Article

Stakeholder Engagement in the Co-Design of Regional Bioeconomy Strategies

File SA - Semi-structured interviews´ questionnaire

Lessons Learned and success factors of RBH in WE regions
Date: 07.12.2018

Aim of the interview

The following interview seeks to identify key factors, best practices and lessons learned during the establishment process of the current Bioeconomy Hubs in WE regions involved in POWER4BIO.

The results will be integrated into a guideline document, directed to CEE regions within the POWER4BIO project with the aim to support developing their own RBH establishment process.

Data protection: The information collected during this interview will be used, only for the purposes of the project POWER4BIO and following the agreement of the consortium.

Definitions

The following definitions are to consider while responding to this interview:

A Hub is a dynamic system of diverse interconnected stakeholders (such as innovative start-ups, small, medium and large enterprises, research and knowledge dissemination organizations, non-profit organizations, public administrations and other institutions) that cooperate closely in order to develop a particular field. The hub acts as a bridge builder with horizontal links(sectoral) and/or vertical links (value chain), improving communications, knowledge transference, sharing of experiences and disseminating information, which in turn stimulate innovative activities and a better response to external effects. Hubs are characterized by a sustainable and flexible structure to implement jointly agreed and politically supported objectives, within a defined timeframe.

In this sense, hubs act in a similar way to clusters, with the main difference that cooperation does not have to be mainly of economic actors, but all key actors that are essential to the main goals set within the hub.

Cluster is “geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions in particular fields that compete but also cooperate” also “linked by commonalities and externalities”, which boundaries can angel from a single city or state to a country or even a group of neighboring countries (Porter, 2000)

Questionnaire

Region:

Interviewee:

Interviewer:

Date:

1. Creation Process of Regional Bioeconomy Hub

This section aims at identifying the specific creation process of the RBH in the region, which could serve as a reference for the CEE regions. Additionally, the information here collected would be analyzed against documented success factors in the literature in order to provide practical recommendations to CEE regions.

a. When did the creation of the Bioeconomy Hub start and how long did it last? Could you identify the most important milestones in that process?

- Who belongs to the initial group – what was the motivation- perhaps concrete cause?
- Order of action – vision, stakeholder, selection of further stakeholder, sharpening of common goals
- Involvement of political stakeholders?

b. What was the initial focus (idea) of the Hub? (Based on specific sector, biomass and/or value chain). Has the focus changed in time? If yes, due to what factors?

- Idealism, concrete economic idea?
- Who is in the target group (success factors)?
- Which resource should be available to members (success factors)
- Has a potential analysis been carried out in advance?

c. Which stakeholders made part of the initial group that founded the Hub? How did they come together?

- Do the members come from special sectors or from different sectors, (Wood industry, chemical industry, Bioenergy).
- Which stakeholders were the driving forces? (success factors) – initial group, during the building up of the cluster

d. Which instruments or tools were used during the Hub´s setup? (i.e.: SWOT analysis, benchmarking analysis, etc). How was the application? Which ones would you recommend?

- Regarding the identification of most promising business models.
- Building of trust - understanding
- Communication

e. How was the process of agreeing on a specific focus and main goals for the Hub? What would you say was the most difficult in this process?

f. In which of the following categories would you place the main objective(s) of your Hub? Please choose all that encompasses the goals of your Hub.

☐ Research and development of research networks

☐ Private Lobby and the communication with the political sector

☐ Commercial cooperation

☐ Management of cluster members and policies to attract firms

☐ Creation of an administrative unit to promote the Hub

☐ The consolidation of internal resources and processes that will enable the Hub to further develop in an independent way

☐ Others: _____

g. Which were the most essential factors that facilitated the creation of the Bioeconomy Hub?

- Which stakeholders were key motivated individuals with the ability to inspire members and facilitate activities and networking (success factors)
- Which are the activities that make it advantageous to be a member of the CI and that complement other activities

h. Which were the main barriers for the establishment of the Hub? (Respond according to regional conditions, political support, acceptance of bioeconomy, economic barriers, etc.)

i. How were the barriers overcome? Which actors played an important role in the solutions?

j. What are the major lessons learned taken from the Hub´s establishment process?

k. What would not repeat in the establishment of a new Hub?

j. What would better political support look like? How can the interaction between policy and cluster be improved?

2. Characterization of current RBH

This section will identify the structure, organizational aspects and main activities of the Hub, in order to provide praxis examples of running Hubs structures to CEE regions as well as being able to pair later on regions with commonalities and potential possibilities of information exchange.

a. Please classify the current structure of your Hub according with the most used typologies in Clusters theory

☐ "Marshallian cluster model – In this model, clusters are homogenous and made up by small firms who both collaborate and compete, but where none of the firms has power to control the cluster".

☐ "Hub and spoke cluster model – In this model, a few firms dominate, around which other smaller companies are linked".

☐ "Satellite platform model – In this model, some multinational companies and their local branches are influencing the development of the region and providing opportunities for local sup-pliers. Regional companies are not necessarily connected with each other".

☐ "State anchored cluster model – In this model, the government's endeavours influence the region and fosters or sometimes impedes the economic relation between the members of the cluster".

b. Please classify your cluster according with this additional differentiation

☐ "Industry driven – In such clusters, there is a presence of large, international groups of compa-nies who are investing in R&D. SMEs are connected to these companies as suppliers or local drivers of knowledge".

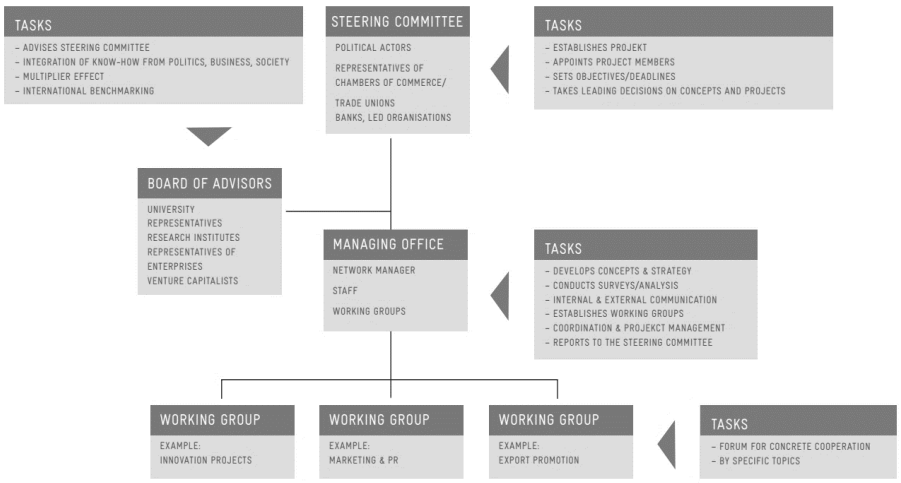
☐ "R&D-driven – Such clusters are driven by a university or research centre around which companies, start-ups, spin-offs, larger companies are gathered. There is a strong and dynamic entrepreneurial activity ongoing. Technological parks, science campuses can play an important role".

