for realizing regional analyses of context and cluster innovation potential. This methodology will ensure that all project partners have a common and clear understanding regarding the objective, expectations and structure of their review. It will increase the comparability of the different regional analyses and ease the preparation of the transnational analysis by SEZ/S2i. The transnational analysis will contribute to identify priorities for the strategy and design a coherent mix of policy interventions.

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[1] See *Smart Guide to Cluster Policy* (2016), p. 5.

3 Preparing a regional analysis of context and cluster innovation potential

3.1 Objective

The objective of the regional analyses and of the aggregated transnational analysis is to **perform a comprehensive diagnosis of the Danube region's competitiveness**.[2] In their regional analysis, project partners will therefore address the specific economic, political and cluster situation of the region, as well as the context conditions. The analysis shall cover the last five years (2013-2018) so as to be able to identify trends. The following precisions provide guidelines for the diagnosis and reflexion but do not constitute an exhaustive list. Further aspects pertaining for instance to the legal framework conditions, history or geography of the region may also be relevant to include. The cluster analysis will contain a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats).

At this stage, it may be relevant to remind what smart specialisation is and the role of clusters in the process.

What is smart specialisation?

The concept of smart specialisation relies on the principle of **economic differentiation**. The idea is that each region disposes of distinctive characteristics, knowledge bases, assets and capabilities and that in order to bring regions/countries to become – and remain – competitive in the global economy, the latter should concentrate on a limited number of economic activities (**economic specialization**). The objective of a smart specialization strategy (S3) is to strengthen a region's competitive advantage "by diversifying its unique, localised know-how into new combinations and innovations which are close or adjacent to it" (RIS3 p.18).

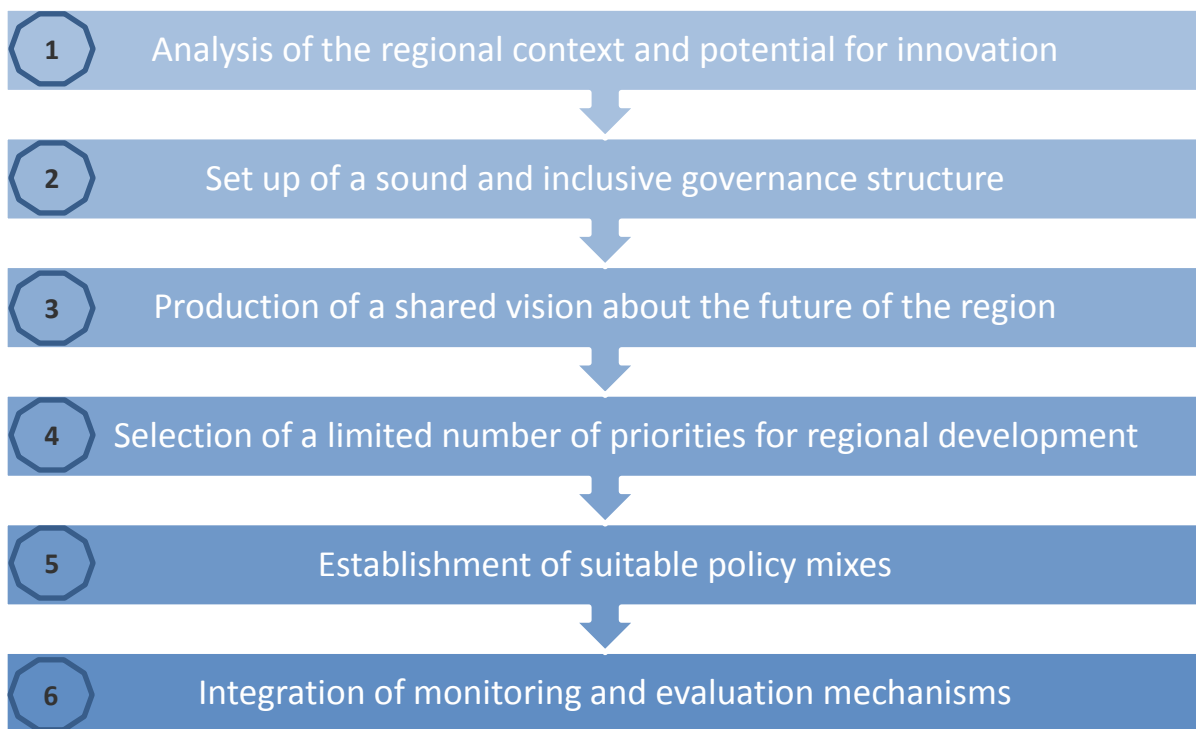**Clusters and smart specialisation**

Clusters play a central role in the design and implementation phases of smart specialisation strategies. In the design phase, they offer a huge potential due to their important knowledge, the presence of key entrepreneurial actors among their ranks and their strong potential for ideas. In the implementation phase, they can

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greatly contribute to smart specialisation's objectives thanks to their important mobilisation capacity (both in terms of resources and action).

