Interreg Alpine Space

AlpGov

Template "Documentation of strategic sectoral implementation initiatives" (D.T2.2.3)

Description of initiative

Title of implementation initiative	A-RING Project
State of implementation	☐ Planning phase ☒ Implementation phase ☐ Implemented
Implementation period (mm/yyyy-mm/yyyy)	10/2019-03/2022
Name of project partner	University of Milano
Acronym of project partner	UNIMONT
Contact person / Author of document (name, surname, e-mail address)	Stefano Sala, stefano.sala1@unimi.it
Main responsible EUSALP Action Group	AG1
Other EUSALP Action Groups involved	☐ AG 1 ☒ AG 2 ☐ AG 3 ☐ AG 4 ☐ AG 5 ☐ AG 6 ☐ AG 7 ☐ AG 8 ☐ AG 9
Stakeholders involved	• Fachhochschule Vorarlberg GmbH (AT) • Ministrstvo za izobraževanje, znanost in šport (SI) • Univerza v Ljubljani (Fakulteta za upravo) (SI) • Fachhochschule Kempten – Hochschule für angewandte Wissenschaften (DE) • Hochschule Konstanz Technik, Wirtschaft und Gestaltung (DE) • Regional management Burgenland GmbH (AT) • Associazione tra gli industriali della provincia di Belluno (IT) • Area Science Park (IT) • Lombardy Region (IT) • Plastipolis, pôle de compétitivité Plasturgie et Composites (FR) • Università della Svizzera Italiana (CH)
Description	Most of EUSALP regions developed Smart Specialization Strategies S3/RIS based on EC requirements however there is still a little focus on a transnational approach of the triple helix for the strategic Alpine Region's topics, (i.e.

	Digital Divide, Climate Change, Biodiversity conservation, Advanced Manufacturing, Tourism, ICT).
	A-RING aims to tackle the major challenges with joint R&I approach steering EU Open Innovation path and foster the alignment between different R&I policy initiatives and institutional frameworks to effectively address societal challenges.
Coherence with EUSALP Action Plan	The project is in line with the AG1 objectives of elaborating the Research & Innovation agenda for the Alpine Region and exploring how to foster and promote the alignment and coordination of R&I initiatives / measures. Moreover, the A-RING project fosters the discussion among relevant stakeholders for R&I processes (Academia, Public Authorities, SMEs).
	The results of the project are also the background for the Strategic Policy Area Innovation Hub for Green Business, developed in AlpGov2 project together with Lombardy Region and AG2. This emerges from a Deliverable (D.T.1.2.1 – S3 RIS Policy Report) in which the PAs selected Sustainable Innovation, Digital Transformation and Key Enabling Technologies as their priorities for the 2021-27 programming period.
Proposed targets and indicators	Targets: universities and research centres, public authorities, innovation hub, SMEs, R&I stakeholders
	Indicators:
	Number of stakeholders involved in the workshops;
	Number of private investments and public funding dedicated to innovation and research industrialization and technologic transfer;
	Definition of common priorities (Blueprint);
	Implementation of an alpine policy (Seed Lab) supporting the Innovation Alpine Network between academic and SME world
Impact assessment	A-RING Project is positioned in the phase II of the COWI three-phase development model since: based on the already developed capacity and performance of internal individuals/entities, it impacts mainly on the development of the external capacity of EUSALP stakeholders to respond to the available incentives, develop project ideas, engage in cooperation
	Briefly describe the impact of the initiative according to the COWI three-phase development model (https://www.alpine-region.eu/publications/study-macroregional-strategies-and-their-links-cohesion-policy, pages 86-89)

Appendix: Documentation material (ex. agendas, lists of participants, publications, minutes, photos, etc.)