☐ "Collaboration-driven – Such clusters are characterised by intensive collaboration between public and private sectors. The public sector plays an active role in fostering cluster development. Entrepreneurship is supported by investment funds of large industrial groups present at the local level".

c. Does your Hub hold a different structure not included in the two previous questions? How is it? Please describe the Hub structure and how is it different from the categorization listed above.

d. Which legal form holds your Hub? (i.e.: Non-profit, association). Why was that preferred during Hub establishment and according to the conditions of your region?

e. Please describe the conformed Hub´s organizational structure, including the responsibility of each part. (If possible, please provide supporting documents). Here an example of the required organizational description with clear connection among units and their main responsibilities.



Source: GTZ (2007). Cluster management – A practical Guide.

f. Please describe the communication protocols in your Hub. (If possible, please provide supporting documents).

g. How many members are part of the Hub? Please distinguish, percentually, stakeholder groups represented by the Hub´s members (such as research and knowledge institutions, start-ups, SME´s, Big companies, regional public administration, national public administration, etc).

- How do you ensure sufficient number of active members for meaningful and valuable exchange to occur (success factors) – Limitation, Selection process

h. How interactions and cooperation among members of the Hub are promoted? Particularly from different groups/sectors/value chains.

i. How are the Hub´s activities coordinated?

j. What are the main services of the cluster? Please differentiate between services for the Hub members and the ones provided externally.

k. Apart from the services provided. What other advantages perceive your member from being part of the Hub? How many of those are not found in any other organizations in your region?

l. How did you identify the needs of the current and potential future members and how did you develop an appropriate offer to satisfy them? (i.e.: Workshops, stakeholders' meetings, benchmarking analysis, etc.)

m. Which are the target stakeholders or value chains that the Hub wants to attract? How is the Hub meeting their needs? Please describe target groups and their needs.

n. How and when do you recruit further members? What are the advantages and disadvantages of increasing your member base? What is the comfort members' base of the Hub?

o. How does the Hub´s management ensure to represent the interest of all and not individual members?

p. How are the Hub´s functioning structure and activities funded? According to which criteria is the financial contribution of each member calculated?

q. How is Hub´s progress monitored? Based on which criteria?

r. What do you consider are the major strengths and weaknesses of the Hub?

s. What would you say are the main competences and expertise areas of the Hub? Think about the future provision of counseling or training to external organizations.

3. Impacts of the Regional Bioeconomy Hub in the region

a. How does the region benefit from the Hub and its activities?

Please share additional reports or documents that support your affirmations with clear indicators.

b. What are the impacts on the regional economy? (i.e.: Job creation, new external investment, attracting international cooperation, public- private partnerships).

c. What are the impacts on the innovation environment and R&D increment in the region? (i.e.: creation of competence centres, Research-industry cooperation projects, pilot projects, etc.) Support with existing documents.

d. What are the impacts for the land use? Utilisation of abandoned land?

e. Have new value chains been developed thanks to the Hub? Which ones and how does the Hub strengthen its development?

f. How is the impact on public perception and awareness of bioeconomy?

g. Any other impacts?

3 Questionnaire References

(1) Porter, M. E. (2000), Location, competition, and economic development: Local clusters in a global economy, Economic Development Quarterly 14 (1): 15-34.

(2) Magnus Klofsten, Dzamila Bienkowska, Inessa Laur and Ingela Sölvell (2015), Success factors in cluster initiative management: Mapping out the 'big five', Industry and Higher Education, 29(1), pp. 65-77.

(3) Rivera León, L; Izsak, K; Bougas, K; Soto, V; Technopolis Group (2016), Regional Ecosystem Scoreboard Methodology Report. Final Report. European Cluster Observatory.

File SB - Table of content of the guideline "Regional Bioeconomy Hubs for regional bioeconomy strategies"

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File SC – Results of the SWOT analysis in CEE regions

1. SWOT ANALYSIS Mazovia (PO)

SWOT. KF1: AVAILABILITY AND USE OF RESOURCES

STRENGHTS (Note: There is an incoherence according to their resources potential (mainly forestry)	WEAKNESSES:

• Significant biomass potential in terms of agricultural biomass.
• Significant potential in terms of residues from:
  o agri-food sector
  o livestock farming sector (intensive pig and chicken farming)
  o pulp companies (residues used for nutrient production for fertilizers and energy recovery).
• Information regarding the feedstock availability for all biomass types. (resource potential and high quantity of by-products).
• High interest to set up possible initiatives in recovering sewage sludge.
	• No chemical industry applications identified.
	• < 40.000 t/year availability and low knowledge about supply.
	• Residues not accounted.
	• No clear idea about ways to valorise the plastics waste.
	• No platform providing information of resources.

OPPORTUNITIES	**THREATS**
• Distribution of the resources across the region. • Few biomass plants (<5). • Possible use and transformation of current industries. • Large biogas installation (in general about valorisation of by-products by means production of syngas). • Only recovery of packaging waste and other plastics. Valorisation of by-products from the agro-food sector seek for synergies among agri-food and pulp companies or others.	• Biorefinery concept not developed in the region yet. (also is an opportunity). • Risk to set up long term biorefinery processes. • Intensive pig and chicken farming

SWOT. KF2: INFRASTRUCTURE/INDUSTRIAL FACTORS

STRENGHTS	WEAKNESSES:
• Adequate road infrastructure. • Interest in using chemical industries. • Existence biomass transport companies. • Well connected • Chemical and agri-food cluster. Biogas and combustion plants. • Waste management and material recovery.	• Network of transports are not sufficient (road and trail). • Lack of synergies among the actors of the value chain and different sectors • No existent logistic centre managing waste stream. • Weak communication among stakeholders.

OPPORTUNITIES	THREATS
• Current industries in which biorefinery concept could be applied (hasn´t yet). • Develop the link among the raw material suppliers, logistic and biorefineries • High volume and different types of waste in the region	• Not so much studies related to regional regulations in waste. • Not always the supply of services is secured (power, gas, water)

SWOT. KF3: RESEARCH AND INNOVATION

STRENGHTS	WEAKNESSES:
• Knowledge on biomass/renewables and residues • Existence of center of excellent but not on biomass specifically • Significant foreign investment	• Participation of stakeholders is missing • Financing framework not optimal • Public deficit >2%
OPPORTUNITIES	**THREATS**
• Exploitation of synergies among universities, centers of excellence, etc. • Promote event seeking to joint university interest and companies' needs. • Business accelerators mechanisms on R +D +I infrastructure established in the region but not for bio-based applications (Biorefinery Center is needed). • Interest in reconversion of chemical industry	• No clear criteria and lack of information of skilled workforce. Lack of communication channels among stakeholders. • Background knowledge not updated

SWOT. KF4: Market/Economic aspects.