In the frame of the Research and Innovation Strategies for Smart Specialization (RIS3), a **six-step approach has been developed** as show in Figure 1[3].

Figure 1: The six-step approach of RIS3

1	Analysis of the regional context and potential for innovation
2	Set up of a sound and inclusive governance structure
3	Production of a shared vision about the future of the region
4	Selection of a limited number of priorities for regional development
5	Establishment of suitable policy mixes
6	Integration of monitoring and evaluation mechanisms

The present document provides a methodology for regional analysis of context and cluster innovation potential that corresponds to the first of these steps. The aim of the different regional analyses is to assess both the existing assets and the prospects for future development in each of them.

To ensure a solid analysis, it is **important to diversify the sources but also to combine different tools and methods**. The analysis will mainly consist in desk research (regional and comparative studies, analyses, surveys, reports, scientific articles, etc.) but the results of the interviews with cluster managers and members (in the frame of innovation audits) will provide useful information for the analysis. In addition, discussions and exchanges with quadruple helix actors during the Entrepreneurial Discovery Focus Groups will enrich and feed into the regional analyses. One objective of the focus groups is to identify the regional weaknesses and strengths of partners, economies and clusters active in the agro-food sector.

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[3] See *Guide to Research and Innovation Strategies for Smart Specializations (RIS3)* (2012), p. 17.

The more information you can gather, the more precise the picture of your region will be. The diversity of sources and methods helps obtaining different information but also enables to crosscheck and validate findings. **The sources used in the analysis should be clearly identifiable and mentioned.**

3.2 Structure

To ease the comparability of the findings and the preparation of the transnational analysis, partners shall follow the same basic structure when drafting their regional analysis. A template for the regional report is provided in Annex. Please use this template for the analysis. The report is composed of two parts: diagnosis and recommendations. The **first and main part of the analysis will be devoted to the diagnosis based on the literature review**. The economic, political and cluster analyses will be addressed in this part. Although Strengths, Weaknesses, Opportunities and Threats analysis (SWOT analysis) is a framework used to evaluate a company's competitive position, it provides a useful framework for structuring the cluster analysis. The **second part will provide tentative recommendations** based on the results of the SWOT analysis and particularly the weaknesses identified. In this section, partners will also identify priorities for the strategy and policy interventions. The standard structure may be adapted or complemented if a project partner judges it pertinent.

PART I: Diagnostic

Analysis of economic performance:

- Define the size and stage of economic development of your region/country
- Composition of the regional economy in terms of its performance, industrial base, profiles, underlying capabilities and assets (provide figures)
- Identify mature and emerging industries
- Labour market situation (e.g. unemployment rate, employment rate in the 5 main sectors and in the agro-food sector)
- If possible use comparative studies to identify the competitive advantages of your region compared to other regions
- What is the position of your region within the European and global economy (if data available)? Are there relevant linkages and flows of goods, services and knowledge with other regions from the project area? (Provide figures)
- Detect similarities or complementarities with other project regions: this will be helpful to pursue interregional collaboration

- Is your region/country strategically positioned in international value chains? How so?
- Are there international conferences, fairs or other events in your region – notably connected to the agro-food sector? (where, when, how often, targeted audience, topics/areas)
- Analyse the regional innovation potential:
    o Analyse the SMEs' needs and barriers for innovation
    o Assess the support provided by the infrastructure in place in the region to back innovation
    o Combining both analyses leads to a "gap analysis" → this helps identifying possible mismatch between needs/demand for support from SMEs and the effective value-added of the existing support

Political analysis:

- Map the political priorities set by your region/country in its smart specialization strategy (via Eye@RIS3 tool)
- Institutional structure of your region/country (e.g. federal vs. centralized state, repartition of prerogatives and competences)?
- Describe the current policy framework in your region. Does it go beyond sectoral, regional and departmental 'policy-silo-patterns'? How so?
- Are there fiscal incentives concerning the agro-food sector?
- Has your region undergone an Entrepreneurial Discovery Process (EDP)[4]?
    o If yes, when and what were the results?
    o If not, is it planned?
- Type of public interventions towards clusters (e.g. supporting networking, channelling research and innovation funding though clusters, conducting training activities, supporting the internationalization of SMEs, providing support to infrastructure)
- Do public authorities provide entrepreneurship support (counselling, financial support such as grants, loans, credits, etc.) in general and in the agro-food sector in particular?

