

Qualitative analysis of preliminary priority areas in the Smart
Specialization process in the Republic of Kosovo

Final Report

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List of Abbreviations

AI Artificial intelligence

CSO Civil Society Organization

EDP Entrepreneurial discovery process

FDI Foreign Direct Investment

GDP Gross domestic product

GVA Gross value added

IT Information Technology

ICT Information and Communication Technology

IoT Internet of Things

LQ Location quotient

NACE Nomenclature of Economic Activities (or in French; classification des activités économiques)

R&D Research and development

RES Renewable Energy Sources

1. Executive Summary

As part of the activities foreseen for the EU accession agenda, since 2018, the Government of Kosovo has been working to develop a Smart Specialization Strategy. After completing the quantitative analysis of the economic, scientific and innovative potential of the economy, Kosovo has continued with the phase of qualitative analysis, in accordance with the methodology and guidance provided by the Joint Research Center (JRC).

Smart Specialization is expected to be of high significance for economic growth and economic growth potential, unlocking the innovation and competitiveness potential in specific priority areas.

Kosovo has been growing at a steady rate for the past decades but continues to need important reforms to transition from a demand driven growth, to increase job creation and to advance the European Union integration agenda.

In the S3 design process of Kosovo, a quantitative analysis on the economic and innovation potential of the country has been implemented and contributed to the identification of 5 preliminary priority areas or sectors: 1) Information and Communication Technology, 2) Food Processing Industry, 3) Creative Industries, 4) Green Energy, 5) Wood Processing Industry. Within that context, the qualitative analysis represents an in-depth insight on those preliminary priority sectors, reflecting views from relevant stakeholders and contributing to the subsequent phase of the EDP.

Based on a specific methodological approach, qualitative data have been collected through an online survey and in-depth interviews with main stakeholders operating in each specific priority sector. The qualitative mapping process began in November 2021 and was finalized in May 2022. Within the process, 266 responses have been collected from the online survey and 77 in-depth interviews have been conducted. With the findings, more in-depth descriptions of the sectors have been included and integrated with main findings from other studies, official statistics, and quantitative analysis results.

For each priority sector, the potential of the sector has been investigated, as well as main development opportunities and challenges as reported by stakeholders.

Overall, the findings suggest the existence of structural challenges mainly related to the skills mismatch offered by academia and the needs of businesses operating in these sectors. Another finding points to the lack of adequate funding for R&D activities, lack of infrastructures, and lack of cooperation with academia for R&D activities.

While, main opportunities of growth and innovation stem from the sectors' potential for exports and proximity to European markets.

2. Qualitative Analysis as a step of the S3 design process in Kosovo

Smart Specialization is a contemporary set of economic transformation agendas as means to tackle the challenges which the European Union and the region faces in terms of innovative development. It focuses and emphasizes on research and strategic planning in order to identify potential strengths and weaknesses in specific industries.

A Smart Specialization Strategy prioritizes domains, areas and economic activities where countries have a competitive advantage or have potential to generate knowledge-driven growth and to bring about the economic transformation.

Designing a strategy for smart specialisation should be done around the following key principles¹:

- Smart specialization is a place-based approach, so it is dependent on assets and resources available to countries and on their specific challenges in order to identify development and growth opportunities;
- Such a strategy also requires countries make choices for investment, meaning that they support only a limited number of well-identified priorities for knowledge-based investments and/or clusters by focusing on competitive strengths;
- Setting priorities is done through an inclusive process of stakeholders' centered on "entrepreneurial discovery";
- The strategy embraces a broad view of innovation, as it supports technological, practice-based and social innovation;
- Lastly, it includes a sound monitoring and evaluation system as well as a revision mechanism for updating the strategic choices.

Kosovo registered in the Smart Specialization Platform (S3P) in September 2018 and since then the country has been implementing a roadmap for the definition of a National Strategy for Smart Specialization, with the assistance of the European Commission and according to the JRC methodological framework for Smart Specialization in the EU Enlargement and Neighborhood countries.

Kosovo through the establishment of a Smart Specialization Strategy will be able to tackle some of the country's economic and development struggles. Allocating funds in order to promote local innovation in industries that have an edge within specific sectors, will positively impact the country's overall development as a participating shareholder in the global competitive market. Kosovo has started making progress in identifying the potential of certain sectors through qualitative and quantitative analysis, launching the first stage of this policy design.

¹ Joint Research Center. <https://s3platform.jrc.ec.europa.eu/en/what-we-do>

The identified sectors should then be supported by targeted policy interventions towards a knowledge-based economic transformation. In general terms, the process that leads to the selection of priority sectors comes from a very gradual process that begins with analytical evidence on sectors with potential (quantitative analysis) and continues with further analysis through the qualitative analysis, to contribute for the following phases of discussions and stakeholder participation (in the EDP).

3. Summary of Quantitative Mapping Results

In 2021, under the supervision of the JRC a quantitative mapping has been carried out by an independent expert with the aim of assessing potential priority domains based on economic indicators.

The mapping of the economic potential uses economic data on employment, turnover and average wages. The analysis has mapped the economic potential of the Kosovar economy, providing insights for a first identification of those economic and productive areas that might be potentially considered in the selection of the priorities for the Smart Specialization Strategy of Kosovo.

The mapping utilized a dynamic analysis to identify industries with emerging economic strength and industries with current economic potential.

The following criteria were used to identify industries with current economic strength:

- Critical mass ('size') measured by the share of employment in that industry in the country
- Specialization: measured using Location Quotients (LQs), which are defined using the number of employees or turnover in industry in Kosovo compared to benchmark countries
- Average wages ('productivity'): average wages per employee (calculated as the ratio of Total wages and Number of employees)

For these criteria different threshold values were determined based on other studies and then calibration based on the Kosovo economy.

For mapping the innovation potential, ideally national innovation survey data should be used, however, such data are not available for Kosovo as there was neither a recent innovation survey, nor an R&D survey. Instead, the study combined results from different data sources including both national and international data sources, including data on intellectual property rights, aggregate innovation activities, and export performance.

In terms of innovation, the quantitative analysis results from the Balkan Business Barometer suggest that significant innovation activities for product innovators are observed in:

- Manufacturing
- Wholesale and retail trade;

- Accommodation and food service activities
- Information and communication

Whereas, significant innovation activities for process innovators are observed in:

- Manufacturing
- Construction
- Wholesale and retail trade
- Accommodation and food service

On another note, the quantitative analysis results in terms of innovation based on the World Bank Enterprise Survey 2019 suggest that the following industries have a higher share of innovators.

- Food
- Textiles
- Chemicals
- Plastics & rubber
- Fabricated metal products
- Furniture
- Services of motor vehicles
- Wholesale
- Hotels and restaurants
- Transport
- IT

The quantitative analysis framework assessed the economic and innovation potential of Kosovo compared to a number of benchmark countries, including Bosnia and Herzegovina, Bulgaria, Croatia, Greece and North Macedonia. The analysis has identified 9 industries with a current economic potential which included a. Wholesale of food, beverages and tobacco, and b. Software publishing. In addition, the analysis has identified 18 industries with an emerging economic potential.

Current Economic Potential	Emerging Economic Potential
NACE 236 Manufacture of articles of concrete, cement and plaster	NACE 102 Processing and preserving of fish, crustaceans and molluscs
NACE 412 Construction of residential and non-residential buildings	NACE 203 Manufacture of articles of paper and paperboard
NACE 421 Construction of roads and railways	NACE 232 Manufacture of refractory products

NACE 461 Wholesale on a fee or contract basis	NACE 235 Manufacture of cement, lime and plaster
NACE 463 Wholesale of food, beverages and tobacco	NACE 242 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
NACE 581 Publishing of books, periodicals and other publishing activities	NACE 259 Manufacture of other fabricated metal products
NACE 582 Software publishing	NACE 264 Manufacture of consumer electronics
NACE 611 Wired telecommunications activities	NACE 325 Manufacture of medical and dental instruments and supplies
NACE 619 Other telecommunications activities	NACE 422 Construction of utility projects
	NACE 429 Construction of other civil engineering projects
	NACE 464 Wholesale of household goods
	NACE 469 Non-specialized wholesale trade
	NACE 504 Inland freight water transport
	NACE 582 Software publishing
	NACE 612 Wireless telecommunications activities
	NACE 691 Legal activities
	NACE 743 Translation and interpretation activities
	NACE 822 Activities of call centers

Selected preliminary priority sectors subject to qualitative analysis

Kosovo's real GDP has increased on average by 4.9% over 2015-2019. Year 2020 was characterized with a negative growth mainly due to social distancing measures taken to combat the surge in COVID-19 infections. However, there has been a strong rebound in 2021, where real economic growth was 10.5%². This full recovery was supported by private consumption, record growth in exports (especially exports of goods), a rebound in diaspora visits, strong credit growth, and a significant fiscal stimulus through economic recovery measures issued by the government. As the economy recovered, the fiscal balance also showed improvement. Nonetheless, the economy was characterized with high inflationary pressures by the end of 2021, driven primarily by increases in import prices.

² Kosovo Agency of Statistics, National Accounts 2021.

Table 1 Main Macroeconomic Indicators. Source: Kosovo Agency of Statistics and Central Bank of Kosovo

Indicator	Unit of Measurement	2017	2018	2019	2020	2021
Real GDP ³	y-o-y % growth	4.8%	3.4%	4.8%	-5.3%	10.5%
Current Account Balance ⁴	% of GDP	-7.0	-11%	-5.7%	-7.0%	-8.8%
FDI ⁵	y-o-y % growth	16.1%	6.6%	-6.4%	35.8%	20.1%
Remittance Inflows ⁶	y-o-y % growth	9.9%	5.5%	6.4%	15.1%	17.7%
CPI (annual average) ⁷	%	1.5%	1.1%	2.7%	0.2%	3.3%
Exports of Goods and Services ⁸	% of GDP	27.2%	28.4%	29.5%	21.7%	33.5%
Imports of Goods and Services	% of GDP	49.6%	56.1%	56.6%	55.3%	61.9%
Unemployment ⁹	%	30.5%	29.6%	25.7%	25.9%	25.8%*
Employment ¹⁰	%	29.8%	28.8%	30.1%	28.4%	29.3%*
Public Debt	% of GDP	16.4%	16.9%	17.5%	22.4%	21.9%

In terms of trade balance, Kosovo has experienced a robust growth in exports of services (i.e. travel, ICT, Call Centers, Advertising etc.) over the years, but the economy is still characterized with a low export base and with a high goods trade deficit, consequently leading to a negative current account balance.

Remittance inflows have been a significant contribution to disposable income and have therefore, affected consumption to a great degree. Remittance inflows have marked a double digit growth in 2020 and 2021, despite the pandemic situation in the European countries, from where most of the inflows come from.

Foreign Direct Investments have also had a positive growth over the years (except in 2019), however, they are mainly directed in non-tradable sectors, with a great concentration in real estate properties (75% of total FDI on average for 2017-2021).

Kosovo's unemployment rate is one of the highest in Europe, standing at 25.8%. Despite, this rate marking a gradual decline over the past years, it continues to be high especially among the young population. Based on the latest Labour Force Survey 2021 Q1, 48.6% of young people aged 18-24 are unemployed and the most pronounced unemployment is among females. A significant proportion of the young population is unemployed (46.4%) and youth unemployment among females is higher (53.5%) compared to males (46.1%) (Kosovo Agency of Statistics, 2021 Q1).

³ Kosovo Agency of Statistics, National Accounts 2021.

⁴ Central Bank of Kosovo. Current Account Time Series.

⁵ Central Bank of Kosovo. FDI Time Series

⁶ Central Bank of Kosovo. Remittance Inflows Time Series

⁷ Kosovo Agency of Statistics, Consumer Price Index

⁸ Kosovo Agency of Statistics, National Accounts 2021.