STRENGHTS	WEAKNESSES:
• Some strong and consolidated markets (food, nutraceutical, agricultural, pharmaceutical, cosmetic, polymers, fibres and composites). • Chemical market relatively important (Chemical industrial sector very important).	• Lack of purchase agreements with stakeholders to secure biomass supply. • More cost-effective operations are needed. • Establishment of a biomass resource market is needed.

	• A market analysis is needed • A study of the region context would help to attract the establishment of new business • Lack of promotion of projects. • No platform providing information of market analysis.
OPPORTUNITIES	**THREATS**
• Setting up an adequate framework in the region. • Potential in the reconversion of chemical sector. • Skilled workforce might be available (Courses) in the region • Strong chemical industry holding a good position to develop an alternative business lines. Bio-based product in some cases could take advantage of the channels already in place for the chemical products market (biochemicals)	• Few interests from current chemical industry to produce biomass-based chemicals. • Few studies focusing on the demand of bio-products. • Low legal and technical support to promote the bio-based markets.

SWOT. KF6: PUBLIC AND INSTITUTIONAL SUPPORT/GOVERNANCE/POLICY FRAMEWORK.

STRENGHTS	**WEAKNESSES:**
• The region seems to be aware of the importance of having an advisory service for building up new industrial projects in the field of sustainable chemistry. • Establishment of monitoring procedures in the waste management by the region	• Lack of supportive body to promote investment, grant loans, support project implementation, promoting market research, promote to seek foreign investment/companies' establishment. • Low investment in the use of agri-food waste, neither pig slurry or

	chicken manure, sewage sludge, secondary plastic market. • No start-up financing program • No biomass related platforms • No synergies developed with other regions/knowledge transfer .
OPPORTUNITIES	**THREATS**
• Standardization bodies developed for bioproducts and products from waste. • Interest by region in the definition of a strategy to promote bio-based initiatives. • New types of incentives could be explored. • Possibility to replicate the monitoring procedures applied in waste management to other effluents from agr-industries, etc.	• Lack strategy or roadmap to promote bio-based initiatives in the region • Lack of political involvement in the definition of strategy • Insufficient infrastructure to bear additional logistic associated to bio-based products value chain

SWOT. KF7: FUNDING

STRENGHTS	**WEAKNESSES:**
• There are national and/or international private investment that have financed projects. • The region already has a collaboration network involving most of the stakeholders in the region. • Foreign investment in the region (1-3 % region GDP).	• Lack of information regarding possible financial schemes. • No optimal conditions for industries to access funding. • Lack of synergies between companies, no matchmaking events. • Not significant investment on bioeconomy.

• Financing thought bank is feasible for sustainable chemical production.	
OPPORTUNITIES	**THREATS**
• Financing thought bank seems the most feasible option for such initiatives currently. • Some publics resources can be used to leverage the necessary investments.	• Lack of awareness regarding the presence of bio-based companies in the region. • Lack of financing alternatives currently besides Bank financing • Lack of information • No program focusing on economy articulation.

SWOT. KF8: SOCIAL AND ENVIRONMENTAL ASPECTS

STRENGHTS	**WEAKNESSES:**
• Skilled workforce in the region but maybe not for biorefinery projects although renewables biomass degrees are available in the region (good chance skilled workforce) (SW)	• Current companies do not inform of their environmental or social impact so probably the end-user does not require it • Lack of awareness of consumer regarding the environmental and social impact in order to be able to compare with the fossil-based products currently consumed • No facilitating of government regarding waste regulation. • No specific policies/programmes regarding waste. • No green products policies.
OPPORTUNITIES	**THREATS**
• Promote bio-based products based on their environmental and social advantages (rural population fixed and rural development contribution)	• Time and marketing investment to raise awareness • Might be a lack of skilled workforce

2. SWOT ANALYSIS South Bohemia (CR)

SWOT. KF1: AVAILABILITY AND USE OF RESOURCES

STRENGHTS	**WEAKNESSES:**
• Significant agricultural biomass potential • Confirmed significant and available forestry potential • Available information regarding the biomass potential	• Need to complete the biomass potential assessment to determine the amount available for bioeconomy projects • The potential of some waste streams has not been accounted

• Sewage sludge has a significant potential in the region and is quite concentrated (centralised production in medium-large plants) • Some assessment has been performed regarding the waste streams in the region • Available information regarding the format in which biomass is supplied	• Further assessment needed to determine the potential to use the residues as alternative raw materials for other processes • Lack of information regarding the existing industrial applications that could apply biorefinery concepts • Biorefinery sector not yet developed in the region (starting from zero)
OPPORTUNITIES	**THREATS**
• Agricultural biomass could contribute to considerably increase the total biomass available in the region • Possibly significant potential on pulp and paper residues and by-products from the agri-food and farming sector and plastic fractions • Apparently existent market for the sewage sludge Possibility to define if new services are needed along the biomass value chain to adapt the format of the biomass currently supplied • Technology improvements could contribute to lower the amount of biomass currently consumed • Need to identify if there is an interest in the region to implement bioeconomy projects such as biorefineries • Assess possible biomass availability/Synergies with surrounding regions	• Agriculture biomass availability has not been yet assessed so it could be already used by other sectors • Some companies already use biomass and could increase their demand in the coming year therefore reducing the biomass available • The waste streams that have not been assessed until the moment could not be available for other applications • Need to find a company able to perform the format adaptation in order to be able to use it with some technologies • If no initiatives have been implemented so far in the region (biorefinery) it could be a sign there is no interest from the industrial sector • Even if the current plants consuming biomass don´t reach the biomass available potential foreign demand should be also analyse since it could greatly reduce the potential available

SWOT. KF2: INFRASTRUCTURE/INDUSTRIAL FACTORS

STRENGHTS	WEAKNESSES:
• Main transport infrastructure for the logistics of biomass raw materials already in place • Already biomass suppliers operating	• High quality supply of electricity should be ensured • Lack of monitoring mechanism to identify lack of supply (water and fuel)