Attached:
R&I Region Talk Agenda November 23 – 2021
Slide
Dt.1.2.1 – S3 Policy Report

Interreg Alpine Space 2019-2022

Project Acronym	**A-RING**
Project Title	Alpine Research and INnovation capacity Governance
Project Number	848
Activity	A.T.1.2 Identification of a shared R&I path
Deliverable title	D.T1.2.1 S3/RIS Policy report: Transnational report with focus on current and foreseen transnational activities within each regional S3/RIS strategy and on transnational R&I topics, integrated with results from available RIS3 Comparative analysis, focused on AR area.
Date of preparation	5.10. 2020
Status (F: final; D: draft; RD: revised draft)	Final
Authors	Maja Klun, Žiga Kotnik, Sabina Bogilović
Contributors	Comments to the content and distribution of survey were provided by all PPs

Contents

Table of charts, figures and tables

1 Executive Summary

The EUSALP regions have developed S3/RIS based on EC requirements, but the R&I triple helix still focuses little on a transnational approach of strategic topics for the Alpine Region (AR) in order to better exploit economic opportunities. Furthermore, there is no strategic transnational cooperation framework for topics of specific Alpine importance, e.g. Digital Divide, Climate Change, biodiversity conservation, etc., either between Public Authorities (PA) or between academia and business sectors (BS), with limited transnational R&I on such topics.

Therefore, the main objective of this deliverable is to identify a common R&I path, focusing on current and foreseeable transnational activities within each regional S3/RIS strategy and on transnational R&I topics. More specifically, the main objective of this activity is to identify the topics that can be used for interregional cooperation in Alpine regions. At the same time, the activity contributes to the OT1 blueprint. OT1 is necessary to identify prospective R&I topics that can be of mutual interest to all AR or most of them.

The report is structured to first present the current EU Strategy for the Alpine Space (EUSALP) as a macro-regional strategy. Later, we describe how policymakers are currently supported at the EU level (EC JCR) and present networks of the Alpine region (e.g. ISCAR, EUROMONTANA) that promote research in the Alpine Space. To find useful results from other similar projects, we conducted an overview of projects (e.g. S3-4AlpCluster, BIFOCAlps, Next4PA) that help us to identify a common R&I path, focusing on the current transnational activities within each regional S3/RIS strategy. We provide detailed explanations on how selected projects can add value to this outcome and contribute to the A-RING project as a whole. As such, this document provides a more detailed overview of different EU projects and their benefits for OT1 and A-Ring.

Secondly, we analyse AR Interreg projects in the current financial period and find topics that have already been addressed in these projects. The aim is linking topics from the projects with topics that were defined in EUSALP and S3/RIS. The main objective of the analysis is to present topics that can be considered as having been dealt with in the projects and strategy documents in the individual Alpine regions. The aim was to find out if the ERDF funds (structural funds) of the only EU programme that focuses on the Alpine Region are in line with the priorities that the Regions have determined in their work programmes.

In addition, we use topics that are/have been addressed most frequently in AR countries and regions. This part of the Deliverable contributes to OT1, which should be designed through overview of past projects, in particular AlpGov and its comparative RIS3 analysis.

Thirdly, using a questionnaire for national and regional policymakers from all 7 countries, of which 5 are EU Member States (Austria, France, Germany, Italy and Slovenia) and 2 are non-

EU countries (Liechtenstein and Switzerland), and 48 regions across AR, we have carried out a detailed analysis of planned R&I topics (priorities) that are considered to be the most interesting for national and regional authorities now and in the AR future. The results of the questionnaire provide a basis for the identification of main themes (priorities) for future transnational cooperation in AR and between all stakeholders in the region (also in connection with future S3/RIS). Thus, we can identify the strategic R&I topics (priorities) for which synergetic and complementary cooperation between the PAs is needed in order to achieve improved Alpine multi-level governance and enhancement of Alpine territorial R&I resources and potentials. Results show that in the next programming period, the Alpine regions should focus their priorities on the following themes: digital transformation, service innovation and sustainable innovation. These priorities represent areas of common interest for most of the 48 Alpine regions analysed. They represent an added value for cooperation at the macro-regional level and can potentially make a significant contribution to promoting innovation, business support and the labour market. Highlighting these priorities could further strengthen the regional innovation potential while addressing existing regional challenges.