⁹ Kosovo Agency of Statistics, Labor Force Survey

¹⁰ Kosovo Agency of Statistics, Labor Force Survey

Overall, Kosovo has a sizable share of the economy represented by the Processing industry (16% of Gross Value Added), retail and wholesale trade (16.5% of Gross Value Added), and Construction (10.5% of Gross Value Added).¹¹

In terms of the fiscal sector, Kosovo Budget revenues are highly dependent on the border tax collections at approximately 63% and 27% on domestic tax collections (2018-2020 average)¹². Current structure of the economy impacts the way taxes are collected. Private consumption averaged 81% of GDP over 2015-2019, most of which was imported. The industrial sector is still developing and most of the economic activities are focused in the trade sector. Public Debt has remained stable, reaching around 22% of GDP in 2021.

On the basis of the results from the Quantitative Analysis and other quantitative contributions as well as official statistics, the Kosovo Government has considered as good candidates for S3 those industries that have economic strength, economic potential, innovation potential and have potential for smart growth in the future. The sectors identified are ICT, Food Processing Sector, Creative Industries, Green Energy and Wood Processing Sector.

Green Energy was a newly proposed potential S3 priority area, being an area that was not covered in the quantitative analysis but with potential for further growth due to the government priorities related to the area, innovation and new business opportunities. The Government of the Republic of Kosovo adopted the new Strategy for Energy Development and has set targets to transform energy development in accordance with the EU.

At the qualitative analysis stage, the proposed sectors were further analyzed in relation to their potential and interconnections with other sectors and refined in order to be further explored in the EDP.

3.1.Information and Communication Technologies (ICT)

Information and Communication Technologies (ICT) is one of the sectors with the highest growth rate in export of services. In 2021, the export of services for computer and telecommunication services grew by around 38%, which was a record growth for these services. During the period 2018-2020, export of services of computer and telecommunication services had an average growth rate of 16%¹³ The sector was also identified as having great economic potential in the quantitative mapping results. Emerging activities in Manufacture of consumer electronics (NACE 264) and Wireless telecommunications activities (NACE 612) Software publishing (NACE 582), Wired

¹¹ Kosovo Agency of Statistics, National Accounts, 2021.

¹² Annual Budget Law 2022 table 1.

¹³ Service Trade. 2021. Central Bank of Kosovo. Time Series

telecommunications activities (NACE 611) and Other telecommunications activities (NACE 619) underline the importance of the ICT sector with having a current economic potential.

3.2. Food Processing Industry

Based on the quantitative analysis, the manufacturing of food items (including dairy, grain, beverages, and other food items) has passed the criteria and is considered as a sector with current economic potential, based on the employment size, turnover size, and employee specialization. The sector of Processing Industry in Kosovo, in 2020 comprised 13.4%¹⁴ in GDP and had a positive growth trend over the years. In total employment, in 2020, this sector participated with 11.8%¹⁵ and its turnover increased by 8.4%.

3.3. Creative Industries

Creative industries represent “those activities which have their origin in individual creativity, skill and talent and which have the potential for wealth and job creation through the generation and exploitation of intellectual property.”¹⁶

Creative industries include businesses that offer mainly services including: advertisement, media representation, market research and public opinion polling, motion picture, video and television program activities, sound recording and music publishing activities, radio broadcasting, television programming and broadcasting activities, artistic creation, and retail sale of textiles in specialized stores. Based on the quantitative analysis results, some of these sub-sectors passed several of the criteria and were considered sectors with economic potential, including employee size, employee specialization, and turnover size.

3.4. Green Energy

Energy consumption in Kosovo is highly dependent on fossil fuels, as electricity generation capacity is mainly from coal-based thermal power plants, which account for about 94.5% of domestic production, while the rest of the supply of 5.5% is RES-based, consisting of hydropower plants, wind farms and photovoltaic panels.¹⁷ Nonetheless, in the recent years, there have been attempts to increase energy generation through renewable sources in line with the targets set by the EU and the Energy Community and on creating the necessary conditions for investment, in line with the Acquis and the purpose of the EU, and the Energy Community. In the Economic Reform Program 2022-2024, Kosovo is including measures that increase energy efficiency and

¹⁴ National Accounts. 2020. Kosovo Agency of Statistics.

*Only available for Q1 2021

¹⁵ Labour Force Survey. 2020. Kosovo Agency of Statistics.

¹⁶ UK Department of Culture, Media and Sport, 1998. <https://www.gov.uk/government/publications/creative-industries-mapping-documents-1998>

¹⁷ Economic Reform Program. 2022-2025.

contribute to achieving the Sustainable Development Goal for Clean and Affordable Energy, as well as towards the Green Agenda for Clean, Affordable, and Secure Energy Supply. The renewable energy production sector is seen by the government as a sector with high economic potential which will be supported with international funds as well.

3.5. Wood Processing Sector

The Kosovo wood processing sector is considered in all competitiveness analyses including the USAID EMPOWER Sector Assessment and Selection Report of 2015, Analysis of the Wood Building Material Value Chain 2018, and Study of skills needs in the wood processing sector in Kosovo 2017. These analyses and the UNDP assessments for this subsector show that the wood sector in Kosovo has a great economic development potential.¹⁸ According to KIESA, this sector is considered as a sector with high turnover and high exports, with an increasing year-on-year trend.

Furthermore, based on the quantitative analysis report, it was reported in the 2019 Enterprise Survey¹⁹ that the wood sector is identified as one of the sectors in Kosovo that has enterprises which introduced at least one type of innovation.

4. Methodological framework for qualitative insights

This section presents the methodology used by the local expert for the qualitative data collection. The section offers a detailed description of the comprehensive methodological guidance.

Data collection has been pursued mainly through two tools.

- a. Online Surveys with representatives from each preliminary priority sector; and
- b. In-depth interviews with representatives from each preliminary priority sector

Both data collection activities are carried out directly by a local expert, who was also responsible for preparing the list of stakeholders, survey questionnaires, in-depth interview questionnaires, and the implementation of both surveys and in-depth interviews.

The first phase of the qualitative research for Smart Specialization in Kosovo is done through the implementation of the online survey, during the period December 2021 to January 2022.

The main research objective was to measure stakeholders' perceptions on the developments of their respective sectors, innovation potential, challenges, growth prospects, cooperation with other sectors, pandemics impact and so on.

The survey methodology, instrument, and sample development were developed over a cooperative effort, over the following set of steps:

¹⁸ KIESA, REPORT 2019 - SECTOR C - MANUFACTURING INDUSTRY

¹⁹ <https://www.enterprisesurveys.org/content/dam/enterprisesurveys/documents/country/Kosovo-2019.pdf>

- *Identification of the research questions, scope and target group*
- *Design of the survey instrument, questionnaire;*
- *Finalization of the questionnaire, and sample design;*
- *Adaptation of the data and entry software applications;*
- *Data collection;*
- *Preliminary Result Tables, and*
- *Survey report*

The Albanian language was established as the working language for the questionnaire preparation and response collection.

The In-Depth Interviews were used to provide more detailed information on main challenges for the selected priority sectors, presenting strengths and weaknesses, specific features of value chains, current competitive advantages, relevant technologies and competences, and opportunities for innovation potential. The In-Depth Interviews were conducted with relevant stakeholders from the business community, academia, research organizations, governmental organizations, and CSOs, belonging to the selected domains and oriented to bring out main features of the sector they belong to. The main purpose of the In-Depth Interviews was to focus on the same topics addressed with the survey, but with a deeper level of detail, including a representation of stakeholder's outlook on future trends.

5. Implementation: data collection

a) Survey

The survey has been implemented and oriented to stakeholders operating in the identified priority sectors. With regards to the preparation of the databases of recipients and of the questionnaires, the Kosovo Government and JRC have been informed/involved on a regular basis. The definition of the questions has been oriented to the aim of the qualitative analysis, taking into account main issues detected in the methodological guidance and leading to 4 differentiated questionnaires on the basis of the typology of recipients (Businesses, Academia-Research Sector, CSOs and Government).

The survey was designed in the Kobo Toolbox platform with relevant links for 5 preliminary sectors (business representatives), academia, government, and CSOs. In total there were 8 different links directed to different stakeholder categories.

The survey instrument (questionnaire) was approved on 23rd of November 2021. The questionnaire was then coded into the platform on the 2nd of December 2022.

The sources of the email addresses for businesses were obtained mainly from Kosovo Business Registry Agency, whereas the email addresses for the Government were provided by the Strategic

Office in the Prime Minister Office. For academia and CSO representatives, email contacts were found on university websites and respective CSO websites.

The Government was indirectly involved in the launch of the survey (not through an official launching event, nor using an institutional mail to send it, but promoting the survey through many channels). Reminders for participating in the survey were done continuously by the expert in order to increase a response rate.

Some difficulties have risen during the survey launching process. A number of emails were returned back due to technical difficulties because of incorrect email addresses. Many emails couldn't be delivered at the same time because the maximum daily limit of sent emails was reached. At the end of the survey process, a total of 266 responses were submitted reaching an overall response rate of 9%.

Table 1 shows the total number of respondents per each sector.

Table 1 Survey Response Rate

The sector	Number of Responses	Response Rates
Creative industry	23	4.5%
Energy sector	13	31.0%
Wood processing	22	7.2%
Agro-processing	26	10.5%
ICT	32	5.8%
Academia	108	8.5%
CSO	12	19.7%
Government	30	28.0%
Total	266	9.0%

b) In-depth Interviews

The interview questionnaires were approved on the 14th of January 2022 and the interview process began on the 25th of January 2022 and ended on the 7th of April 2022.

As per the method adopted for the selection of interviewees, the list represents the most important stakeholders per each priority sector. Annex 5 reports the list of persons and organizations interviewed. Four different questionnaires have been prepared, namely directed to 1) Businesses, 2) CSOs, 3) Government Institutions, 4) Academia representatives.

Interviews were conducted in a structured manner following the questions presented in each interview form. Interviews were transcribed directly and then translated to English. A total of 77 interviews have been held using a combination of face-to-face meetings and virtual meetings. On average, the length of interviews was around 35-50 minutes.

The interviews were set for all five sectors, combining representatives from the business sector, academia, government and CSOs. As per methodological requirements, the majority of interviews

(>50%) within each sector were conducted with business representatives. In all cases, interviews were held with CEO's or high level managers of the companies.

Table 2 In-depth Interview Respondents

Sector	Businesses	Academia	Government	Other	Total
ICT	9	4	3	3	19
Green Energy	9	0	3	3	15
Wood Processing	9	2	2	1	14
Creative Industries	10	3	1	1	15
Food Processing	8	1	0	5	14
Total	45	10	9	13	77

6. Qualitative Mapping Results

6.1. Information and Communication Technology

According to an ICT study conducted by PWC²⁰, this sector is characterized by a positive trade balance and around 78% of already existing companies export their services. The Government of Kosovo has as well recognized this and is working to position the country as a regional hub for information technology related products and services, building on the strong IT and English-language skills within the workforce.

The ICT sector has started to play an increasing role in Kosovo's economic growth. As stated in the Kosovo IT Strategy,²¹ the ICT sector in Kosovo, is recognized as one of the most developed and one with great potential for generating economic growth. Given its potential, the ICT sector is rated among the top priority sectors that contributes positively to economic development.