• Existent infrastructure in the region to implement the final use of biomass applying biorefinery concepts • Existent network for the transport of the waste steam to industrial sites • Presence of chemical, polymer, farming and animal husbandry, agri-food and bioeconomy clusters • More than 60 % of the new launched start-ups survive the first 5 years	• Birth rate of starting firms in the region is below the average • Regional companies have not showed a strong interest so far
OPPORTUNITIES	**THREATS**
• Search for synergies with existing companies using biomass (share transport means, etc.) • Improve the waste stream logistics management and evaluate the possibility to adapt existing waste logistic centre to manage different biomass feedstocks than the ones they already handle • Possibility of setting up additional biomass logistics centres in the region • It would be desirable to have at the region's disposal a spread-out network of a freight train railway network in order to cover the main demand points of waste feedstock	• New investment in transport infrastructure railways and electricity supply grid might be needed to ensure high quality supply • The existent biomass suppliers might not have the capacity to cover additional plants biomass demand • Waste heterogeneity among the different collection sites • Currently business networking is not sufficiently developed • Difficulty to raise awareness amount industrial actors regarding the benefits and opportunities on the waste stream value chain

SWOT. KF3: RESEARCH AND INNOVATION

STRENGHTS	WEAKNESSES:
• Some supporting institution in the R&D field • High-level and vocational education in the field of residues • Existing of training programmes to upgrade workforce in some topics • Industry is involved to adapt the training or upgrade the skills • Awareness of the region regarding the importance of innovation and the expenditure on R+D+I	• Lack of professional expertise in this fields • Lack of training programmes currently in this topic • Lack of Centres of excellence • Currently to synergies between biomass projects and research or training programmes • Research centers low support to business in bioeconomy issues

	• Companies lack adequate information and knowledge about their own products and raw materials • Lack of information regarding the public and/or private expenditure on R+D+I
OPPORTUNITIES	**THREATS**
• Technical training should be introduced in the region so the region will account with skilled workforce needed in bioeconomy projects • Room for improvement on biobased technologies, applications, value chains in the regions • Upgrading high-level and vocational education in the field of bioeconomy • Develop synergies among training or research institutions and industry to adapt the professional profile needed • Companies could establish their company on an R&D&I campus • Set up a research center gathering and working on the transition strategy to bioeconomy. For instance, an space with common facilities for research and experimentation and support in finance and business development	• Still policies should be developed in the region in terms of investment in research and innovation • The level of knowledge and awareness can still be improved

SWOT. KF4: MARKET/ECONOMIC ASPECTS

STRENGHTS	**WEAKNESSES:**
• Existent biomass market • Security of the raw material supply seems to be ensured • Significant number of biomass suppliers in the area • Waste streams represent an alternative feedstock that could be used by different industries (biorefineries) for different applications. • Existent industry in the region in the food and nutraceutical sector, agricultural sector, pharmaceutical and cosmetic sector and	• Biomass market is not fully developed • Chemical sector is poorly developed in the region • Industry able to valorise the waste streams not strong in the region • The alternative use of waste as raw material has not been promoted strongly neither the use of biobased products by public entities • Market analysis needed for the biobased products that could be produced

polymers, fibres and composite materials sector. Wide range of bioaplications in the region • Even though the framework should be improved the current conditions represent a good starting point to with a potential for bioeconomy projects to be launched	• Strategy to attract the investment is missing • Lack of knowledge regarding the cost-effective increase biorefinery concept can involve • Lack of information about the potential clients or markets for the biobased products
OPPORTUNITIES	**THREATS**
• Search for synergies with the existent suppliers to reduce logistic cost along the value chain • Assess synergies with the existent sectors: food, agriculture, pharmaceutical and cosmetic and polymers, fibres and composite • Actions should be carried out to promote and strengthen networking with other regions and foreign market for the sale of waste • Plastic waste might be a potential alternative feedstock • Activities should be carried out to disseminate/promote information about the benefits of the use of waste as alternative feedstock	• Need to establishing purchase agreements in order to secure biomass supply chain in the long term • Biochemical sector would require an extra effort to firstly set the right framework • The framework to attract the establishment of new business has still not been set. • The number of factors leading to a right framework is significant: key factors such as infrastructure, workforce and transport availability, as well as economic, financial, technological, political and knowledge long-term stability which involves quite an effort and time to prepare in order to achieve it

SWOT. KF6: PUBLIC AND INSTITUTIONAL SUPPORT/GOVERNANCE/POLICY FRAMEWORK

STRENGHTS	WEAKNESSES:
• Existent regional R+D+I strategy. • Currently other sectorial strategies already include actions to foster transition towards bioeconomy • The region has specific regulations regarding the promotion of energy crops in marginal lands/energy crops in arable lands. • Other sectorial strategies already include concepts to support bioeconomy • Region is stimulating business innovation	• The bioeconomy concept is not strongly developed or implemented in the region • Regional strategy in R&D should be focused on promotion for new biobased business and define waste strategy • The procedures to assure the correct waste management are still not established

• Public authority aware of the potential and willing to contribute to improve the management and valorisation	• Lack of actions to promote the market uptake of new biomass feedstocks • No center currently grouping the knowledge and competences regarding waste streams (public integral service) • Research and innovation strategy for smart specialisation (RIS3) not existent • Lack of public body supporting industries in the design of business plans and risks assessments • No certification and/or standardisation bodies in the region • No investment programme for start-up currently in the region
OPPORTUNITIES	**THREATS**
• R&D strategy should be updated to integrate and focus on biomass feedstock exploitation • Use the "Roadmap to a Resource-efficient Europe" to identify the most effective and appropriate measures to be taken according to its particular features • Seek for synergies with existent supporting bodies to additionally provide support on bio-based economy • Efforts should be placed to improve market knowledge, transparency, analysis and advice to companies • Include in the R+D+I concepts driving the transition to bioeconomy and keep the work initiated in order to provide stability to the R+D+I system • New types of public incentives should be explored to promote bioeconomy projects (lower VAT rate on circular economy services, taxing extracted value instead of added value, actively using financial resources from guarantee and disposal funds, using financial resources from existing fiscal subsidy instruments) • Work with the entities in charge of licensing biobased projects to ease the process	• If there is not a specific body to ask in the region regarding the bioeconomy project implementation process it can create more uncertainties to the regional investors • If no national or regional certification schemes are in place probably look at European certification schemes which can seem more challenging for the regional stakeholders • Policies should be developed in the region in terms of investment in research and innovation and skills, market development and enhanced competitiveness and also engagement with stakeholders to promote bio-based initiatives like biorefineries • Lack of clear measures to control the correct management of waste leaves the door open to incorrect management • Heterogeneity of the waste makes difficult to establish a waste management strategy • Exiting obstacles to recover materials or waste material should be removed