2 Introduction

2.1 S3/RIS and EUSALP

While facing one the most critical economic challenges since its inception, the European Union set up an ambitious economic policy for the 21st century. The EU vision for its social market economy was set out in the Europe 2020 strategy, which aimed at facing structural weaknesses through progress in three mutually reinforcing priorities[1]:

- smart growth, based on knowledge and innovation;
- sustainable growth, promoting a more resource efficient, greener and competitive economy;
- inclusive growth, fostering a high employment economy delivering economic, social and territorial cohesion.

Research, Innovation and Entrepreneurship are at the heart of Europe 2020 strategy and a crucial part of Europe's response to the economic crisis. Investments in these issues must have a strategic and integrated approach so as to maximise the European, national and regional research and innovation potential. The concept of "smart specialisation" (then Smart Specialisation Strategy SS3/RIS) has therefore been promoted also on a regional level by the Communication "Regional Policy contributing to smart growth in Europe 2020",

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[1] European Commission, (2012) "Guide to Research and Innovation Strategies for Smart Specialisations (RIS 3)", available at: http://s3platform.jrc.ec.europa.eu

where the design of national/regional research and innovation strategies for smart specialisation have been encouraged by the Commission as a means to deliver more targeted Structural Fund support and a strategic and integrated approach to harnessing the potential for smart growth and the knowledge economy in all regions[2]. Indeed, smart specialisation emerges as the key element for place-based innovation policies in Europe in the Programming Period 2014-2020, characterised by five elements:

- They focus policy support and investments on key national/regional priorities, challenges and needs for knowledge-based development, including ICT-related measures;
- They build on each country's/region's strengths, competitive advantages and potential for excellence;
- They support technological as well as practice-based innovation and aim to stimulate private sector investment;
- They get stakeholders fully involved and encourage innovation and experimentation;
- They are evidence-based and include sound monitoring and evaluation systems.

According to the S3, States and Regions have to first understand and then prioritise their most strategic areas of intervention in relation to research, innovation and entrepreneurship. Once set up, these areas of intervention will leverage not only local but also national and European financing. In this context, the European macro-region EUSALP (EUropean Strategy for the ALPine Region)[3] has to provide to member regions and states the opportunity to improve cross-border cooperation by identifying common goals and implementing them more effectively through transnational collaboration. EUSALP's mission statement is to balance development and protection through innovative approaches that strengthen the Alpine Region; its territories (7 countries, 2 of which non-EU members, and a total of 48 regions involved) present themselves as quite diversified in terms of languages, cultures and socio-economic conditions, therefore they are likely to produce and implement different national and regional/local S3 strategies. EUSALP has to envision if and where common S3 strategies (clusters) can be found and in what way common strategies can be prioritised by all the involved stakeholders in order to leverage more and more coordinated funding for the shared macro-regional objectives.

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[2] Available at: http://ec.europa.eu/regional_policy/sources/docoffic/official/communic/comm_en.htm

[3] A macroregional strategy, such as EUSALP, is an integrated framework endorsed by the European Council, which may be supported by the European Structural and Investment Funds, among others, to address common challenges faced by a defined geographical area relating to Member States and third countries located in the same geographical area that thereby benefit from strengthened cooperation, contributing to achievement of economic, social and territorial cohesion. See: https://www.alpine-region.eu/eusalp-eu-strategy-alpine-region .