²⁰ PWC (2018). ICT Sector Study North Macedonia, Albania, Kosovo. <https://www.netherlandsworldwide.nl/binaries/en-nederlandwereldwijd/documenten/publications/2019/04/10/ict-wb/ICT+Sector+Study++Albania%2C+Kosovo+and+North+Macedonia.pdf>

²¹ https://stikk.org/wp-content/uploads/2018/11/Kosovo_IT_Strategy_V01-00_29-06-2016.pdf

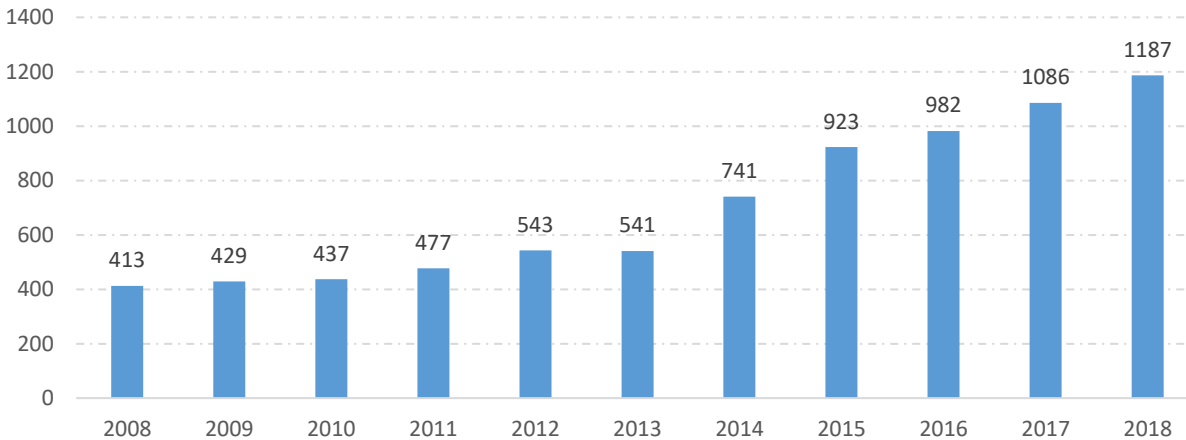


Figure 1 Number of businesses registered per year in the ICT sector 2008-2018- Source Open Data Kosovo

According to Open Data Kosovo²², by the end of 2018, there were 7,762 businesses registered in the ICT sector, whereby the majority of them, around 88%, were Kosovo-owned, around 3% were in equal partnership with foreign partners; and around 8% were foreign-owned.

In the in-depth interview process, nine companies, four academia representatives, three government representatives and three CSO representatives were interviewed. In the survey process, there were thirty-two ICT business representative respondents, coupled with additional academia and other stakeholders whose background was more related to the ICT sector.

As per the qualitative mapping report and research sample, ICT sector consisted of:

- Software development/publishing (58.2)
- Telecommunications (61)
- Computer programming activities (62.01)
- Computer consultancy activities (62.02)
- Computer facilities management activities (62.03)
- Data processing, hosting and related activities; web portals (63.1)
- Web Portals (63.12)
- Repair of computers and communication equipment (95.1)
- Manufacture of electronic components and boards (26.1)
- Manufacture of computers and peripheral equipment (26.2)
- Manufacture of communication equipment (26.3)
- Manufacture of consumer electronics (26.4)
- Manufacture of magnetic and optical media (26.8)
- Wholesale of information and communication equipment (45.6)
- Publishing of Computer Games (58.21)

²² The Future Workplace in the Kosovo ICT Market. (2021). Open Data Kosovo. <https://opendatakosovo.org/portfolio/the-future-workplace-in-the-kosovo-ict-market/>

The companies interviewed and surveyed operated mainly in a) software development/publishing; b) computer programming activities; c) computer consultancy services; d) data processing, hosting, and related activities; and e) web portals.

These sub-sectors within the ICT sector have been identified even from STIKK- Kosovo ICT Association in the 2020 IT Barometer research report, whereby it has been identified that the most popular horizontal markets in the ICT sector are Custom Development / Outsourcing, followed by IT Consulting, Web design development, Mobile Solutions, E-commerce, Software Quality Assurance etc.²³

Based on both survey and in-depth-interviews, the main factors providing the sector with competitive advantage are export capacity and human resources. The respondents rate this sector as strong and with high growth potential. The results suggest that the companies operating in the ICT sector are very export-oriented and a large share of their services is destined for exports, mainly destined to regional countries, EU and the US to some lesser extent.

Around 77% of the companies interviewed sell their products on both the domestic and international market and 23% sell on either the domestic or international market. Out of the 77% of companies, that sell their products in both markets, the international market dominates with a larger share of products/services sold. A similar finding was present in the survey results as well, whereby only 21.9 % of the respondents operated only domestically, while for the rest, the international market dominated as percentage to total sales.

Innovation dynamics in the ICT sector

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, Artificial Intelligence, machine learning, and automation are identified as the main opportunities.

The stakeholders assess their companies as being innovative due to different products/services that they have developed. While they note that challenges and bottlenecks that impede a better innovation performance are related to insufficient access to finance for R&D purposes. The lack of finance for R&D purposes has also been identified as a challenge in the Kosovo IT Barometer study in 2020.²⁴

According to stakeholders, with regards to innovation, in ICT there are numerous innovation networks and clusters in Kosovo, including leading innovative companies. This view was shared by stakeholders representing other sectors both in the survey and in-depth interview answers. Namely, stakeholders from the Green Energy, Food Processing, Wood Processing and Creative Industries, suggest that innovation clusters in Kosovo are present mainly in the ICT sector.

²³ Kosovo IT Barometer (2020). <https://stikk.org/wp-content/uploads/2021/06/IT-Barometri-2020.pdf>

²⁴ Ibid

Stakeholders from the Academia, CSOs and Government both in the survey and in-depth interviews report that the sector with the highest potential for R&D and innovation out of the five preliminary sectors, is ICT. The reasons why the sector was rated to have high potential for innovation included quality workforce and export orientation.

According to the stakeholders, research and innovation priorities and support resources existent in the country, do not correspond with their needs. R&D, according to them, is not yet seen as a priority and further support is needed particularly since it is stated that it is not easy to pursue innovative ideas in Kosovo due to financial limitations and lack of places/labs to test innovative ideas. This view is shared by representatives of academia, CSOs and government, both in the in-depth interviews and survey results. The stakeholders also point out that the fact that Kosovo is not a fully recognized country and is not part of numerous platforms is a deterrent to R&D potential.

In order for the stakeholders to be incentivized to invest more in R&D, funds aimed for that matter are seen as important as they currently believe that there are little to no funds available for R&D purposes.

The stakeholders from the ICT business sector and the academia point out that the science/knowledge sector cooperation with the ICT sector is good but limited to student placements opportunities. Business stakeholders believe that the qualifications attained in universities are not enough and the new graduates still have to go through training programs, in order to be prepared for the job, since technology is advancing and universities are lagging behind. The issues with updates needed in the curriculum are also pointed out by the academia stakeholders during the in-depth interview process. The industry faces a deficit of highly skilled ICT professionals, which is linked to the gap between the skills developed by the education system and those needed by the labor market. In terms of joint research infrastructure, technology transfer, research labs and so on, the cooperation and opportunities are very limited.

The stakeholders identify brain drain as a potential upcoming challenge considering that the highly skilled specialized profiles may leave the workforce to go to European or US markets. According to them, materializing ICT growth potential is highly dependent on qualified human resources and there is a need for a higher number of ICT professionals.

In terms of value chain, based on the survey and interviews, the following value added operations mostly take place in Kosovo, within the company: a) Technological development component b) Operations. The interviewees suggest that most of the ICT companies do not create full value chains or have short value chains since they only participate in the production of some elements of the final software solutions. This was explained with the fact that most ICT companies are contracted by international ICT companies to complete parts of products and thus do not complete all the value chain components within the company.

In terms of horizontal cooperation, the survey and interview results suggest that cooperation with companies within the ICT sector is beneficial and would contribute to a higher competitive advantage of the sector overall. Cooperation with other sectors, according to the stakeholders, would contribute mainly to higher digitalization levels in those sectors. The two sectors highlighted in terms of cooperation, both in the survey and in-depth interviews are Creative Industries and Banking sector.

At a time of COVID-19 crisis, the ICT sector demonstrated strong flexibility as stakeholders in the sector quickly adapted to working from home. On the contrary, the usage of digital technology in all sectors in the newly created had a positive impact for the ICT companies interviewed and surveyed. In 2020, during the peak of pandemics, most companies had a positive effect in their performance results.

Considering the wide area of the ICT sector, based on systematized data obtained from a number of sources (conducted interviews, survey responses, in-depth sectoral analysis, etc.), the following sub-areas are proposed:

1. Software Development; and
2. Computer Programming Activities

A third potential area would be related to advanced ICT services including the emerging technologies identified by stakeholders such as AI, machine learning, and automation. However, these need to be further elaborated in the EDP process, as there is not much information derived from the qualitative analysis.

According to the interviews, outsourcing is currently dominating, but many companies are focusing on their specialization related to custom software development in the following industries: e-solutions for production processes and services, health, banking, e-commerce, etc. As part of the digital transformation process taking place in many industries, almost all sectors are considered to be ICT target markets.

ICT as a potential priority for Smart Specialization could be a valuable sector in terms of horizontal integration with other sectors, in particular by helping with the digital transformation of the other industries and business solutions, especially due to a rapid growth (post-pandemic) for e-services in the business and public sector, trade (e-commerce), education (e-education), etc.

Table 3 Summary of Findings in the ICT sector

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● Export orientation and export opportunities ● Competitive Workforce in terms of cost of labor
Value Chain	<ul style="list-style-type: none"> ● Large part of the sector is related to outsourcing of services

	<ul style="list-style-type: none"> ● Most of the ICT companies do not create full value chains or have short value chains since they only participate in the production of some elements of the final software solutions.
Upcoming Challenges	<ul style="list-style-type: none"> ● Education Quality – unsatisfactory level of skills and knowledge obtained in the higher level education system; ● Brain Drain syndrome – emigration of highly specialized profiles to developed economies. ● Low cooperation between academia and the private sector in the process of building capacities
Innovation Dynamics	<ul style="list-style-type: none"> ● Innovative individual companies reflected by different products/services developed ● Lack of joint research infrastructure, technology transfer, and research labs ● Low cooperation with academia in terms of research ● Insufficient access to finance for R&D purposes ● Limitations stemming from the fact that Kosovo is not a fully recognized country, making it hard for the ICT sector to fully take advantage of innovation potential or create international partnerships
COVID-19 Impact	<ul style="list-style-type: none"> ● The sector hasn't been affected by the impact of the pandemic ● Most companies had a positive effect in their performance results.
Horizontal Cooperation Areas	<ul style="list-style-type: none"> ● Cooperation within the ICT sector would contribute to a higher competitive advantage of the sector overall. ● Cooperation with other sectors, according to the stakeholders, would contribute mainly to higher digitalization levels in those sectors, especially beneficial with the Creative Industries and Banking sector.

6.2.Creative Industries

Based on 2020 national accounts, services related to information and communication, and professional activities consist of 4.0% of Gross Value Added.²⁵ As per the qualitative mapping report and research sample, Creative Industries sector consisted of :

- Advertising (NACE 73.11)

²⁵ National Accounts. Kosovo Agency of Statistics. GDP Structure by activities 2020.

- Media representation (NACE 73.12)
- Market research and public opinion polling (NACE 73.2)
- Motion picture, video and television programme activities (NACE 59.1)
- Sound recording and music publishing activities (NACE 59.2)
- Radio broadcasting (NACE 60.1)
- Television programming and broadcasting activities (NACE 60.2)
- Artistic creation (NACE 90.03)

Based on the survey and in-depth interview process, the respondents belonged mainly in the advertising, artistic creation, and market research/public polling sub-sectors.

In the in-depth interview process, ten companies, three academia representatives, one government representative and one CSO representative were part of the process. In the survey process, there were twenty-three business representative respondents, coupled with additional academia and other stakeholders whose background was more related to the sector.

Based on both surveys and in-depth-interviews, the main factors providing the sector with competitive advantage were export capacity and human resources. The respondents rate this sector as strong and with high competitive advance in the external market due to lower comparative costs. The results suggest that the companies operating in the sector are very export-oriented and a large share of their services is destined for exports, mainly destined to Europe, especially the UK, and the US.