• Participate in specific forum to build the right framework for such projects • Seek synergies with other sectorial strategies • Promote initiatives to increase the sustainability among the industries • Actions should be performed to facilitate the market uptake of waste feedstock • Seek for synergies with other regions: transferring of international commercial biotechnology experience • Efforts should be placed to promote the open business networking • Increase the supporting and promoting actions carried out by the clusters. Promote inter-cluster relations	to easy the process to the industries interested in promoting such projects Regulation and its mechanisms should be implemented at national level • Efficiency of the cluster to support and promote bioeconomy/bio-based initiatives is not optimal. Clusters activities and impact should be reinforced to achieve significant results • More support is needed to create a favourable entrepreneurial environment which might need to allocate public funds or other type of measures for the activation of investments in this field which might not be possible

SWOT. KF7: FUNDING

STRENGHTS	**WEAKNESSES:**
• Strong banking sector • Foreign investment is important in the region • Financing is available • Equity funds are available	• Financing is available but under very undesirable condition • Some public imbalances • Lack of roadmap to develop sustainable bioeconomy projects in the region • No public financing is available currently in the region for biomass projects
OPPORTUNITIES	**THREATS**
• Banking sector being strong in the region accounts with the means to finance bioeconomy projects • Actions should be carried out to attract foreign investors to finance bioeconomy projects • Effort should be placed to evaluate the possibility to finance bioenergy projects by venture capital or business angels' organisations • Even if biomass projects are not funded with public budget bioeconomy project could be	• If public entities have not allocated budget to promote biomass projects in the region might be understood by the sectors as if it was not a strategic priority in the region • Equity funds so far have not finance bioeconomy projects. • Synergies among stakeholders involve in the value chain are currently not well developed

funded so it might be worth exploring the possibility • It would be worth to explore the possibility that public resources could be used to promote bioenergy projects based on waste stream valorisation • Explore potential synergies with other public financing lines in your region, neighbouring regions • Creation of network to gather all actors involve in the value chain (industry, technology suppliers, academia and research, financing organisations) to develop a roadmap	

SWOT. KF8: SOCIAL AND ENVIRONMENTAL ASPECTS

STRENGHTS	**WEAKNESSES:**
• Lack of skilled workforce required for the implementation of a biomass supply chain and its conversion • Social acceptance is not a limiting issue in the region • Industrial development is communicated to the general public by different channels (specialized magazines, TV news, internet, etc.) • Currently the population gets information regarding sustainable consumption, plastic disposal or CO_2 emissions decrease by different means. • General public considers that the secondary and tertiary sectors are already working to reduce GHG emissions • Different entities provide information regarding environmental aspects required by the government	• Reduced percentage of the population employed in the primary sector • Relevance of the secondary sector in the region • General public considers the primary sector is not promoting or involved sufficiently in the GHG reduction strategy therefore not joining at the moment the transition towards more sustainable practices in the bioeconomy framework • Lack of information regarding the inclusion of to social inclusion aspects or gender issues in the agricultural strategies
OPPORTUNITIES	**THREATS**
• Skilled workforce could be available in the surrounding regions which could be a starting point to initiate synergies with other regions	• Agricultural sector might need an additional effort in order to promote bioeconomy initiatives

• Carry out actions to promote the awareness on circular economy and bioeconomy • Keep effort to ensure end-users acceptance • Different channels can be used to raise awareness and promote bioeconomy in the region	• Lack of innovative channels to achieve a higher impact when promoting bioeconomy in the region

3. SWOT ANALYSIS Nitra (SK)

SWOT KF1: AVAILABILITY AND USE OF RESOURCES

STRENGHTS	**WEAKNESSES:**
• Large variety of agricultural biomass, including wheat straw, barley, rapeseed straw, oil seeds, corn stove/grain maize, sugar beet. • The region is already working with three different feedstocks: agricultural and forest waste, energy crops and municipal waste (separation, composting).	• Biomass only to bioenergy purposes. • Missing production plans. • Difficulties to mobilize resources. • Difficulties with waste treatment.
OPPORTUNITIES	**THREATS**
• Nitra has a significant biomass potential, which could be explored in terms of available agricultural biomass resources.	• Biomass processing sector not strong enough in the region. • Low development of technologies related to biomass value chains • Few biogas plants have been built during the last years. • Retail chains continued to import foodstuffs from abroad, which created conditions for Slovakia 's growing dependence on imported commodities. • A thorough analysis of the forestry biomass potential have not been carried out.

SWOT KF2: INFRASTRUCTURE/INDUSTRIAL FACTORS

STRENGHTS	WEAKNESSES:
• Installed electrical capacity (11,19 MW) represents the 11,55 % of the installed power of all biogas plants in Slovakia. • In this regard, the region already has the main transport infrastructure for the biomass logistics. •	• Still lack of optimisation in the supply chain. • Under development of biomass logistics centers
OPPORTUNITIES	**THREATS**
• Nitra region has 15 biogas plants operating, which represents 13,51 % of the total number in Slovakia. • It already exists biomass transport companies that can be transition into new business models related to bioeconomy.	• New investment for transport infrastructure modernisation is needed. • Lack of R&D sector prepared to face bioeconomy issues.

SWOT KF3: RESEARCH AND INNOVATION

STRENGHTS	WEAKNESSES:
• Currently, there are several research institutes, clusters, industrial sites and universities working in some lines of bioeconomy: - Universities (2 in region) - Research Centre AgroBioTech (SUA) - Bioeconomy cluster - National Agricultural and Food Centre - Biorefinery (Enviral) - Agroenergy Association	• It does not exist and innovation strategy for smart specialisation (RIS3). • Still few farmers and entrepreneurs in agricultural field.
OPPORTUNITIES	**THREATS**
• Agricultural producers (especially young farmers and small farms) entities identified as potential innovators.	• Lack of information regarding the public and/or private expenditure on R+D+I.

SWOT KF4: MARKET/ECONOMIC ASPECTS

STRENGHTS	WEAKNESSES:
• Taking advantage of the already existing "Association for Separate Waste Collection of the Ponitrie Region". • More than 60% of them survive the first 5 years. •	• The birth rate of starting firms in the region is below the average. • Reinforcing the transferability of commercial biotechnology experience out of the region.
OPPORTUNITIES	**THREATS**
• Opportunity to set synergies with the existing financing lines. • The support programmes of the Ministry of Agriculture and Rural Development of the Slovak Republic for small, medium-sized and big food enterprises, could help to increase the share of the representation of Slovak products in the domestic market.	• Low decentralisation of activities leading to improve the market knowledge. • Lack of SMEs developing activities in innovation field.