The EUSALP Action Group 1 (AG1) is dedicated to fostering the implementation of an efficient Research and Innovation ecosystem across the Alpine Region (AR). The AG1 aims to develop and identify procedures, cooperation, supports, etc. for the R&I environment. EUSALP's Action Plan[4] identifies and presses members to focus on issues of specific relevance to the Alpine Region, but based on national/regional smart specialisation strategies, such as:

(1) agriculture and sustainable forestry sector based products and services throughout the complete value chain (including the pharmaceutical and wooden building sector),

(2) tourism sector (e.g., agro-tourism or health tourism, sustainable year-round tourism),

(3) energy sector for applying potential clean renewable energy production (i.e. with low or no emissions of air pollutants such as PM, renewable energy sources: wind and solar power; biomass and geothermal sources for heating, energy-storage building, increasing energy efficiency of hydropower),

(4) health sector in relation to: agriculture, with regards to the production of pharmaceutical products, tourism, focusing on therapeutic and recreational activities, and health services (including e-Health) in order to improve efficiency of healthcare.

(5) high-tech sector: further developments in the sector, e.g. linked to specific computer software (e.g. destination management systems, GPS-based 3D navigation and information systems or mobile apps to support visitors); high-end products based on specific Alpine Region raw material (e.g. pharmaceuticals); or high-end products linked to typical activities in the Alpine Region (e.g. ropeways, ski and boot manufacturers, climbing equipment or artificial snow-making installations).

Great support for these activities includes the forthcoming regional RIS3 strategies, such as the research and innovation (R&I) strategy for Smart Specialisation, which are a precondition for EU regions to receive funding from the EU budget (specially ERDF). Transnational cooperation can use potentials for scale and knowledge spill-overs, develop original areas of specialisation and overcome fragmentation of research. The cooperation should include researchers, policy makers and businesses. Cooperation should improve the sectoral structure as well[5]. For stakeholders, online support is available at the Online S3 Platform[6], which provides free tools and guides for Smart Specialisation strategy preparation and monitoring.

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[4] Available at https://ec.europa.eu/regional_policy/sources/cooperate/alpine/eusalp_action_plan.pdf.
[5] See more at http://www.s3platform.eu/guide/.
[6] Available at http://www.s3platform.eu/.

The coordination and cooperation effort in order to harmonise S3 implementation across the AR will require a triple helix approach[7] (Galvao et al., 2019). The triple helix approach consists of the involvement of the three main stakeholders of R&I, namely academia, business and PA/society, in a coordinated effort towards a shared goal. The approach evolved together with stakeholder theory (Freeman, 1980; Freeman et al., 2012) and the evolution of sustainable development discourse, finding a first configuration by Andrew Van de Ven (2007) in his theory of "engaged scholarship", where academics of all disciplines are invited to take an interest in real world problems and to engage with the private sector and PA in order to create theories, strategies and ways of implementing solutions to such problems. European Cohesion policy and strategy was designed to find stakeholder engagement solutions in order to achieve European socio-economic development. Therefore, this research will be particularly interested in finding the best ways to engage stakeholders towards reaching S3 goals, and this deliverable will take care of analysing previous AR experiences of triple helix engagement.

2.2 Research Scope and Objectives

Although S3/RIS have been developed in most EUSALP regions (as S3 platform shows), there has been limited inter-Alpine R&I cooperation. At the same time, we can observe limited development of overall R&I strategies regarding specific Alpine topics of interest (e.g. Digital Divide, Climate Change, Biodiversity conservation, Advanced Manufacturing) that are supported in the Joint declaration on the EU Strategy for the Alpine Region (EUSALP), 2019[8] and the Report on implementation of MRS, 2019[9]. These are the two main elements hindering AR's sustainable economic development as envisioned by the Cohesion Programme. It is thus of the utmost importance to understand what the shared S3 topics are among the AR members and to foster inter-regional cooperation towards their pursuit. For the Blueprint described in the project proposal (OT1), it is necessary to determine foreseen R&I topics that can be of mutual interest for all or most of the AR. The main goal of Blueprint OT1 for the shared R&I Agenda (SRIA) is to ensure a strong focus on AR characteristics and potentials, on shared ownership and R&I strategic positioning for S3 areas that most affect societal changes. OT1 will define shared priorities, objectives and operational and political and R&I actions and through a participatory process will involve triple helix in order to have

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[7] See more: Galvao, Anderson; Mascarenhas, Carla; Marques, Carla; Ferreira, João; Ratten, Vanessa (2019). Triple helix and its evolution: a systematic literature review. *Journal of Science and Technology Policy Management,* 10 (3): 812–833.