Innovation Dynamics

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, new digital frontiers such as Block Chain, Virtual Reality, and Artificial Intelligence are identified as the main opportunities.

The stakeholders assess their companies as being innovative mostly in the use of new technology and in the offering of innovative services. In this regard, it is brought forth that challenges and bottlenecks that impede a better innovation performance are related to insufficient access to finance. In particular, the respondents point out to the fact that they mainly own digital assets, which are not counted as collateral by banks, limiting their borrowing capacities. While other issues pointed out are related to Kosovo not having fully functional online payment services and lack of collaboration with R&D partners and other sectors.

The stakeholders suggest that the fact that R&D is not yet a priority or focus is a challenge, coupled with technical issues such as international platforms not recognizing Kosovo including here PayPal, Google Analytics, AdScale, etc. The respondents state that there are no sufficient investments, either public or private, to complement their own resources.

The stakeholders point out that the science/knowledge sector cooperation with their sector is limited. On that note, they believe that the qualifications attained in universities are not enough and the new graduates still have to go through training programs, in order to be prepared for the job. The respondents state that qualified workforce will be an upcoming challenge due to two main reasons: difficulties attracting qualified workforce due to the competition from recently opened foreign companies in the country, and the need for ongoing training in order to keep up with the fast moving technological changes.

In terms of horizontal cooperation, the survey and interview results suggest that cooperation with companies within their own sector would be beneficial. Cooperation with the ICT sector, according to the stakeholders both in the in-depth interview process and survey process, would be advantageous. While collaboration with other sectors would be mainly related to the stakeholders offering their services and contributing to higher digitalization levels in those sectors.

The COVID-19 impact for the sector is reported to be moderate and highly dependent on the type of market. For those stakeholders that operated mainly in the domestic market, their sales were negatively impacted while for those that operated internationally, the impact was positive as there was more demand for the services.

Table 4 Summary of Findings in Creative Industries

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● Export orientation and export opportunities ● Competitive Workforce in terms of cost of labor
Value Chain	<ul style="list-style-type: none"> ● Creative industry, mostly advertising/marketing firms are mainly operating in the provision of outsourced services mainly to European countries, UK with a high emphasis. ● There was limited information about the value chain of this area by the interviewed stakeholders, so more attention needs to be paid to this question in the EDP in order to identify the missing parts of the value chain that should be supported.
Upcoming challenges	<ul style="list-style-type: none"> ● Lack of qualified human resources linked to the gap between skills obtained in the education system and those needed in the labor market ● Insufficient access to finance- mainly since digital assets are not being counted as collateral by banks, limiting borrowing capacities ● No fully functional online payment services
Innovation Dynamics	<ul style="list-style-type: none"> ● Innovative individual companies reflected by different services offered

	<ul style="list-style-type: none"> ● Low cooperation with academia ● Insufficient access to finance for R&D purposes ● R&D not yet a priority or focus ● Technical issues such as international platforms not recognizing Kosovo including here PayPal, Google Analytics, AdScale, etc. ● Insufficient investments either public or private to complement their own resources.
COVID-19 Impact	<ul style="list-style-type: none"> ● The sector was moderately affected by the pandemic ● The impact was mainly negative for the companies whose operations were mainly domestic
Horizontal Cooperation Areas	<ul style="list-style-type: none"> ● Cooperation with the ICT sector would contribute to a higher competitive advantage of the sector. ● Cooperation with other sectors, would be to offer services to them and mainly in terms of B2B cooperation

6.3. Food Processing Industry

Food processing in Kosovo is considered a sector with significant growth potential, both domestically and externally. According to a USAID report on sectoral assessment, the food processing sector is one of the biggest manufacturing sectors in Kosovo, and the third largest exporter.²⁶ According to CBK’s statistics on external trade, exports of prepared foodstuff and fats/edible oils have been around 8% of total exports of goods in 2021.

In the qualitative mapping sample design, the following sub-sectors have been identified:

- Processing and preserving of meat and production of meat products (NACE 10.1)
- Processing and preserving of fish, crustaceans and mollusks (NACE 10.2)
- Processing and preserving of fruit and vegetables (NACE 10.3)
- Manufacture of vegetable and animal oils and fats (NACE 10.4)
- Manufacture of dairy products (NACE 10.5)
- Manufacture of grain mill products, starches and starch products (NACE 10.6)
- Manufacture of bakery and farinaceous products (NACE 10.7)
- Manufacture of sugar (NACE 10.8)
- Processing of tea and coffee (NACE 10.84)
- Manufacture of prepared animal feeds (NACE 10.9)

²⁶ SECTOR ASSESSMENTS. Wood Processing, Information and Communications Technology, and Food Processing USAID Kosovo Compete Activity. 2021.

- Manufacture of beverages (NACE 11.0)

Based on the survey and in-depth interview process, the respondents belonged mainly in the manufacturing of dairy products, manufacturing of vegetable and animal oils and fats, and manufacturing of beverages.

In the in-depth interview process, eight companies, one academia representative, and five CSO representatives were part of the process. In the survey process, there were twenty-six Food Processing representative respondents, coupled with additional academia and other stakeholders whose background was more related to the sector.

The stakeholders considered this sector to be developing or have potential to grow mainly because of it still not being able to meet domestic demand and the fact that it produces essential goods that are always in demand.

Innovation Dynamics

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, new and technologically advanced production machinery would offer a competitive advantage to the industry by allowing them to take advantage of scale.

The stakeholders assess their companies as being innovative mostly in the use of new technology in the production process. In this regard, it is also identified that challenges and bottlenecks that impede a better innovation performance are related to insufficient access to finance and limited traveling due to Kosovo not being fully recognized and not having visa liberalization. In particular, the respondents point out to the fact that travel difficulties hinder their ability to participate in fairs and other events which would allow them to take advantage of innovation potential or create business partnerships.

The respondents state that there are no sufficient investments, neither public or private, to complement their own resources. When it comes to the research and innovation priorities and support resources, the results suggest that these priorities do not correspond with sectoral needs, mainly because access to finance towards innovation is low, but also because there is a lack of clear analysis of R&D sectoral needs. Based on the survey and interview results, pursuing innovative ideas is not as easy since the stakeholders have to rely on their own finances to do so.

The stakeholders point out that the science/knowledge cooperation with their sector is moderate. It is reported that the qualifications attained in universities are not sufficient and the new graduates still have to go through training programs, in order to be prepared for the job.

In terms of horizontal cooperation, the surveys and interviews suggest that cooperation with the ICT, Creative Industries, and Green Energy sector, would be advantageous, contributing to higher digitalization of processes and marketing of the products.

The COVID-19 impact for the sector is reported to have been significant. For some of the stakeholders, the pandemic resulted in a higher demand for their healthy and organic products while for others transportation disruptions, lockdown and infection rates amongst employees, led to an overall negative impact.

Table 5 Summary of Findings in Food Processing Industry

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● High demand for essential products
Value Chain	<ul style="list-style-type: none"> ● The largest part of the sector is oriented to the domestic market, organized in small companies ● The main stage of the value chain in which most companies operate is: Operations (production activity of goods and services, transformation from raw material into a finished product). ● Some of the companies also engage in distribution activities and marketing/sale activities
Upcoming Challenges	<ul style="list-style-type: none"> ● Lack of qualified human resources resulting in a high need for in-job training. ● Insufficient access to finance ● Shortage of raw materials, particularly milk in the dairy manufacturing industry
Innovation Dynamics	<ul style="list-style-type: none"> ● Innovative individual companies reflected by different technology usage during production process ● Moderate cooperation with academia ● Insufficient access to finance for R&D purposes ● Travel issues hinder participation in international fairs, thus impeding partnerships ● No sufficient investments either public or private to complement their own resources
COVID-19 Impact	<ul style="list-style-type: none"> ● The sector was significantly affected by the pandemic ● The impact was negative for the companies whose transportation was disrupted and the production process halted due to social distancing measures.

Horizontal Cooperation Areas	<ul style="list-style-type: none"> ● Cooperation with the ICT, Creative Industries, and Renewable Energy sector would contribute to a higher competitive advantage of the sector.
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6.4. Wood Processing Sector

The wood processing industry in Kosovo is an important and prioritized economic sector. Based on USAID Compete Activity Sectorial Report, the wood industry’s competitiveness has improved due to the growing adoption of modern production technologies. Based on this report it is estimated that wood processors in Kosovo invested close to €30 million in technology adoption over the past five years.²⁷ This technological advancement has been coupled with a growing number of companies operating in the sector, higher employment, and higher exports.

According to Compete, due to price competitiveness, Kosovo’s exports of wood products to Switzerland, Germany, Belgium, and the Scandinavian countries have had a significant growth over the period 2015 – 2019.

The wood processing sector comprises a large number of small- and medium-sized enterprises (SMEs), with an increasing number of medium-sized firms.

The growing size of the industry, in particular, the growth of export activities comes mainly from a) proximity to the European markets and b) the presence of diaspora which is heavily engaged in the construction sector in the European markets. The latter, positively influences the industry as it enables collaboration between the diaspora businesses operating in the European market and Kosovo businesses in terms of forming business partnerships and enabling Kosovo businesses to sell their products to the diaspora businesses.

In the qualitative mapping sample design, the following sub-sectors have been identified:

- Manufacture of veneer sheets and wood-based panels (NACE 16.21)
- Manufacture of assembled parquet floors (NACE 16.22)
- Manufacture of other builders' carpentry and joinery (NACE 16.23)
- Manufacture of wooden containers (NACE 16.24)
- Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting materials (NACE 16.29)
- Manufacture of furniture (NACE 31.0)
- Manufacture of office and shop furniture (NACE 31.01)
- Manufacture of kitchen furniture (NACE 31.02)

²⁷ SECTOR ASSESSMENTS. Wood Processing, Information and Communications Technology, and Food Processing USAID Kosovo Compete Activity. 2021.

In the in-depth interview process, nine companies, two government representatives, two academia representatives and one CSO representative was interviewed. In the survey process, there were twenty-two Wood Processing representative respondents, coupled with additional academia and other stakeholders whose background was more related to the sector.

Based on the survey and in-depth interview process, the respondents belonged mainly in the a) manufacturing of furniture and b) manufacturing of kitchen furniture.

The stakeholders considered this sector to be very strong mainly because of its export capacity, low production cost, and innovation potential. The view was also supported by the academia, government and CSO representatives. The respondents assess that their companies are export oriented and a large share of their products is destined for exports, destined mainly to the regional countries and the EU countries, in particular Germany and Switzerland.

Challenges foreseen by the stakeholders relate mainly to specialized workforce and quality workforce, in particular due to possible migration.

Innovation Dynamics

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, new and technologically advanced production machinery would offer a competitive advantage coupled with process digitalization/automation.

The stakeholders assess their companies as being innovative mostly in the use of new technology in the production process and in the development of innovative designs. Stakeholders identified that challenges and bottlenecks that impede a better innovation performance are related to insufficient access to finance and lack of qualified workforce, which do not allow them to fully take advantage of innovation potential.

The respondents state that there are no sufficient investments, either public or private, to complement their own resources. When it comes to the research and innovation priorities, and support resources, the results suggest that these priorities do not correspond with sectoral needs as R&D is not yet seen as a priority. Much more support is needed to increase the innovation in the sector, especially due to lack of finance directed for R&D and innovation. Based on the survey and interview results, pursuing innovative ideas is not as easy since the stakeholders have to rely on their own finances to do so.

The stakeholders point out that the science/knowledge cooperation with their sector is moderate. On that note, they report that the only form of cooperation is by providing students with internship opportunities; while, there is no cooperation in joint research infrastructure, technology transfer,

research labs and other. This view is shared by academia representatives in the in-depth interview process as well. The survey and interview results argue that the qualifications attained in universities are not sufficient and the new graduates still have to go through training programs, in order to be prepared for the job.