SWOT KF6: PUBLIC AND INSTITUTIONAL SUPPORT/GOVERNANCE/POLICY FRAMEWORK

STRENGHTS	WEAKNESSES:
• The region has specific regulations regarding the promotion of energy crops in marginal lands and energy crops in arable lands. • Current agricultural feedstock regulation could contribute to increase biomass production in biorefineries or sustainable chemical sector. • Profitable value chains for small-scale farmers.	• Local government (urban and rural municipalities) not involved the development of new bio-based value chains. • Innovative small and middle entrepreneurs and businesses are scarcely represented in the new bio-based value chains. • Lack of active civic society with awareness to bioeconomy. •
OPPORTUNITIES	**THREATS**

• Some activities related to bioeconomy are identified in the strategic documents at the national level • Some activities related to bioeconomy included the Programme of Economic and Social Development of the Nitra region (2016-2022).	• It does not exist a bioeconomy strategy at regional level. • The region does not have competence nor enough instruments to implement new bio-based or biorefineries.

SWOT KF7: FUNDING

STRENGHTS	**WEAKNESSES:**
• Active LAGs and PP partnerships (LEADER) • Municipal budget (local governments) • Environmental fund of the SR • Rural Development Programme of the SR (2014-2020) • Operational Programme Quality of Environment for the period 2014 – 2020 • Operational Programme Research and Innovation (2014-2020) • Operational Programme Quality of Environment for the period 2014 – 2020 • Operational Programme Research and Innovation (2014-2020) • The region is in a good position for providing direct or intermediate financing for the development of a sustainable chemical industry. If a multiplicative effect of the resource is sought potential synergies should be explored: with the financing lines set up by the national Government and/or the European Institutions in the region or neighbouring regions and with the private finance sector. or the European Institutions in the region or	• Not very consolidated lending instruments in banking sector. • synergies should be explored: with the financing lines set up by the • Under-explored funding synergies with national Government, European Institutions and neighbouring regions

neighbouring regions and with the private finance sector.	
OPPORTUNITIES	**THREATS**
• Good position to provide direct or intermediate financing for the development of a sustainable chemical industry. • Foreign investment is quite active in the region.	• Funding conditions are not optimal to boost the emergence of new entrepreneurs.

SWOT. KF8: SOCIAL AND ENVIRONMENTAL ASPECTS

STRENGHTS	**WEAKNESSES:**
• It already exists a National Strategy on Atmosphere Protection (until 2030). • Programme on Emission Reduction is available in the country. • Some communications related to sustainable consume and environmental are included in some online platforms	• Few channels available to disseminate information related to responsible and sustainable consumption, plastic disposal and/or CO2 emission reduction at regional level.
OPPORTUNITIES	**THREATS**
• Lines related to social inclusion or gender issues in the regional agricultural strategies and agricultural plans, are under discussion. • about social agriculture (regarding new Act on social entrepreneurship and national project on its support in regions since 2018). • Existing platforms could be used to spread environmental issues in bioeconomy field.	• Diffusion channels for promoting the raise of environmental awareness are not strong enough.

4. SWOT ANALYSIS Lviv (UR)

SWOT. KF1: AVAILABILITY AND USE OF RESOURCES

STRENGHTS	**WEAKNESSES:**

• Potential agricultural biomass resource • Large forestry agriculture surfaces • Agri-food potential in the region • Strong livestock farming sector which could produce large quantities of residues still unexploited and concentrated • Strong chicken farming in the region concentrated Some information on biomass resources potential • Biomass demand of the current consumers might decrease due to technology improvements	• The potential available has not been assessed • Waste production and availability has not been assessed • Lignocellulosic waste applications have only been assessed at lab or pilot scale for different applications • No source-separation disposal system in general, only for packaging waste • The existing industrial applications that could apply biorefinery concepts have not been yet identified • Lack of information regarding the format in which biomass is currently supplied • Biorefinery sector must be developed in the region
OPPORTUNITIES	**THREATS**
• Seems that biomass could be available in the region or used by existing industries but is still available for other uses • Still an important biomass potential remains unused • Lignocellulosic waste is mainly used for energy purposes • Sewage sludge is mainly landfilled • Large biofuel installations need reconversion could decrease their demand	• Not all the information needed to evaluate biomass potential might be available • Region is using currently the biomass for energy purposes • New plant could lead to a resource (biomass/waste) availability decrease

SWOT. KF2: INFRASTRUCTURE/INDUSTRIAL FACTORS

STRENGHTS	**WEAKNESSES:**
• Main transport infrastructure for the logistics of biomass raw materials already in place • Already existing biomass transport companies • Infrastructure in the region to implement the final use of biomass applying biorefinery concepts • Infrastructure in place connecting waste generation sites with industrial sites • Good railway network	• No logistic centers operating in the region • Electricity grid quality should be improved • Water supply bottlenecks • Reluctance to share information and start cooperative actions among companies • Lack of basic indicators to measure the entrepreneurial skills and success in

• Presence of chemical, polymer, farming and animal husbandry, agri-foods and bioeconomy clusters set a good starting point for networking • Industrial parks network operating in the region • Industry does contribute someway to design of adapt the CV • Some matchmaking events have been organized. Further effort should be made in this sense	the region that would allow to identify the need of measures implementation • Survival rate of start-ups is very low so effort should be placed to identify the main reasons and set the required measures to change this tendency
OPPORTUNITIES	**THREATS**
• Possibility of setting up additional biomass logistics centres to reduce transport distance • Seek for synergies with the suppliers and transporters already operating in the area • Include the improvement in the electricity grid and water supply in the sectorial strategy of the region	• Additional information on biomass logistic centres and transport infrastructure might be needed or improved • High quality supply of electricity/water should be ensured in the region.

SWOT. KF3: RESEARCH AND INNOVATION

STRENGHTS	**WEAKNESSES:**
• Courses or training sessions are organized in the region aiming to develop new or upgraded workforce • Existing specialization post-graduate/master's degrees can contribute to provide skilled workforce for the bioeconomy projects in biomass issues • Large skilled workforce in biomass R&D would allow to cover this part of the value chain • Currently industry contribute to adapt the CV design to connect the academic and industry needed and interests. • Research community quite significant in the region	• Industrial sector is not the most important sector in the region • No training actions on waste are currently available in the region • Deeper integration of university degreed needed • Lack of information to evaluate if the existent workforce meets the requirements that different bioeconomy projects would request • Currently the professional needed to develop bioeconomy projects will need to be found in other regions • No Centres of Excellence in the region
OPPORTUNITIES	**THREATS**
• Increase the offer or training and education programs in this topic	• Currently the region might not account with the skilled workforce

• Promote the training programs among the existent workforce • Seek to synergies with other regions to transfer knowledge and skilled workforce • Promote the mechanisms so that industry and research cooperate more intensively to train the workforce and research can be aligned with the companies' interest • Region should develop specific courses and training programmes to address the gap of professional expertise required in the bioeconomy projects	needed for bioeconomy projects implementation • Need to develop specific courses and training programmes to address the existing gaps • Vocational education and training are not widespread among the working population