[8] Available at https://www.alpine-region.eu/sites/default/files/uploads/page/24/attachments/eusalp_2019_joint_declaration_final_191121.pdf

[9] Available at https://www.alpine-region.eu/sites/default/files/uploads/page/24/attachments/report_from_the_commission.pdf

the Blueprint be broadly accepted by Universities, Research Centres, PAs, Innovation Hubs, BS & other R&I actors.

Some limitations have occurred during the implementation of this first part of research: due to the COVID-19 outbreak, it has been impossible to carry out face-to-face interviews. Qualitative data collection from national and regional policymakers and implementing bodies has therefore been carried out through phone calls, online tools, etc. in all of the involved 7 countries and 48 regions of AR. Some of Switzerland cantons did not provide answers to our questionnaire, therefore not all 48 regions are included in presenting the results; at the same time, we were not able to get answers from the Liguria region. Despite that, the results will ease the selection of topics on which stakeholders from AR can test transnational cooperation. Determined topics by business and research sector will be combined with findings in this deliverable to prepare the list of mutually interesting topics among regions and sectors.

2.3   Deliverable Structure

In Chapter 3, we carry out a literature review of previous projects, providing interesting results/ antecedents to A-RING and listing their main contributions. In Chapter 4, a specific brief content analysis of previously conducted AR INTERREG projects will help us in creating the picture of the most recurrent topics and find commonalities of SS3 strategies across countries and regions of the AR. This part will contribute to OT1, which will be designed by capitalising past projects in particular AlpGov and their RIS3 comparative analysis.

The main purpose of this deliverable is to prepare the list of foreseen R&I topics (priorities) that are perceived as the most interesting for national and regional bodies in the AR. Results from interviews conducted through questionnaires are important to find the main topics (priorities) for future transnational cooperation in the AR and among all stakeholders in the region (also in connection with future S3/RIS). The results are presented in Chapter 5.

2.4   Methodology

Since the deliverable consists of different chapters with different goals and conclusions, the methodology used also differs:

-    In Chapter 3, a content analysis of previous research in the Alpine Region was carried out. We add some other projects, financed by the EU, that are interesting for the A-RING project and were already listed in the project proposal. We used project reports and documentation. The words 'triple helix', 'platform' and 'co-creation' were used to identify research that already tried to connect different stakeholders and/or used the platform for communication or exchange of information;

- In Chapter 4, the main purpose is to compare current projects in the AR with RIS3 strategies. The Eye@RIS3 database, constructed within the AlpGov Project, was created by using free text and coded information that was entered by the regions in the S3 platform to summarise their RIS3 priorities. Based on this available Eye@RIS3 dataset, we wanted to find out which strategic areas, i.e. strategic topics, in the Alpine regions are most often highlighted and check whether particular strategic areas/topics are also implemented in practice through individual projects. In other words, we analysed data from 128 strategic areas/topics from Alpine regions and compared them with the implementation of 63 R&I development programs in Alpine regions. Strategic areas/topics and implemented projects were analysed through data on Economic domains, Scientific domains and Policy objectives;

- In Chapter 5, we used a questionnaire to address national and regional policymakers in defining the future R&I topics relevant for Alpine regions. The questionnaire consists of 43 questions/fields. Not all of the questions were planned to be answered, since some of them have a causal relationship. The first group of questions covered the basic information of the stakeholder that provides answers (like the country, region); the next group of questions focused on evaluation of using the platform that provides information about S3/RIS strategies, how such platforms should work, what should be their main purpose and for which stakeholders. The third group of questions focused on topics in current strategies and future topics that they are interested in. For each general topic chosen, the interviewees were able to provide more in depth explanations of the topic, so that we were able to determine the 'content' of the foreseen topics. The next group of questions provided the possibility to determine at which level the public administration would like to cooperate at the transnational, regional and national level as well with whom. At the end, there was the possibility to add a general or specific comment on the issue. We contacted representatives in all 7 countries and 48 regions and received answers from 7 countries and 39 regions.