In terms of horizontal cooperation, the answers suggest that cooperation with the ICT, Creative Industries (in particular digital marketing), and Banking sector in terms of better financing options, would be advantageous, contributing to higher competitive advantage.

The COVID-19 impact for the sector is reported to have been significant. For some of the stakeholders, the pandemics resulted in a higher demand for their products while for others there were lower sales, resulting in postponement of investment plans.

Table 6 Summary of Findings in Wood Processing Industry

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● Export Potential ● Price Competitiveness ● Proximity to European markets
Value Chain	<ul style="list-style-type: none"> ● Most of the sector is oriented towards the European markets ● The main stage of the value chain in which most companies operate is: Operations (production activity of goods and services, transformation from raw material into a finished product) ● Raw materials are mostly imported from European countries and Turkey ● Some of the companies also engage in distribution activities and marketing/sale activities ● The value chain is short as most producers' export by themselves and there are no key national wholesalers facilitating sales on international markets. There are also no innovative companies developing machinery and technology that supports cost-effective production.
Upcoming Challenges	<ul style="list-style-type: none"> ● Lack of qualified human resources resulting in a high need for in-job training ● Insufficient access to finance

Innovation Dynamics	<ul style="list-style-type: none"> ● Innovative individual companies reflected by different technology usage during production process ● Moderate cooperation with academia, mainly in terms of student placement and not research collaboration ● Insufficient access to finance for R&D purposes ● Insufficient investments, either public or private, to complement their own resources.
COVID-19 Impact	<ul style="list-style-type: none"> ● The sector was moderately affected by the pandemic ● Investment plans were postponed
Horizontal Cooperation Areas	<ul style="list-style-type: none"> ● Cooperation with the ICT, Creative Industries (mainly marketing), and Banking sector would contribute to a higher competitive advantage of the sector.

6.5. Green Energy Sector

The vast majority of electricity in Kosovo is produced by two lignite-fired thermal power plants, known as Kosovo A and Kosovo B. To encourage renewable energy sources, Kosovo has established the necessary legal framework and for hydropower, wind, photovoltaic, and biomass generation. In 2019, Kosovo reached its 25% target for the share of energy from renewable sources in gross final energy consumption. Nonetheless, this was mainly due to biomass consumption rather than a significant increase in renewable investments.

According to Bankwatch Network, by the end of 2020 only 10 MW of solar photovoltaics had been installed, even though the country has a solar manufacturer capable of manufacturing 200 MW per year. In 2018 Kosovo had its first major wind farm, the 32 MW Kitka plant, and in September 2021 part of the 105 MW Bajgora plant started test operations.²⁸

The energy sector is also being highly supported by the Millenium Foundation through energy efficiency measures, private-sector participation in the energy sector, and women's engagement in the energy sector. Their program Green Recovery and Opportunity Window (GROW)²⁹ is providing free technical assistance for increasing access to finance for businesses that invest in renewable energy and energy efficiency measures.

²⁸ Bankwatch Network. (2020). The Energy Sector in Kosovo. <https://bankwatch.org/beyond-fossil-fuels/the-energy-sector-in-kosovo#:~:text=Despite%20the%20slow%20progress%2C%20Kosovo,a%20real%20increase%20in%20investment>

²⁹ <https://millenniumkosovo.org/reliable-energy/>

The government, in the Economic Reform Program 2022-2024 has also introduced measures that aim to prioritize energy efficiency and improve it in all sectors, especially in the residential one. The measures focus on increasing energy generation through renewable sources in line with the targets set by the EU and the Energy Community, contributing to achieving the Sustainable Development Goal for Clean and Affordable Energy, as well as towards the Green Agenda for Clean, Affordable, and Secure Energy Supply.³⁰

In the qualitative mapping sample design, the energy sector has been targeted, with a special emphasis on renewables.

- Production of electricity (NACE 35.1.1)
- Transmission of electricity (NACE 35.1.2)
- Distribution of electricity (NACE 35.1.3)
- Trade of electricity (NACE 35.1.4)
- In the case of renewables, the respondents had the options of choosing: Solar Power, Wood Biomass, Recycling, Hydropower, Energy Efficiency, Wind Power, Green Technology and Innovation, and Production and Wholesale of Pellets.

Based on the survey and in-depth interview process, the respondents belonged mainly in renewables. It has to be noted that due to the small number of companies operating in the sector, the survey and in-depth interview sample captures the main stakeholders in solar and wind energy.

In the in-depth interview process, nine companies, three government representatives and three CSO representatives were part of the process. In the survey process, there were thirteen business sector respondents, coupled with additional academia and other stakeholders whose background was more related to the sector.

The business stakeholders considered this sector to have potential to grow mainly because of increased demand for energy and increased focus on renewables. The view was also supported by the government and CSO representatives.

Challenges foreseen by the stakeholders relate mainly to small company sizes, limited number of private investors, bureaucracy issues as procedures for connecting to the electricity grid will be problematic, and production prices.

Innovation Dynamics

According to stakeholders, in terms of emerging technologies, products, or global market opportunities that are promising for Kosovo's economy in the upcoming decade, new and

³⁰ Economic Reform Program 2022-2024. <https://mf.rks-gov.net/page.aspx?id=2,28>

technologically advanced production machinery for producing solar panels would offer a competitive advantage.

The stakeholders assess their companies as being innovative mostly in the use of new technology in the production process. It is also identified that one of the greatest determinants for increasing innovation is cooperation with R&D partners, especially foreign companies.

Stakeholders identified that challenges and bottlenecks that impede a better innovation performance are related to insufficient funds, insufficient investment in education and innovative labs. Stakeholders point out that in the Kosovo market it is not as easy to pursue innovative ideas due to limitations related to bureaucratic procedures, lack of destined funds for innovation, and small market size.

The respondents state that there are no sufficient investments either public or private to complement their own resources. When it comes to the research and innovation priorities and support resources, the results suggest that these priorities do not correspond with innovation needs.

The stakeholders point out that the science/knowledge cooperation with their sector is moderate. On that note, they report that the only form of cooperation is through providing students with internship opportunities. Both the survey and interview results point out that the qualifications attained in universities are not sufficient and the new graduates still have to go through training programs, in order to be prepared for the job.

In terms of horizontal cooperation, the respondents express the belief that further expansion of the collaboration with the ICT sector and Creative Industries would create competitive advantage mainly in terms of digitalization. Cooperation with the construction sector would offer them more business opportunities.

The COVID-19 impact for the sector is reported to have been significant. For the stakeholders, the pandemics resulted in lower sales and postponement of investment plans. Most of the companies in this sector reported that they were affected negatively from the pandemic crisis. They faced lower sales and postponement of investments.

Considering the wide area of the Green Energy sector, based on systematized data obtained from a number of sources (conducted interviews, survey responses, etc.), the following sub-areas are proposed:

1. Renewable Energy Sources, and
2. Energy Efficiency Measures

The Green Energy preliminary priority sector would be considered to be a horizontal one because it would contribute to cross-sectoral relations with other proposed priority areas, especially wood and food processing industries which are more energy dependent in the production process.

Within this area, potential fields needing additional research are solar energy and wind energy, as two of the most promising fields in the Kosovo context and environment.

However, it should be noted that there are several serious deficiencies in the energy sector: 1) the country is still a net importer of electricity; 2) the use of fossil fuels for electricity production is high and causes serious environmental problems; 3) there is significant loss of electricity within the electricity distribution system; 4) the renewable energy sources are still insufficiently used (solar and wind).

Nonetheless, there is a growth potential for this sector, which appears to be attractive for foreign investments (as main wind power plants are foreign investments), as well as significant potential for further development of production of electricity with renewable energy sources.

Table 7 Summary of Findings in the Green Energy Sector

Topic	Main Findings
Competitive Advantage	<ul style="list-style-type: none"> ● Increased demand for energy ● Increased focus on renewables
Value Chain	<ul style="list-style-type: none"> ● With regards to energy production, the companies operating in renewables are mainly based on solar panels and wind farms ● Most of the companies import the technology and engage mainly in operations and services ● No availability of more detailed information about the value chain by the interviewed stakeholders, so more attention needs to be paid to this matter in the EDP in order to identify the missing parts of the value chain.
Upcoming Challenges	<ul style="list-style-type: none"> ● Lack of qualified human resources resulting in a high need for in-job training. ● Insufficient access to finance ● Small company sizes ● Limited number of private investors ● Bureaucracy issues i.e. procedures for connecting to the electricity grid
Innovation Dynamics	<ul style="list-style-type: none"> ● Moderate cooperation with academia, mainly in terms of student placement and not research collaboration ● Insufficient access to finance for R&D purposes ● No sufficient investments, either public or private, to complement their own resources. ● Insufficient investment in education and innovative labs

COVID-19 Impact	<ul style="list-style-type: none"> ● The sector was negatively affected by the pandemic in terms of lower sales ● Investment plans were postponed
Horizontal Cooperation Areas	<ul style="list-style-type: none"> ● Cooperation with the ICT, Creative Industries would contribute to a higher competitive advantage of the sector ● Cooperation with the Construction sector would offer more business opportunities

7. Conclusions

The Republic of Kosovo continued the process of the development of a Smart Specialization strategy, being committed to develop economic growth policies based on innovation and smart specialization. The qualitative analysis was performed in the period November 2021 – May 2022. The analysis was derived on answers from 77 stakeholders in the in-depth discussions and 266 respondents in the online survey. The main aim of the qualitative analysis was to further analyze the preliminary priority areas of Smart Specialization in Kosovo that should be part of the forthcoming entrepreneurial discovery process.

Kosovo’s preliminary priority sectors emerging from the quantitative analysis are also confirmed by the qualitative data collected. The sectors researched have growth potential and opportunities to expand, despite having structural weaknesses that require interventions primarily from government authorities.

These structural investments and reforms affect the development of all the industries in the country and in particular of those ones most oriented to international markets.

As mentioned most horizontal points considered as relevant are the digitalization of processes and energy efficiency stemming from renewable energy sources.

Similarly, in all sectors, there was a mismatch between the curricula of students leaving the VET and the higher education training with the labor market requirements. In particular, the academic institutions are lagging behind in the adaptation of curricula to international standards and technological innovations. In the end this is causing businesses in all five sectors to invest in on-job training programs.

This view is shared also by academia representatives during in-depth interviews, as they suggest that there is a mismatch between what university curricula offer and what businesses need. They report that there is a need to update the existing curricula, however, in the ICT field, it is hard to keep up with advancements in the field. Furthermore, it is stated that universities lack the practical

skills component as there are very few opportunities for students to practice lessons learned in classrooms.

Overall, the standards of public research and academic research are considered below standards, there is lack of R&D funds, and collaboration between academia and businesses is considerably low. The main collaboration between the companies and academia is in the form of student placements and internships, rather than knowledge sharing and R&D activities. This view was shared by both business and academia stakeholders.

In terms of sectors that the academia representatives rank as ones with higher potential for Research and Development and Innovation, ICT sector leads with being ranked the highest, followed by Green Energy and Creative Industries. This was reported as being mainly due to the potential for R and D, quality workforce, and the sectors' export orientation.

Similar to other stakeholders, academia representatives also suggest that Innovation and R&D are not fully supported in Kosovo.

Based on the survey and in-depth interview results, development opportunities are believed to be related to the automation of processes, digitalization, new digital frontiers (artificial intelligence, IoT sensors, and machine learning), and energy transition (use of renewable sources).

In terms of limitations, the analysis occasionally lacked available data from the surveys and interviews to determine complete information on value chains, so this topic should be further investigated at the entrepreneurial discovery process stage.

In terms of horizontal integrations, main positive experiences regard the integration of ICT with the other four sectors, contributing to higher digitalization and offering a competitive advantage. The integration of the renewable energy sector with the Food and Wood Processing sectors is also deemed as a positive horizontal integration.