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[4] Entrepreneurial Discovery Process consists in finding out what a region does best, what are its competitive advantages and related innovation opportunities and in developing joint roadmaps and aligning investment agendas. See *Smart Guide to Cluster Policy* p. 12.

Interreg
Danube Transnational Programme
Danube S3 Cluster

The audits and interviews with cluster managers and cluster members that will be conducted in Period 2 (within the framework of Activity 4.2) will contribute to identify entrepreneurial actors.

Context conditions (e.g. social, technological, legal and environmental situation):

- What is the structure of the society in your region (socio-demographic characteristics: age, ethnicity/migration, education, employment and income)?
- How many universities do your region/country have? How many students?
- What is the scientific basis in your region (indicators: patents, scientific publications, number scientific articles and number of citations)?
- Describe the technological infrastructure and specialization of your region
- What is the budget for R&D in your region? What are the priorities in R&D?
- What are the major regional strengths and weaknesses? (e.g. number of patent applications, number of universities and institutes offering programs and degrees in agricultural studies / agro-food business)
- Patent regulations
- Do scientific and technological specialisation match?
- Quality of collaboration and dialogue among stakeholders (are there platforms, forums, events, associations in which they meet, exchange or work together?)
- What are the legal framework conditions? (e.g. what is the weekly working time in the agro-food sector? What are the conditions for dismissal / protection against dismissal? Are there restrictions for production?)
- What are relevant environmental regulations?
- Are there particularities related the geographical location of the region?
- What are climatic and environmental characteristics of the region (weather, climate, climate change, food, soil, energy, pollution)?

Cluster analysis:

Guiding questions for mapping, screening and analysing the clusters active on agro-food industry (for each cluster)[5]:

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[5] A number of indicators mentioned in this section are taken from the document *Qualitätslabel "Cluster-Exzellenz Baden-Württemberg* from Cluster-Exzellenz Baden-Württemberg.

- What type of cluster is it? (e.g. industrial or research-driven cluster, launched through a government policy or without public intervention, mature or emerging cluster)
- Geographic scope of the cluster (e.g. regional, cross-regional (within one country), transnational (in macro-regions), international)
- Cluster boundaries: What are they? How the cluster and the targeted industry or groups of industries have been defined and spatially determined?
- Thematic / industrial scope of the cluster (e.g. narrowly defined cluster, sectoral focus, cross-sectoral or thematic focus, contribution to societal challenges)
- Define the cluster portfolio and main focuses (e.g. activities covered by the cluster)
- Is the cluster adapted to the regional environment (indicators: composition of the people involved in the cluster, inclusion of the different groups of actors in the decision process)?
- What is its level of maturity (indicators: number of cluster actors, proportion of strongly and loosely involved actors in/with the cluster, degree of cooperation within the cluster, working groups within cluster)?
- What are its linkages with other clusters or other industries?
- What value does the cluster offer to companies in these industries?
- What is the capacity of the clusters to address emerging new domains cutting across sectors (cluster potential)?
- How well is the cluster integrated into global networks? (indicators: presence and characteristics of an internationalization strategy, integration of the cluster management in the regional innovation system)
- Communication and visibility of the cluster (indicators: internet presence, internal and external communication)
- Use cluster mapping to 1) identify regional competences, assets and specialization patterns and to 2) compare economic activities and strengths with other regions in the EU → use European Cluster Observatory tool

3.3 SWOT analysis

The SWOT analysis provides a useful tool to identify strengths and weaknesses and therefore the unique assets and competitive advantages of a region. As already mentioned, SWOT stands for Strengths, Weaknesses, Opportunities and Threats.

The four dimensions can be grouped into 2 categories: strengths and weaknesses as internal factors and opportunities and threats as external factors (see Figure 2). Strengths and weaknesses are "internal" factors to the extent that the clusters can influence them. These two dimensions have a regional/national horizon. Opportunities and threats on the other hand are external factors: they concern the environment in which the clusters are handling. In our case, this environment is European. The aim of SWOT is to identify the favorable and unfavorable internal and external factors for the clusters in the agro-food sector in your region. The recommendations that are to be made in the second part of the regional analysis shall cover all four dimensions but with a particular focus on the weaknesses identified.