3   The identification of current policies, topics, projects, initiatives and platforms

The A-RING project analysed, by means of content analysis (Marvasti, 2019; Fteimi et al., 2019), the previous research results and practices in R&I within the Alpine Region as well as cooperation and co-creation practices in a triple-helix context (Academia-Business-PA collaboration) [10]. In this chapter, we introduce and discuss selected practices and projects

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[10] Descriptions of previous research provided by research reports and descriptions of past or ongoing field practice available online have been analysed.

aimed to improve such cooperation, highlighting the main added value of each project for A-RING objectives[11]. Results from this literature review on cooperation practices functioned as antecedents for the creation of the stakeholders' questionnaire presented in Chapter 5.

3.1   EU **level**

At the EU level:

- EU Science hub with the Joint Research Centre (EC-JCR) represents the basic support available to policymakers. As the main support for EU policies, their primary aim is to create, manage and develop innovative tools necessary for policymakers. As one of the rare groups in the field, they anticipate emerging issues that need to be addressed on the EU level and understand policy environments. The group goal is to connect different organisations from all over the world (not only EU member states) in different scientific areas in order to impact the lives of citizens through research results and their implementation on the environment, energy supply and health and safety by continually building joint expertise in knowledge production and knowledge management. In addition, the EU Science hub with the Joint Research Centre joins together laboratories and unique research facilities. Therefore, they represent a good practise approach on how to join knowledge of researchers/academia, stipulate innovation and at the same time make the research and innovation results directly applicable to policymaking, where public administration has an important role.

At the moment, the Joint Research Centre and partner European Commission services manage and operate six knowledge centres: (1) Knowledge Centre for Food Fraud and Quality, (2) Knowledge Centre for Territorial Policies, (3) Knowledge Centre on Migration and Demography, (4) Knowledge Centre for Disaster Risk Management, (5) Knowledge Centre for Bioeconomy and (6) Knowledge Centre for Global Food Security. These knowledge centres are good examples of how to bring together expertise and knowledge from different sources in order to help policymakers understand the latest scientific evidence in a transparent, tailored and concise way. In addition, they support ten scientific areas in different fields: Agriculture and food security, Economic and Monetary Union, Energy and transport, Environment and climate change, Health and consumer protection, Information Society, Innovation and growth, Nuclear safety and security, Safety and Security and Standards. Research topics are presented through these ten areas. For better enhancement of the group Centre for Advanced Studies was established, which also fund the possible research

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[11] Added value and focal points will be highlighted via *italic writing*.

projects to further explore societal need of EU and consequently policy and strategic development in the field.

Thus, EC-JRC is one of good examples in supporting research and innovation at one place in connection with policymakers. Their research can help to increase the knowledge that improves our understanding of societal challenges faced by the EU, through to major breakthroughs that bring about fundamental and long-term changes, also from the business sector. At the same time, particularly with impact assessments, they can contribute to policy development. Nevertheless, we cannot conclude that services are three dimensional (business/academia/PA) (McKelvey, 2006), since there is no explicit support to cooperation between businesses and research centres. This can be a field of improvement, since businesses can contribute in several ways.

- At the EU level, we can also mention the European Research Area (**ERA**), which enables support mostly to research but at the same time is *a point of knowledge circulation and provides open access to different research results*. In addition, the ERA Commission undertakes a detailed analysis of each country's plans for budget, macroeconomic and structural reforms, with research and innovation country-specific recommendations for 22 EU countries. In their 2020 Country Specific Recommendations Research and Innovation analysis,[12] they recommend green and digital transition for Austria, France, Germany, Italy and Slovenia, in particular related to sustainable transport, clean and efficient production and use of energy, energy and digital infrastructures as well as research and innovation. But there is a lack of other stakeholders involved in research and innovation, as determined by our project. The same was also observed in a report by the ERA[13] itself, and further measures for better implementation of the ERA were determined in 2015, which through indicators, determination of priorities at the national level, etc. also increased its support to policymakers.