Potential integration opportunities stemming from the qualitative analysis, are presented below and could be considered for further opportunities of investigation in the EDP process. There are 3 potential vertical areas and 2 horizontal thematic priority areas. Draft version of thematic priority areas that may serve as a basis for the entrepreneurial discovery process at the national level may be represented by the following matrix of vertical and horizontal thematic priority areas:

Table 8 Matrix of vertical and horizontal thematic priority areas

	Food Processing	Wood Processing	Green Energy
ICT			
Creative Industries			

The above described areas represent the main cross-sectorial opportunities emerging from information collected during the survey and in-depth interview activities. In order to confirm these cross sectoral cooperation opportunities, further investigation and participatory discussion is required, which is expected to occur during the EDP process offering further insights on the identified areas and integrating the strengths, weaknesses, opportunities and threats outlined in the report.

After processing all information obtained from the qualitative mapping process, the following vertical priority areas and sub-areas are proposed as being subject to further elaboration within the EDP:

1) Information and Communication technologies (ICT) sector

- Software development (sub-area)
- Computer Programming Services (sub-area)
- Telecommunication Services (sub-area)
- Advanced ICT services including IOT, AI, Machine Learning (potential sub-area)

2) Green Energy

- Renewable Energy Sources (sub-area)
- Energy Efficiency Measures (sub-area)

3) Creative Industry

- Marketing and Digital Creation Services (sub-area)

4) Food Processing

5) Wood Processing

There are certain elements related to the justification of priority areas and sub-areas that need to be addressed during the EDP. The identification of stakeholders should be created by having in mind an expansion of the list from the business sector to beyond producers. As per qualitative mapping stakeholders involved, the value chain represented is short since the companies involved produce and export themselves suggesting a lack of wholesalers facilitating sales on international markets or innovative companies/ clusters in the sectors.

Annex 1 SWOT Analysis

<p>The food processing industry is reported to have potential for growth and the application of modern technologies can increase production capacities and compliance with international standards. Investments are needed by operators in order to reach higher production scales and enhance supply chain integrations with the following phases of the value chain.</p>	
<p>Strengths</p> <ul style="list-style-type: none"> • High demand for essential food products • Limited negative impact from COVID-19 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Lack of qualified human resources • Insufficient access to finance • Low to moderate digitalization levels • Low cooperation with academia and research institutions in terms of R&D
<p>Opportunities</p> <ul style="list-style-type: none"> • Innovative individual companies reflected by different technology usage during production process • Exports 	<p>Threats</p> <ul style="list-style-type: none"> • Shortage of raw materials, particularly milk in the dairy manufacturing industry • Competition from other countries, especially regional countries

<p>The wood processing industry is reported to have potential for growth and the application of modern technologies can increase production capacities and export activities.</p>	
<p>Strengths</p> <ul style="list-style-type: none"> • High export potential • Proximity to European markets • Price competitiveness 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Lack of qualified human resources • Insufficient access to finance • Moderate digitalization levels • Low cooperation with academia and research institutions in terms of R&D • Low funding opportunities for investing in R&D
<p>Opportunities</p> <ul style="list-style-type: none"> • Expansion of export activities 	<p>Threats</p> <p>Workforce shortage due to potential migration</p>

<p>Green Energy is reported to have great potential for growth and the application of modern technologies can increase production capacities and increase Kosovo's reliance on RES.</p>	
<p>Strengths</p> <ul style="list-style-type: none"> ● increased demand for energy ● increased focus on renewables 	<p>Weaknesses</p> <ul style="list-style-type: none"> ● High need for investment, especially infrastructure ● Issues linking to the electricity grid ● Lack of research and academic stakeholders for effective collaboration in the field of R&D ● Workforce qualifications and sectoral needs mismatch
<p>Opportunities</p> <ul style="list-style-type: none"> ● Opportunity to strengthen the country's energy balance with RES ● Opportunity to benefit from MCC programs and other EU green agendas 	<p>Threats</p> <ul style="list-style-type: none"> ● International competition on renewables ● Small market size making it difficult to advance technologically ● Postponed investment plans due to COVID-19

<p>ICT is reported to have great potential for growth and to be one of the strongest sectors in the country. Investment in innovation can further expand the sector and its export capacities. The advancement of the sector can also have positive spillovers to other sectors in the country, mainly by increasing technological advancement and digitalization.</p>	
<p>Strengths</p> <ul style="list-style-type: none"> ● Export orientation and export opportunities ● Competitive Workforce in terms of cost of labor ● Potential for Innovation ● Positive impact from COVID-19 	<p>Weaknesses</p> <ul style="list-style-type: none"> ● Great workforce mobility opportunities and potential brain drain ● Curricular mismatch between market requirements and offer coming from the educational system ● Limited R&D activities and R&D funding within the higher education and research system
<p>Opportunities</p>	<p>Threats</p>

<ul style="list-style-type: none"> • Opportunity to enter new markets and expand to existing markets • Opportunity to enter added value segments with a lower cost offer 	<ul style="list-style-type: none"> • Competition coming from developing countries (regional countries included) with price competitiveness. • Threats from international companies coming to Kosovo and pushing production/service costs up
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<p>Creative Industry is reported to have great potential for growth and be a large contributor to the service sector in the country. The advancement of the sector can also have positive spillovers to other sectors in the country, mainly by increasing digitalization and marketing opportunities.</p>	
<p>Strengths</p> <ul style="list-style-type: none"> • Export orientation and export opportunities • Competitive Workforce in terms of cost of labor 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Lack of qualified human resources linked to the gap between skills obtained in the education system and those needed in the labor market. • Insufficient access to finance- mainly since digital assets are not being counted as collateral by banks, limiting borrowing capacities. • No fully functional online payment services and limited access to international platforms • Limited R&D activities and R&D funding within the higher education and research system
<p>Opportunities</p> <ul style="list-style-type: none"> • Opportunity to enter new markets and expand to existing markets 	<p>Threats</p> <ul style="list-style-type: none"> • Competition coming from developing countries (regional countries included) with price competitiveness. • Threats from international companies coming to Kosovo and pushing production/service costs up.

Annex 2 Survey Questionnaires

1. Business Survey

A. Business Profile

A1. Can you please specify which of the following you represent?

1. a company
2. a cluster
3. an association of businesses

A2. In case you are a business please write down the Business Name.

[_____]

A3. In case you are an association or cluster, please write down the Name.

[_____]

A4. Year of Establishment [_____]

A5. What size is your business (by number of employees)?

1. Micro enterprise (1-9 employees)
2. Small enterprise (10-49 employees)
3. Medium enterprise (50-249 employees)
4. Large enterprise (250 and more employees)
5. Don't know/No answer

A6. Please tell us what are the main sub sectors of your business? (if not listed, please select other and describe- you can select up to three sub sectors, the NACE rev.2 Codes are included)

B. Market potential

This section contributes to explore the potential of the regional, local and Kosovo market to grow, based on both the perception and the existing conditions of the companies.

B1. Where do you see most market growth potential for your business in the near future?

1. Domestic market
2. Foreign markets (i.e., exports)
3. Equally in the domestic and in the foreign markets
4. Neither in the domestic nor in the foreign markets
5. Don't know/No answer

B2. Did the number of competitors in your market change in the last three years?

1. Yes, it increased
2. Yes, it decreased
3. It remained the same
4. Do not know/No answer

C. Research and Innovation Potential

This section contributes to exploring business potential for participating or leading research and development projects, introducing innovative products or processes, and playing as a determinant for higher competitiveness for the reference sector in Kosovo.

- C1. In the last 5 years or since you founded the company, has your company introduced new or significantly improved technology?
- C2. In the last 5 years or since you founded the company, has your company acquired any patent?
- C3. Does your company plan to invest more in technology in the next 3 years?
- C4. Does your company carry out research and development activities?
- C5. Do you have collaborations with academia or research institutes?
- C6. Do you have collaborations with other companies in Research & Development activities?
- C7. If you carry out research and development activities, please specify in what domain are those:
1. New products
 2. New processes
 3. Improvement to existing products
 4. Improvement to existing processes (digitalization or technology innovations)
 5. Improvement to existing processes (energy-efficiency, cost-efficiency)
 6. We don't carry out research and development activities
- C8. What do you think are the main determinants of innovation potential of your company?
1. Market structure
 2. Firm Size
 3. Technological opportunity
 4. Collaboration with R&D partners
 5. Appropriability conditions
 6. Finance
 7. Other Factors, please specify (_____)
 8. The company does not have an innovation potential
- C9. To what extent do the following factors prevent your company in carrying out innovation activities? (Barriers to innovation)
1. Firm size
 2. Lack of funds/finance
 3. Lack of qualified workforce
 4. Lack of technologies/infrastructures
 5. Low demand from the market/sector
 6. Unfavorable legislation/regulation/ standards
 7. Other Factors, please specify (_____)

D. Sector potential

This section contributes to explore the innovative potential of the whole sector to lead the growth and competitiveness of the Kosovo economy.

- D1. Can you please tell us what are the factors that make your sector strong (you can select the two most important factors)?

1. Export- oriented
2. Research and Development potential and Know-how/ Innovation
3. Proximity to markets (transportation costs, distance) and distribution networks
4. Quality workforce
5. Economies of scale / low production costs (including labor costs)
6. Access to Natural Resources
7. Strong brands
8. Research Infrastructures
9. Transport Infrastructure
10. Subsidies and Grants
11. Tax friendly regime
12. Low cost of regulatory compliance
13. Access to Finance
14. Other, please specify (_____)

D2. Which are, in your opinion, the main weaknesses of the sector (you can select the two most important factors)?

1. Low potential to export
2. Low capacities for Research and Development and Innovation
3. Poorly qualified workforce
4. Mismatch Education – Labor market
5. Low quality of standard certifications
6. Poor know-how and lack of new technology
7. Lack of capital
8. Unfavorable tax regime
9. Low access to finance
10. Other, please specify (_____)

D3. Do you think that your sector or sub sectors need more adequate skills? If so, please explain

D4. What other sector, if any, is the most connected with the one of your company?

1. ICT
2. Construction
3. Agriculture
4. Food Processing
5. Marketing and Advertising
6. Wood Processing
7. Transportation/Logistics
8. Retail/Wholesale
9. Manufacturing
10. Banking
11. Energy

D5. What part of your sector has great potential and you think should be supported more?

(_____)

D6. Please read the following list of issues and then rate them from the most problematic to the least (scale 5 to 1), where the 5 is most problematic, 1 is least problematic.

	Issues/Factors	5	4	3	2	1	Dk/Na
1	Water						
2	Customs Procedures (Export-Import)						
3	Business permits						
4	Tax Administration Procedures						
5	Tax Burden						
6	Access to land						
7	Mobile coverage						
8	Labor regulations						
9	Internet service						
10	Transport						
11	Price of land						
12	Courts/conflict resolution						
13	Electricity						
14	Skilled workforce						
15	Informal sector						
16	Crimes and theft						
17	Corruption						
18	Political instability						
19	Macroeconomic Environment						

E. Value Chain positioning

This section contributes to identify the weight of Value Chains in the innovative potential of Kosovo.

E1. Where (geographically) is your Value Chain based?

(_____)

E2. Which stage of the Value Chain does your company operate? (you can select one)

1. Technological development component (design and R&D activities)
2. Inbound logistics (raw material supplier)
3. Operations (production activity of goods and services, transformation from raw material into a finished product)
4. Outbound logistics (distribution activities)
5. Marketing and sales (Marketing and communication activities, retail)
6. Services (including maintenance, refund, replacement service, customer care...)

F. Impact of COVID-19

This section contributes to explore the main effects on business and sector performance of pandemic crisis.

F1. How has the number of employees in your company changed over September 2019 – September 2021? Increase

1. Decrease
2. Remain the same

3. Don't know/ No answer

F2. How were your sales affected by the crisis?