Figure 2: Internal and external dimensions in a SWOT analysis

To allow for comparison of results between regions, the SWOT analysis will follow a **common framework** – that slightly differs from the depiction shown in Figure 2. The template given in Annex 2 states a list of categories to be considered in the analysis. The categories are complemented by **keywords,** which further describe the different aspects of a category. The idea is to scrutinize each category regarding the strengths, weaknesses, opportunities or threats implied for the region's clusters in agro-food and to provide a short description/specification of the regional situation, preferably in bullet points.

Please feel free to add to this list other categories or keywords, if you think it is necessary in order to grasp the clusters' potential.

PART II: Recommendations

- Select priority fields and activities
- How to take advantage of the local strengths and assets?
- Identify vertical priorities, that is, specific areas or 'domains' of activity in which a location has a specific strength or potential and which are likely to transform the existing economic structures through Research & Development (R&D) and innovation
- Monitoring mechanisms: Are there some in place? If yes, what are they? If no, what could be set in place?
- How can national/regional governments strengthen clusters (what means and instruments do they have at their disposal)?

The recommendations shall particularly address the weaknesses identified in the SWOT analysis.

3.4 Useful sources

The regional analyses will provide a literature review of regional and national documents, as well as other publications on the economic situation and context of the region, on the regional strengths and potentialities, on the agro-food sector and smart specialization strategy in a particular region.

Moreover, a number of documents and tools from the European Union will be most useful to prepare the regional analyses:

1) The *Smart Guide to Cluster Policy* provides a very valuable document to understand what makes clusters successful, what are modern cluster policies but also how to make better use of clusters to promote regional industrial modernization, encourage smart specialization and support SMEs.

2) The *Guide to Research and Innovation Strategies for Smart Specializations (RIS3)* gives a clear methodological guidance for preparing, designing and implementing a national/regional research and innovation strategy for smart specialization.

3) *Eye@RIS3* is a tool from the European Commission that helps visualizing public investment priorities for innovation across Europe, drawing comparisons between territories, finding partners for collaboration. Data are based on the information found in S3 and related strategic frameworks. Data are continuously updated based on inputs from European regional and national authorities and their stakeholders.

4) The *European Cluster Collaboration Platform* (ECCP) provides another major source of data to map clusters and search/find partners and opportunities. It provides a precious database on regional, national, international and sectoral cluster networks as well as a database of profiled cluster-related projects

5) The *European Cluster observatory* constitutes a single access point for statistical information, analysis and mapping of clusters and cluster policy in Europe. This tool also allows performing benchmarking activities in order to better understand the position of a region in a particular sector in comparison to other EU regions.

3.5 Repartition of tasks among partners

Box 1 underlines the role of each project partner as mentioned in the Application Form p. 66. **All project partners including associated strategic partners (ASPs) are involved in the preparation of regional analyses**.

Box 1: Partner contribution and responsibility regarding the regional analyses

Baden-Württemberg: SEZ/S2i

Bosnia-Herzegovina: NERDA (with inputs from GL-WB)

Bulgaria: BSCSME

Croatia: EKO-SUSTAV (with drafting support from MINGO)

Hungary: IFKA (with inputs from PBN)

Moldova: MTTN (with drafting support from ASM)

Romania: SMRDA (with inputs from INMA and CRIMM and drafting support from ME)

Serbia: FTS

Slovakia: BEC

Slovenia: UM

Ukraine: IMPEER NASU (with drafting support from Igor Sikorsky KPI)

SEZ/S2i is responsible to gather all 11 regional analyses, aggregate the findings and prepare a transnational analysis.

This transnational analysis (D3.1.2) will complete Activity 3.1. This activity comprises two deliverables: the methodology for regional analysis of context and cluster

innovation potential (D3.1.1) and the transnational analysis based on 11 regional analyses of context and cluster innovation potential (D3.1.2).

Figure 3: Timeline of Activity 3.1

Methodology
- Responsible: SEZ/S2i
- Deadline: **Period 1**
- **Deliverable 3.1.1**