SWOT. KF4: MARKET/ECONOMIC ASPECTS

STRENGHTS	WEAKNESSES:
• Existing wastewater treatment plant but with significant capacity • Raw material security is a key point in any initiative dependent on biomass as raw material for the process which does not appear to be a problem in the region • Food and nutraceutical products, agricultural products, pharmaceutical and cosmetic products and polymers, fibres and composite materials market are fairly developed in the region which can be seen as a good starting point for bioeconomy projects. • Polymers, fibres and composite materials market are the most interested sector on biorefinery concepts • Some public and private companies in the region are very interested in biorefinery products' market	• There are no fertilizer manufacturing sites in the region or in the neighbouring regions • Biomass market is not fully developed in the region so the introduction of the biorefineries' activities will need development to improve cost-effective. • Actors involved in the whole sustainable chemicals value chain do not seem to look at the biomass resource market as a promising investment at this moment which might make difficult to reach agreements and involve them in the supply chain. • Lack of information about the potential clients or markets for the bio-based products • Lack of policies related to biorefineries or bioeconomy should be implemented in the region as an enforcement measure • Knowledge regarding biorefinery products applications is quite limited (articles conferences)

OPPORTUNITIES	THREATS
• Long-term supply agreement might be appealing for biomass suppliers. Stakeholders preferences should be analysed. • Activities should be carried out to motivate biomass suppliers to get involve in the supply chain or to attract investments from organisations outside of the region • Green products associated policies will be implemented in the region in the close future which might set a good framework for biorefinery development. • Efforts should be placed to increase the existing knowledge regarding the biorefinery products possible applications in different sectors with high potential in the region	• Lack of information regarding the wastewater treatment plant potential • Raw material security should be further analysed to avoid overestimation of the amount available • The plant should still establish purchase agreements with stakeholders to secure the supply in any case and consider the agreement will need to be reached yearly in some cases which involved a risk that should be considered • The biobased products acceptance should be studied in the region

SWOT. KF6: PUBLIC AND INSTITUTIONAL SUPPORT/GOVERNANCE/POLICY FRAMEWORK

STRENGHTS	WEAKNESSES:
• Supporting institutions can exist the biomass field for the different parts of the value chain which can be helpful to design and develop bioeconomy projects • Existence of a certification and/or standardisation body can be helpful to evaluate bio-based products requirements • Regional government institute covers many of the principal aspect to promote bioeconomy projects but should focus more in detail on circular economy/bioeconomy and sustainability topics. • Certification and standardization bodies in place in the region • University accounts with a tailored unit for supporting start-up companies in the incubation and acceleration of new businesses which can give a boost to bioeconomy projects in their initial phase	• Existent regional strategy in R&D should focus on the bioeconomy concept promotion • Currently there isn´t a research and innovation strategy for smart specialisation • Further effort should be allocated to include the bio-based and circular economy concept in the campus • Currently there isn´t a body or agency at regional level that can inform about the raw materials/waste information which would be key to perform the availability potential of such resources • Lack of integrate service to support companies on risk assessment, business plan design, transition to biobased economy • No start-up program in the region with special financing program so they have to compete with other companies which might discourage new and sustainable technologies start-ups to apply.

	• Lack of information regarding the public and/or private expenditure on R+D+I which might need to be increased to address the promotion of bioeconomy initiatives
OPPORTUNITIES	**THREATS**
• Efforts should be placed to promote the market uptake of new biomass materials and bio-based products • Actions should take place at regional level to create awareness regarding the potential of alternative raw materials • Synergies and networking actions should increase in the region to explore the potential bioeconomy projects that could be developed in the region • Region should continue to participate in events focusing in this topic in order to transfer knowledge and potential development. • Organize sectorial events to promote Circular thinking • Actions should be planned to foster synergies among sectors, among companies of the same sector and other regions. • Clusters should increase their effort to contribute to promote and support bioeconomy projects. Actions should be performed to reinforcement the inter-cluster relations	• Lack of basic information on raw materials availability and water supply can discourage possible promoters and investors • Lack of support from a public service regarding aspects such as the financing alternatives or the risk assessment can discourage possible investors and project promoters • Regional Government institute or research body does not cover currently the circular economy/bioeconomy or sustainability topics which might be understood as not priority area. • So far, the action of the cluster, specially the bioeconomy cluster has not resulted on the implementation of bioeconomy projects in the regions • Actions performed until now have not contributed enough to achieve a good level of communication among stakeholders in the region. An assessment should be performed to evaluate the best alternative to address this drawback.

SWOT. KF7: FUNDING

STRENGHTS	**WEAKNESSES:**
• Some public resources can be used to promote bioeconomy projects • Foreign investment is important in the region so action should be carried out to attract this type of funds by organizing multilateral meetings, awareness campaigns, stands in	• Financing is available but under very undesirable conditions • Existent public imbalances at region level (public deficit lower than 2% and a high debt ratio.) • Financing through the bank has had some limitations

forums or fairs to promote projects in this fields in the region • Existent collaboration network is already in place and collaboration with this entity should be explored to foster and support bioeconomy projects implementation • Another possibility to finance bioeconomy project would be to apply to subsidies or grants in the region dedicated to this topic • Private and public EIB/EIF financial intermediaries established in the region therefore it represents an additional financing scheme that should be explored	• No bioeconomy project has yet been established in the region • venture capital, investment equity funds or microfinancing is not active in the field of sustainable industry in the region • No regional service to support industry or investors regarding a project financing options
OPPORTUNITIES	**THREATS**
• Possibility to combine funds within the region or neighbouring regions or European funds • Banking financing is starting to flow again in the region and could be an option to explore • National and/or international private investment/equity funds could be explored since they have financed projects in the region related to other topics	• Current financing conditions can discourage foreign or national investors • Regional imbalance regarding the public budget might discourage possible investors • Bioeconomy projects might not be financed due to the lack of interconnection among the different public, private and financing stakeholders

SWOT. KF8: SOCIAL AND ENVIRONMENTAL ASPECTS

STRENGHTS	**WEAKNESSES:**
• Large skilled workforce in biomass related topic is available in the region • Population is updated regarding new industrial developments in the region, new companies, etc by different means. • Specialized magazines could be a good platform for the promotion of bioeconomy projects among others • The population gets information regarding environmental issues such as GEI emissions and plastic disposal	• Biobased products acceptance has not been assessed in the region • Skilled workforce needed to develop bioeconomy project might not be available in the region • Responsible/sustainable consumption is not been reported to the general public • No existing mechanisms in the region to communicate concerns about environmental aspects