1. Increase
2. Decrease
3. Remain the same
4. Don't know/ No answer

F3. Have your investment plans in your business been affected by the crisis and how?

1. Yes (delayed indefinitely)
2. No
3. Delayed Investment for 1 year
4. Don't know/ No answer

2. Academia/Think Tanks/Research Institutions Survey

A. Stakeholder Profile

A1. What type of institution do you represent?

1. Public university
2. Private university
3. Public Research Institute
4. Private Research Institute
5. Science &Technology /Industrial Park Consortium

B. Research and Innovation potential

This section contributes to explore Higher Education and Research Institutions potential for participating or leading research and development projects, and playing as a determinant for higher competitiveness of Kosovo.

B1. Does your institution engage in research and development and innovation activities?

B2. In the last 5 years has your institute obtained any patent?

B3. If yes, what kind of research activity does your institution carry out?

- a) Fundamental research;
- b) Applied research;
- c) Experimental development;
- d) Innovation research;
- e) Technology transfer;
- f) Other

B4. In which areas does your institution engage most its research and development activities/projects? (up to two options)

- a) Humanities
- b) Social sciences (including law, economy and finance, psychology, pedagogy)
- c) Natural science and mathematics (including math, physics, chemistry, geology)
- d) Biomedical sciences (including biophysics, ecology, botany, zoology, agro, medicine)
- e) Technological sciences (including processing, engineering, electronics/electrical, construction, transport)

B5. Does your institution collaborate with businesses or other academic or research entities for research activities/projects?

1. Yes, with businesses
2. Yes, with university/research institutes
3. No
4. Other (Please Explain)

B6. If yes, in which of the following sectors?

1. ICT
2. Wood Processing Industry
3. Agrifood/Food Processing Industry
4. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
5. Green Energy

B7. Does your institution have a technology transfer unit?

1. Yes
2. No
3. Other (Please Explain)

B8. How would you define the level of digitalization in your institution? (i.e. digitalization of processes, business models, communication and marketing, improvement of broadbands, collection of data, ...)

1. High, with current improvements and upgrades
2. Good, with occasional improvement and upgrades
3. At normal level, not showing any upgrade or improvement
4. Low, not showing any improvement
5. Very Low, almost absent

C. Sector and market potential

This section contributes to explore the innovative potential of the whole sector to lead the growth and competitiveness of the Kosovo economy.

C1. What are the main barriers in doing research development innovation in Kosovo (you can select the two most important factors)?

1. Lack of researchers
2. Poor competencies
3. Poor institutional organization,
4. Lack of funds
5. Lack of technologies/infrastructures
6. Low demand from the market/sector
7. Unfavorable legislation/regulation/ standards
8. Other Factors, please specify (_____)

C2. Does your institution receive funds for conducting research development innovation?

1. Yes, national
2. Yes, international
3. Yes, combination national/international
4. No

C3. According to your perspective, which sector has the most potential for its Research and Development and Innovation (please rank from the one that has the highest potential to the one that has the lowest)?

1. ICT
2. Wood Processing Industry
3. Agrifood/Food Processing Industry
4. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
5. Green Energy

C4. Considering your first choice from the previous question, which are the main strengths of the sector?

1. Export- oriented
2. Research and Development potential and Know-how/ Innovation
3. Proximity to markets (transportation costs, distance) and distribution networks
4. Quality workforce
5. Economies of scale / low production costs (including labor costs)
6. Access to Natural Resources
7. Strong brands
8. Research Infrastructures
9. Transport Infrastructure
10. Subsidies and Grants
11. Tax friendly regime
12. Low cost of regulatory compliance
13. Access to Finance
14. Other, please specify (_____)

C5. Based on your perception, do you think that the Innovation and Research and Development potential of your country is fully supported?

1. Yes, it is fully supported
2. No, it is not fully supported
3. It is partially supported
4. Other (Please Explain)

C6. Do you think that your institution provides adequate skills and competences for the Kosovo market or regional market?

1. Yes
2. No
3. Partially
4. Other (Please Explain)
5. Not applicable

C7. If yes, what do you think would improve skills and reduce the labor market mismatch?

1. Improve the quality of teaching
2. Diversifying curricula and adapt to new professional profiles
3. Introduce or improves Doctoral and Post grade offer
4. Introduce new masters
5. Increase cooperation with businesses for research activity
6. Increase cooperation with businesses for internship opportunities
7. Increase the number of business incubators and think tank
8. Other, please specify (_____)

D. COVID-19 Impact

This section contributes to explore the main effects of the pandemic crisis on performance in Higher Education and Research institutions.

D1. Has your research development innovation activity changed due to COVID-19 impact?

1. Yes, it has increased
2. Yes, it has decreased
3. No, it has not significantly changed

D2. What do you think is the sector most affected by COVID-19 in terms of innovation and growth?

1. ICT
2. Wood Processing Industry
3. Agrifood/Food Processing Industry
4. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
5. Green Energy

3.Civil Society Survey

A. Stakeholder Profile

A1. What kind of entity do you represent?

1. National or local or regional association
2. Non-governmental organization
3. Private organization

A2. Can you please tell us the name of the entity you represent? (Optional)

A3. Does the activity of your entity contribute to the development of any of the following sectors (please select all that apply)?

1. ICT
2. Green Energy
3. Wood Processing Industry
4. Agrifood/ Food Processing Industry
5. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
6. All of the above
7. Other (Please specify)
8. None of them

A4. What do you think is the most promising sector for Kosovo?

1. ICT
2. Green Energy
3. Wood Processing Industry
4. Agrifood/ Food Processing Industry
5. Creative Industries (Advertising, Graphic Design, Video Production, Fashion Design)
6. All of the above
7. Other (*Please specify*)

A5. Why? _____

A6. Have you been involved in any project to increase productivity/competitiveness of the Kosovo economy in the last three years?

1. Yes
2. No
3. Other (Please Explain)

A7. Please briefly specify the objective of the project.

A8. Have you been involved in any project for social innovation in the last three years?

1. Yes
2. No
3. Other (Please Explain)

A9. Please briefly specify the objective of the project

A10. Do you collaborate with other entities for your activities?

1. Universities and/or research institutes
2. Public administrations
3. Companies
4. Other associations/NGOs
5. No

A11. Are involved in a policy dialogue (including public consultations) or cooperate with government and public administration (central and local) for improving the economic environment in Kosovo?

1. Yes (Please name the institutions)
2. No
3. Other (Please Explain)

A12. How would you define the level of digitalization in your institution/association/organization? (i.e. digitalization of processes, business models, communication and marketing, improvement of broadbands, collection of data, ...)

1. High, with current improvements and upgrades
2. Good, with occasional improvement and upgrades
3. At normal level, not showing any upgrade or improvement
4. Low, not showing any improvement
5. Very Low, almost absent

4. Government Survey

A. Stakeholder Profile

A1. Can you please tell us the name of the institution you represent?

B. Kosovo Market

B1. According to your perspective, which sector has the most potential for its Research and Development and Innovation (please rank from the one that has the highest potential to the one that has the lowest)?

1. ICT
2. Wood Processing Industry
3. Agrifood/Food Processing Industry
4. Creative Industries ((Advertising, Graphic Design, Fashion Design, Media etc)
5. Green Energy

B2. Considering your first choice from the previous question, which are the main strengths of the sector?

1. Export- oriented
2. Research and Development potential and Know-how/ Innovation
3. Proximity to markets (transportation costs, distance) and distribution networks
4. Quality workforce
5. Economies of scale / low production costs (including labor costs)
6. Access to Natural Resources
7. Strong brands
8. Research Infrastructures
9. Transport Infrastructure
10. Subsidies and Grants
11. Tax friendly regime
12. Low cost of regulatory compliance
13. Access to Finance
14. Other, please specify (_____)

B3. What factors you think are the main barrier to innovation potential in Kosovo in the ICT sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures
5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards
7. Other Factors, please specify (_____)

B4. What factors you think are the main barrier to innovation potential in Kosovo in the Agri-Food sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures
5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards
7. Other Factors, please specify (_____)

B5. What factors you think are the main barrier to innovation potential in Kosovo in the Wood Processing sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures
5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards
7. Other Factors, please specify (_____)

B6. What factors you think are the main barrier to innovation potential in Kosovo in the Energy sector (you can select the two most important factors)?

- 1.Limited company size
- 2.Lack of funds/finance
- 3.Lack of skills and competences
- 4.Lack of technologies/infrastructures
- 5.Low demand from the market/sector
- 6.Unfavorable legislation/regulation/ standards
- 7.Other Factors, please specify (_____)

B7. What factors you think are the main barrier to innovation potential in Kosovo in the Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc) sector (you can select the two most important factors)?

1. Limited company size
2. Lack of funds/finance
3. Lack of skills and competences
4. Lack of technologies/infrastructures
5. Low demand from the market/sector
6. Unfavorable legislation/regulation/ standards

7. Other Factors, please specify (_____)

C. Research and Development Potential

C1. Does your institution have funds for research and innovation activities?

C2. According to your perspective, which sector has the most potential for its Research and Development and Innovation (please rank from the one that has the highest potential to the one that has the lowest)?

1. ICT
2. Green Energy
3. Wood Processing Industry
4. Food Processing Industry
- D. Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc)
5. Other (Please specify)

C3. Considering your first choice from the previous question, which are the main strengths of the sector?

1. Export- oriented
2. Research and Development potential and Know-how/ Innovation
3. Proximity to markets (transportation costs, distance) and distribution networks
4. Quality workforce
5. Economies of scale / low production costs (including labor costs)
6. Access to Natural Resources
7. Strong brands
8. Research Infrastructures
9. Transport Infrastructure
10. Subsidies and Grants
11. Tax friendly regime
12. Low cost of regulatory compliance
13. Access to Finance
14. Other, please specify (_____)

C4. Do you have a dialogue with other public institutions (central and local) regarding Research and Development activities and innovation support?

1. Yes, current dialogue
2. Yes, but not very often
3. No

C5. Do you involve other stakeholders in consultations on how to spur the innovation potential and growth of the economy?

C6. Is there any program/action that aims to support specific sectors with innovation potential?

1. Yes (which sector.....)
2. No
3. Other (Please Explain)
4. I don't know

C7. Is your institution supporting or has supported Research and Development or innovation projects currently or in the last three years in one of the following sectors (ICT, Wood Processing, Agri-Food Processing, Creative Industries, Energy)?

C8. Did any Research and Development and innovation project you have been supporting have a positive impact on the territory? If so, please briefly explain why.

C9. How would you define the level of digitalization in your institution? (i.e. digitalization of processes, business models, communication and marketing, improvement of broadbands, collection of data, ...)

1. High, with current improvements and upgrades
2. Good, with occasional improvement and upgrades
3. At normal level, not showing any upgrade or improvement
4. Low, not showing any improvement
5. Very Low, almost absent

Annex 3 In-depth Interview Questionnaires

1. Businesses

Name of Representative:

Position:

Company Name:

Year of Establishment:

Sector:

Contact Email:

- Sectoral Dynamics
 - Do you consider your economic sector to be strongly developed? Why?
 - What makes it strong (export, human resources, innovation, access to finance...)?
 - Do you believe that your area may have significant growth and innovation potential in the next 5 years? Why?

- Country Dynamics
 - What are key economic sub-sectors and in which sectors are innovation networks / clusters present in Kosovo?
 - Which leading enterprises (i.e. large multinational firms and/ or key entrepreneurial innovators) operate in Kosovo?
 - Do they belong to the key economic sectors or are they situated in other sectors?
 - Which technologies, products, or global market opportunities do you think are promising for Kosovo's economy in the upcoming decade?
 - How internationalized is your regional economy (i.e. how export-oriented is your sector, how much as a % do you export if any, what is the level of foreign direct investment) – is your sector open in that respect? To which destinations do most exports go?