11 regional analyses
- Involved: All partners
- Deadline: **Period 2**

1 Transnational analysis
- Responsible: SEZ/S2i
- Deadline: **Period 3**
- **Deliverable 3.1.2**

Activity 3.1: Transnational analysis of Danube regional context and cluster innovation potential
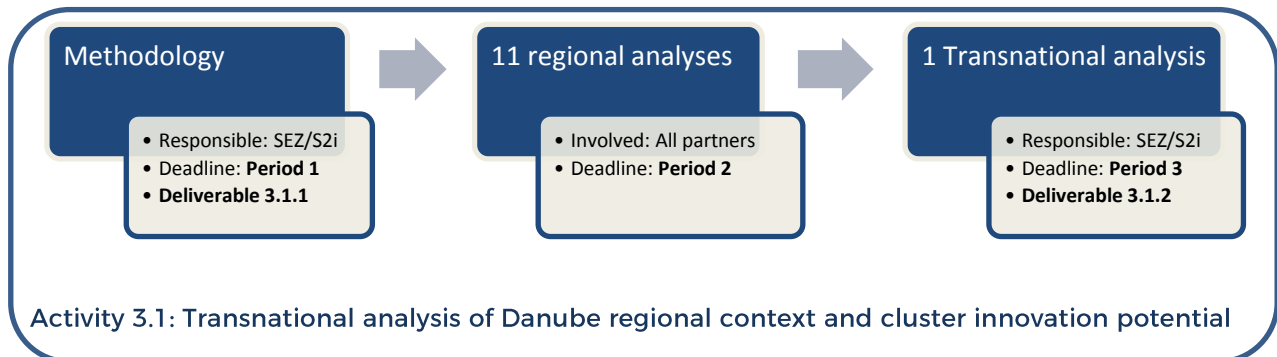
Partners will send a first draft of their regional analysis (in word format) by February 28 2019.

SEZ/S2i will then review the draft and provide comments concerning areas that should or could be further developed.

Deadline for sending the final version of the regional analysis to SEZ/S2i (in word and pdf format) is April 30 2019.

4 Conclusion

The objective of the methodology described in this document is to provide a framework to help and guide project partners in drafting their regional analyses. SEZ/S2i, which cumulates three hats – Work Package leader, Activity leader and deliverable responsible –, remains at the disposal of each project partner to discuss questions and issues that may arise during the preparation of the regional analyses. The template provided in Annex will help structure the report. However, this structure may be adapted and complemented according to the particularities of the region. It is important to diversify the sources but also to combine different tools and methods in order to obtain a full picture and to validate findings.

5 Bibliography

European Commission (2016). *Smart Guide to Cluster Policy*. Guidebook Series: How to support SME Policy from Structural Funds.

European Commission (2012). *Guide to Research and Innovation Strategies for Smart Specialisations (RIS3)*.

European Cluster Collaborative Platform: www.clustercollaboration.eu/

EU smart specialization platform: http://s3platform.jrc.ec.europa.eu/map

EU cluster mapping tool:

https://ec.europa.eu/growth/smes/cluster/observatory/cluster-mapping-services/mapping-tool_en

Cluster-Exzellenz Baden-Württemberg. *Qualitätslabel "Cluster-Exzellenz Baden-Württemberg" – Beschreibung der Indikatoren*: www.clusterportal-bw.de/en/cluster-excellence-bw/quality-indicators/

6 Annexes

Annex 1: Template for regional report

Regional analysis of context and cluster innovation potential

The questions listed in the methodology provide guidelines for the analysis. Whenever possible, provide figures and graphs.

Country / region:

PART I Diagnostic

Analysis of economic performance (5 pages max)
Analysis of political situation (3 pages max)
Analysis of context conditions (5 pages max)
Cluster analysis based on the SWOT analysis (15 pages max)

PART II: Recommendations

Identify priorities for the strategy and policy interventions and address the weaknesses identified in the SWOT analysis (5 pages max)

Annex 2: Template for SWOT Analysis

Category/Keywords	Strengths	Weaknesses	Opportunities	Threats
Economic situation				
▪ Economic profile				
▪ Labour market situation				
▪ Industrial base				
▪				
Political situation				
▪ Political priorities				
▪ Institutional structure				
▪ Policy framework				
▪ Public intervention/support towards clusters (financial and non-financial)				
▪ Entrepreneurial support /subsidies				
▪ Fiscal policy				
▪				
Context conditions				
Technological situation				

▪ Technological infrastructure & specialization				
▪ R&D				
▪ Patent regulations				
▪ Scientific basis /specialization				
▪				
Social situation				
▪ Socio-demographics				
▪				
Environmental situation				
▪ Geographical location				
▪ Weather, climate and climate change				
▪ Food and soil				
▪ Energy				
▪ Pollution				
▪ Environmental regulations				
▪				
Legal framework				
▪ Restriction for production				

▪ Protection/conditions for dismissal				
▪ Working time				
▪				
Cluster situation				
▪ Portfolio				
▪ Regional environment				
▪ Communication & visibility				
▪ Integration in global networks/internationalisation				
▪				