3.2 Other cases of networking

In the Alpine region:

- the **ISCAR**[14] (International Scientific Committee on Research in the Alps) promotes international cooperation in Alpine research and provides research and scientific expertise from which research needs are determined for the Alps region. As such, they transfer scientific knowledge to policymakers and the general public and disseminate innovative results to different stakeholders and arrange annual meetings for sharing ideas and knowledge. The main obstacle of the ISCAR is that it

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[12] Available at:
https://ec.europa.eu/info/sites/info/files/research_and_innovation/strategy_on_research_and_innovation/documents/2020_compendium_country_specific_recommendations_communication.pdf
[13] ERA progress report 2018, available at https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-/publication/5641328c-33f8-11e9-8d04-01aa75ed71a1.
[14] They are observers of A-RING project.

focuses only on research connected to the Alps (mostly mountain research programs and other issues connected to climate change, water supply, etc.). *Narrowing the research area could be beneficial, since it is focused and therefore attract researchers from the field and other stakeholders interested in the topic.*

- EUROMONTANA[15] ([European association of mountain areas](#)) is the European multisector association for cooperation and development of mountain territories. The goal of this association is to embrace regional and national mountain organisations throughout greater Europe, including regional development agencies, local authorities, agriculture organisations, environmental agencies, forestry organisations and research institutes. In order to achieve this, EUROMONTANA facilitates the exchange of information and experience among these areas by organising seminars and major conferences, by conducting and collaborating in studies, by developing, managing and participating in European projects and by working with the European institutions on mountain issues. In order to facilitate the sustainable development of mountain areas, their main aim is to deal with economic development, human capital, natural and heritage resources, services and networks and policies and governance in mountain areas. The main obstacle of EUROMONTANA is that it is too broad in its focus on the overall European mountain area and *does not address the region specific characteristic, strategies and needs.*

- [MRI](#)[16] (Mountain Research Initiative) is an international network that researches to understand global change challenges and opportunities in mountains across borders and disciplines, with and for society, in order to generate knowledge that enables decisions, actions and transformations towards sustainable development. MRI operates as a central and enabling hub that enables flagship activities, synthesis workshops, working groups, events and online platforms that bring researchers and stakeholders from diverse disciplines and backgrounds together. They work with the mountain research community and society more broadly to *identify research priorities and possibilities for common action, and they support this common action by providing targeted funding, coordination and administrative assistance*. MRI strives *to keep the research community informed and work with research organisations and funding agencies to ensure that mountain global change topics are recognised and addressed*. Like EUROMONTANA, MRI is focused on the overall mountain area and does not address the region specific characteristic, strategies and needs.

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[15] They are observers of A-RING project.
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- NEMOR (Network for European Mountain Research) is a network of public and private-institutions that undertake research in mountain areas, promote research or are involved in the sustainable development of these areas. The main aim is to enhance collaboration between researchers across different disciplines and European countries, particularly through initiatives led by the Mountain Research Initiative (MRI) and especially in the framework of the former Swiss-Austrian Alliance for Mountain Research (CH-AT). The main goals of the NEMOR network are to (1) advocate for European mountain research, (2) enable discussion of research particularly in relation to the vision of EUROMONTANA, (3) foster and connect mountain networks and inter/trans-boundary partnerships, (4) initiate, coordinate and enhance activities with reference to the priority topics of the "Mountains for Europe's Future" with a view toward the European Commission's new research programme (FP9), (5) recognise the functions of mountains for Europe as a whole and enable connections to relevant organisations and institutions and (6) serve as the interlinkage from European to global mountain topics in support of MRI's vision. The main obstacle of the NEMOR is that it focused only on research connected to the Alps as such.