- Innovation dynamics
 - Do you consider your company as an innovative one (R&D activities/department, any patent, new brand/process/technology?)
 - What do you think are the main determinants of innovation potential of your company? (market structure, firm size, technology, collaboration with R and D partners, finance, others)
 - Do you think that regional research and innovation priorities and the type of support resources (grants, loans, guarantees, vouchers, business services, access to laboratories, qualified personnel, and cooperation partners, etc.) offered correspond to your needs? In general, do you think it is easy in your region to pursue innovative business ideas?
 - What are the main challenges your region is facing with respect to RD performance (i.e. what are the major bottlenecks for a better overall innovation performance)?
 - Which sectors are most active in this respect and where do you have potential for improvement?
 - What would be a suitable incentive / condition for you to decide to invest (more) into research, development and demonstration activities (inside your firm, or out-sourced to other firms or to public R&D providers)?
 - Are there investments from both the public and private side in place to complement your own resources and attract co-funding?
 - How well does the science / knowledge & creative sector interact with the regional economy (i.e. do you have industry-science co-operations, joint research infrastructures, and/or pro-active technology transfers, contract research, living labs, student placement schemes)?
 - Do local universities supply you with sufficient graduates– or do you need to look abroad for qualified personnel?

- Identify Sub Areas in each sector
 - Which subfields in your sector do you operate in? (provide a list of all for them to choose from)
 - Which subfields in your sectors are the ones with greater growth and innovation potential that you would like to expand to? (we will provide a list of all for them to choose from, similar to the list in the survey question with NACE Rev2 codes)

- Identify horizontal support areas
 - Do you collaborate with firms that operate in other sectors (ICT, Wood, Food, Creative, Energy)?
 - In which fields could enhanced cross sectoral cooperation create competitive advantages? why? (With which sector do you think collaboration would be beneficial? -list the 5 sectors and allow other options)

- Impact of pandemics in the private sector dynamics
 - Has your firm had a direct impact from the pandemic crisis?
 - Was the number of employees affected by the crisis?
 - Have the sales been affected by the crisis?
 - Have your investments been affected by the crisis?
 - Has access to finance been affected by the crisis?
 - Did the pandemics influence the investment in innovation/digitalization of services/operations?

- Opportunities and constraints to growth
 - What are the main challenges your country will be facing in the next decade (economically, environmentally, socio-demographic etc.)?
 - What are the main opportunities / emerging sub-sectors that you would like to engage with?
 - How can the business sector and the science & creative sector help in responding jointly to these challenges and opportunities?
 - Do scientific, technological, creative or skills strengths and specializations fit to economic needs? Where is the best match – where do you see the strongest mismatch?

- Value Chain
 - Where (geographically) is your Global Value Chain based?
 - Which stage (of the Global Value Chain) does your company operate?
 - (Technological development component (design and R&D activities, Inbound logistics (raw material supplier),
 - Operations (production activity of goods and services, transformation from raw material into a finished product),
 - Outbound logistics (distribution activities),
 - Marketing and sales (Marketing and communication activities, retail,
 - Services (including maintenance, refund, replacement service, customer care...)

2. Government

Demographics

Name of Representative:

Position:

Institution Name:

Contact Email:

- What is the strategic approach to economic growth and innovation policy in your region (long term vision, strategic concepts and priorities...)?
- What capacities do you have in your government for strategy development and priority setting? Could you set up a policy development process with your own competencies and resources or would you have to involve external experts?
- Does the innovation support in Kosovo cover only capacity building measures for innovation or also facilitate the emergence of demand for innovations?
- Does Kosovo have capacities to cover only strategy planning or also implementation of strategies?
- Besides science or technology driven innovation, which other forms of innovation / economic transformation are supported in Kosovo? Provide evidence/examples
- Is there any innovation project that has been implemented in the last five years that has been successful? Explain.
- How stable and predictable are public funds for innovation policy measures in your region?
- According to your perspective, which sector/s has the most potential for its Research and Development and Innovation? (ICT, Wood Processing Industry, Agrifood/Food Processing Industry, Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy)
- What are the main strengths of the sector/s? (Export- oriented, Research and Development potential and Know-how/ Innovation, Proximity to markets (transportation costs, distance) and distribution networks, Quality workforce, Economies of scale / low production costs (including labor costs), Access to Finance...) Why? Was there any previous study done or is this just your perception?
- What factors you think are the main barrier to innovation potential in Kosovo in the chosen sectors (you can select the two most important factors)? (Limited company size, Lack of funds/finance, Lack of skills and competences, Lack of technologies/infrastructures, Low demand from the market/sector, Unfavorable legislation/regulation/ standards....)
- Do these factors apply to all five sectors, or only some...please specify?
- Does your institution have funds for research and innovation activities?
- Do you have a dialogue with other public institutions (central and local) regarding Research and Development activities and innovation support? Please explain?
- Do you involve other stakeholders in consultations on how to spur the innovation potential and growth of the economy?
- Is there any program/action that aims to support specific sectors with innovation potential? If so, which sector?
- Is your institution supporting or has supported Research and Development or innovation projects currently or in the last three years in one of the following sectors (ICT, Wood Processing, Agri-Food Processing, Creative Industries, Green Energy)?

3. Civil Society

Demographics

Name of Representative:

Position:

Institution Name:

Contact Email:

- Which economic sectors in your region are strong in R&D investment and technology development? Where do they get their new scientific and technological knowledge? From regional universities or from international R&D partners?
- Does the activity of your entity contribute to the development of any of the following sectors? (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy).
- What do you think is the most promising sector for Kosovo? (ICT, Wood Processing Industry, Agrifood/Food Processing Industry, Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy) Why?
- Have you been involved in any project to increase productivity/competitiveness of the Kosovo economy in the last three years? If yes, please explain.
- Do you collaborate with other entities for your activities? (Universities and/or research institutes, Public administrations, Companies, Other associations/NGOs)
- Are involved in a policy dialogue (including public consultations) or cooperate with government and public administration (central and local) for improving the economic environment in Kosovo?
- Is your organization involved in scientific/research activities with the local/regional stakeholders, with an interest to make advancements in the sector or area of interest of your CSO?
- Who do you think is responsible for R&D and science based improvements in the area of interest of your CSO?

4. Academia

Demographics

Name of Representative:

Position:

Institution Name:

Faculty:

Contact Email:

- Sectoral Dynamics
 - Which of the following areas do you think has higher growth potential? (ICT, Energy, Creative Industries, Food Processing, Wood Processing)
 - What makes it have high growth potential (export, human resources, innovation potential,...)?
 - In the chosen sector/s, which sub sectors do you think have the highest potential?

- Main opportunities/constraints to growth
 - Does current academic education fit to the needs of the regional economy – do regional employers absorb graduates or are graduates forced to look elsewhere? If not, what do you think would improve skills and reduce the labor market mismatch/align education with the labour market? (Improve the quality of teaching, diversifying curricula and adapt to new professional profiles, introduce or improve, Doctoral and Post grade offer, introduce new masters, increase cooperation with businesses for research activity, increase cooperation with businesses for internship opportunities, increase the number of business incubators and think tank)

- Innovation
 - Do you collaborate with businesses in terms of R and D and how much? (If yes, in which of the following sectors, ICT, Wood Processing Industry, Agrifood/Food Processing Industry, Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy)
 - Which economic sectors in your region are strong in R&D investment and technology development? Where do they get their new scientific and technological knowledge? From local universities or from international R&D partners (i.e. employ/engage foreign experts or receive knowhow transfer when they purchase new technology)?
 - Are people (incl. young people, university graduates, etc.) keen to start up their own business or do they rather prefer jobs in established businesses or public sector? If not, what are the main barriers?
 - How favorable are working conditions for researchers in your region? How much mobility between the Government funded public research institutes and the private sector does exist in your region (i.e. are graduates/engineers/ professors moving easily between universities and firms and back)?
 - How many co-operations with other international lead institutions does your institution have?
 - How well does the science / knowledge & creative sector interact with the regional economy (i.e. do you have industry-science co-operations in your region, joint research infrastructures, and/or pro-active technology transfers, contract research, student placement schemes)? Which sectors are most active in this respect and where do you have potential for improvement?
 - Does your institute have any patents? If yes, what kind of research activity does your institution carry out? (Fundamental research; Applied research; Experimental development; Innovation research; Technology transfer; ...)
 - In which areas does your institution engage most its research and development activities/projects? (Humanities, Social sciences (including law, economy and finance, psychology, pedagogy), Natural science and mathematics (including math, physics, chemistry, geology), Biomedical

- sciences (including biophysics, ecology, botany, zoology, agro, medicine), Technological sciences (including processing, engineering, electronics/electrical, construction, transport))
- What are the main barriers in doing research development innovation in Kosovo (you can select the two most important factors)? (Lack of researchers, Poor competencies, Poor institutional organization, Lack of funds, Lack of technologies/infrastructures, Unfavorable legislation/regulation/ standards, low market demand...)
 - Does your institution receive funds for conducting research development innovation? (if so from whom?)
 - According to your perspective, which sector has the most potential for its Research and Development and Innovation (ICT, Wood Processing Industry, Agrifood/Food Processing Industry, Creative Industries (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy).
 - Based on your perception, do you think that the Innovation and Research and Development potential of your country is fully supported?
- Impact of pandemics
 - Has your research development innovation activity changed due to COVID-19 impact? How?
 - What do you think is the sector most affected by COVID-19 in terms of innovation and growth? (Advertising, Graphic Design, Fashion Design, Media Production etc), Green Energy).

Annex 4 Timeframe

The qualitative analysis is conducted by a local expert in charge of collecting data and information on the territory. The proper implementation of the activities is ensured by the supervision of the JRC. The activity starts approximately in December 2021 and the conclusion is expected at most in May 2022. Below is reported a table with main operational steps, expected outputs and corresponding deadline.

Outputs	Deadline
Survey Questionnaire Development	15 November 2021
List of Stakeholders	30 November 2021
In-depth Interview Questionnaire Development	10 January 2022
Intermediate Annex including the results of the survey	31 January 2022
Intermediate Annex including the results of 50% of the interviews scheduled	15 March 2022
Intermediate Annex including the results of 50% of the interviews scheduled	30 April 2022
Final Report	15 May 2022

Annex 5 List of interviewees

	Nr.	Representative	E-mail	Institution
Academia	1	Besnik Qehaja	besnik.qehaja@ubt-uni.net	University of Business and Technology
	2	Hëna Maloku	hena.maloku@uni-pr.edu	University of Prishtina
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	5	Ekrem Gjokaj	e.gjokaj@ibcmirovica.eu	IBC-M
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	4	Ganimete Huruglica	Ganimete.Huruglica@kfw.de	KFV
	5	Liza Marku	lizamarku@gmail.com	Millenium Foundation
	6	Arjeta Pajaziti	apajaziti@gmail.com	Shoqata e Grave ne Energji
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	11	Arieta Vula Pozhegu	kosovawood@yahoo.com	Shoqata e Perpunuesve te Drurit
	12	Hartim Gashi	hartimgashi@hotmail.com	Pepeko
	13	Arta Istrefi	arta.istrefi@gmail.com	Women Entrepreneurs Kosovo
Government	1	Laura Zherka	laura.zherka@rks-gov.net	MIET
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	3	Agim Kukaj	agim.kukaj@rks-gov.net	Ministry of Economics
	4	Lum Mita	lum.mita@rks-gov.net	Energy Efficiency Fund
	5	Dije Rizvanolli	dije.rizvanolli@rks-gov.net	Ministry of Finance
	6	Sabit Gashi	sabit.gashi@rks-gov.net	Ministry of Economics
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	8	Valbone Dushi	valbone.dushi@rks-gov.net	Ministry of Industry, Entrepreneurship and Trade

	9	Qamile Sinanaj	qamile.sinanaj@rks-gov.net	MEST
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