	• Based on the public opinion service sector is making the biggest effort to reduce the environmental impact (GEI emissions) • No lines currently related to social inclusion or gender issues in your regional included in agricultural strategies or plans
OPPORTUNITIES	**THREATS**
• Environmental information should include sustainable consumption aspects related to biobased products • In order to promote biobased products TV news, newspapers and specialized magazines should be used based on the population preferences	• Biobased products benefits compared to fossil fuel-based products have not been promote in the region so there isn´t yet an awareness in this sense

5. SWOT ANALYSIS Southern Great Plain (HU)

SWOT KF1: AVAILABILITY AND USE OF RESOURCES

STRENGHTS	**WEAKNESSES:**
• Agriculture is the biggest supply sector (providing approximately 90% of the biomass). • Mainly agricultural wastes and by-products • Production of 0,13 million m3 (12% of the Hungarian production) of woody biomass by-products /wastes. • Availability of manure for fertiliser or biogas production	• Logistic issues can hamper the implementation of biomass valorisation technologies • Distance to the transformation site (need to be not more than 60-80 km away from the biomass sources) • Lack of companies capable of processing and converting waste and by-products into high added value

• whey used for food industry, animal feeding; • wastewater used for composting additive, biogas production; • wastes of edible oil production and sugar production as input material to biogas plants • almost any type of biomass wastes from food industry can be used in biogas plants to produce biomethane	
OPPORTUNITIES	**THREATS**
• 12% of the Hungarian forests are situated in the region • Availability of waste resources unexploited. • Several types of waste available and identified in the region (waste data available in EUROSTAT database).	• Lack of bioeconomy strategies or programme under which implement lines to boost biomass use in the region • Lack of bioeconomy strategies or programme under which implement lines to boost waste use in the region •

SWOT KF2: INFRASTRUCTURE/INDUSTRIAL FACTORS

STRENGHTS	**WEAKNESSES:**
• Geographically well located to facilitate a high quality and efficient raw materials and products transportation. • Existing infrastructures linked to the agricultural sector.	• Need of improving of the freight train railway network to distribute local biomass production. • Need of improving of the freight train railway network to distribute local biomass production. • Quality supply of electricity and fuel in your region are very important to boost the establishment of a sustainable chemical industry and biorefineries.
OPPORTUNITIES	**THREATS**

• The region is apparently well supplied in terms of water.	• Not being able to ensure a 100% biomass supply to biorefineries or potential biomass end users

SWOT KF3: RESEARCH AND INNOVATION

STRENGHTS	**WEAKNESSES:**
• Research and Innovation Strategy for Smart Specialisation – RIS 3 – (2014-2020) for the Southern Great Plain Region of Hungary (2013)	• No funding available to promote academic research in waste field. • No funding available to promote academic research in waste field.
OPPORTUNITIES	**THREATS**
• In the regional RIS 3 a clear commitment is shown with the inclusion of some lines related to the utilisation of biomass for the production of bio-based materials and energy purposes. • Several strategies are already developed or planned to promote Research and Innovation: - National Energy Strategy 2030 (Ministry of National Development, 2012). - Hungarian Renewable Energy Utilisation Action Plan 2010-2020 (Deputy Secretariat of State for Green Economy Development and Climate Policy for the Ministry of National Development) - Hungary's National Energy Efficiency Action Plan until 2020 - National Sustainable Development Strategy - National Forestry Strategy - National Climate Change Strategy and Action Plan for development of district-heating - National Water Strategy	• Although in the regional RIS 3 appears references to the use of biomass to produce bio-based materials and energy purposes there are no details related to the implementation stage. • There are no specific Research and Innovation strategies to promote bioeconomy • There are no public initiatives to promote waste research to build up new value chains

SWOT KF4: MARKET/ECONOMIC ASPECTS

STRENGHTS	**WEAKNESSES:**

• Large agroindustry in the region. • Some agri-food innovations are established in the region. • Agricultural market in the region is a strong sector.	• There is no specific funding to promote biomass use in the framework of bioeconomy. • There is no specific funding to promote waste promotion in the framework of bioeconomy.
OPPORTUNITIES	**THREATS**
• Existing of an "Economic Development and Innovation Operational Programme" to promote market actions. • By-products generated by agroindustry represent an interesting line to exploit	• Economic hurdles and barriers linked to current regional legislation. • Most of agricultural products commercialised by regional actors are not products with high added value

SWOT KF6: PUBLIC AND INSTITUTIONAL SUPPORT/GOVERNANCE/POLICY FRAMEWORK

STRENGHTS	**WEAKNESSES:**
• Existence of a "National Energy Strategy 2030" and a "National Forestry Strategy" under which it could. • Existing initiatives and funding and funding at national level could be the basis to support some specific action in waste field. •	• No specific bioeconomy initiatives neither at regional level nor at national level. • Insufficient policy surrounding support. • Lack of clarity of the legal situation and policy background. •
OPPORTUNITIES	**THREATS**
• It could be taken advantage from the already existing initiatives for funding existing at national level. • Increasing awareness about bioeconomy in some specific sectors.	• No specific lines or strategies from regional public bodies developed to promote biomass uses. • Raising awareness on bioeconomy concepts, and improving biomass uses -as first step-, should be considered as a critical point of intervention. • Long administrative periods to approve procedures of new technologies related to waste.

	• Long administrative periods to approve procedures of new technologies related to waste.

SWOT. KF7: FUNDING

STRENGHTS	**WEAKNESSES:**
• Existing agricultural funding at national level. • Agricultural lines at academic level receiving funding that could be a bridge towards	• There are no funding institutions focused in bioeconomy. • Not enough promotion of high added value agricultural products through funding instruments at national level.
OPPORTUNITIES	**THREATS**
• Many actors in the bioeconomy field are already participating in general R&I programmes and schemes at the national and international level. • The strength of agroindustry by-products sector in the region could represent a great opportunity to attract funding to create new jobs.	• No specific funding to biomass uses at regional level. • Scarce of regional funding to boost new agricultural end products.

SWOT KF8: SOCIAL AND ENVIRONMENTAL ASPECTS

STRENGHTS	**WEAKNESSES:**
• Sectors with experience biomass uses. • It does exist publications and reports at national level related to responsible/sustainable consumption. • It does exist publications and reports at national level related to plastic disposal. • It does exist publications and reports at national level related to CO2 emission reduction. •	• Lack of awareness of bioeconomy concept in society. • There are no mechanisms in the region to communicate concerns about environmental aspects.
OPPORTUNITIES	**THREATS**

• Several agricultural programs at academic level that can be used to build up "bioeconomical" studies. • In the region exist several conferences and events related to biomass utilisation, agriculture and food industry, that could be used to create synergies to promote bioeconomy knowledge transfer.	• It does not exist publications related to sustainable consumption, plastic disposal nor CO2 emission reduction.