- the **Platform of Knowledge**[17] as a technological public platform that is mainly dedicated to supporting AGs leaders, members, the EUSALP board, the EU team and related people, to connect them and facilitate knowledge and dialogue, while making different targets (policymakers, stakeholders, researchers, citizens) aware about EUSALP as well as its projects, results and impact. It is a kind of report board about all projects in the Alpine Region, where we can find all documents, results and recommendations generated from various financed projects. As previously stated, the platform provides access to different datasets connected to different research, offers survey tools and offers strategic tools. *The important strength of the Platform of knowledge is that some information can be filtered according to different stakeholders (business, public administration, researchers) and information is then tailored for the selected groups*. The additional strength is that EUSALP groups can also "join their 'private' tools, such as the meeting room, the file sharing area, the contact book, etc." *Therefore, the additional dataset from the Interreg Alpine Space A-RING project can contribute to the portal to be improved as well with results connected to research and innovation cooperation.*

- Metrex[18] connects urban regions, while the background for establishing the group was the fact that the majority of people live and work in cities and urban regions; they are centres of economic and social life as well of most governmental

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[17] Available at https://www.alpine-region.eu/p/dashboard.
[18] They are observers of the A-RING project.

institutions. Since urban regions have specific problems and challenges, the network provides the "platform for the exchange of knowledge, expertise and experience on metropolitan affairs and joint action on issues of common interest". *Despite their orientation to urban regions, at the same time the network connects other stakeholders: research community, governmental organisations and other groups interested in programs and projects connected to challenges of urban regions.* They regularly organise different events and activities to provide opportunities for meeting with one another and thus don't only operate through the web platform.

3.3   Past and current projects in the Alpine region

In this section, we choose other projects in the Alpine region that are connected to A-RING's aim and goals and could be beneficial for the project as a whole.

Businesses were the main streamline of the Interreg Alpine space project **SCALE(up)ALPS**. The aim of the project was to foster the scaling up of Alpine Space (AS) start-ups and to brand the AS as a cooperative area for innovative businesses and job creation. During the project, the open portal for connecting the start-ups in the region was developed as an innovative hub. During the project, the main focus was on improving funding opportunities, finding the talent and a skilled workforce, developing leadership and facilitating access to markets. During the project, policy briefs were developed for better environment to scaling up small enterprises, as innovative beginners[19]. *The project can be used in the case of the A-RING project, particularly in the field of potential policymaking or how to improve the impact of businesses in better R&I environment building.*

The next project that focused mainly on smart specialisation (S3) was S3-4ALpClusters. The aim of the **S3-4AlpClusters** was to initiate interregional cooperation by facilitating innovation through clusters. The results of the project were: developed model to process and explore capacities of transformative activities that enhance need-based cooperation and model for joint funding scheme. Since the model was also tested by 30 pilot clusters, it can be of great importance for further development of the proposed seed lab. *As noted in the proposal of the A-RING project, there is a place for further capitalisation of the S3-4AlpClusters, since smart specialisation is part of the content for the R&I platform.*

The next important project as a background for our work is **BIFOCAlps**, which tackled the challenge that due to globalisation many enterprises in the manufacturing sector are not "as competitive as wished in global markets, resulting in increased levels of unemployment, abandoned facilities and remaining plants that need new products and new processes." As

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[19] Available at https://www.alpine-space.eu/projects/scale-up-alps/project_results_def/outputs/ot33-full-fledged-scaleup-business-support-schemes.pdf

pointed out in that project, the Alpine space has a strong R&D sector and specialisation in Industry 4.0 and therefore a boost for collaboration and finding synergies among different stakeholders. The project was oriented toward the manufacturing industry and their collaboration with policymaking and researchers. *Therefore, the project follows the same goal as the A-RING project in a special field of businesses as well as in different ways and is therefore of great importance to the deliverables of our project. In particular, BIFOCAlps is focused on transversal competences, which are necessary to acknowledge in our project.* The other important input that can be used from the project is the *methodology to stimulate innovation processes and at the same time through Key Performance Indicators validate the impact of the innovation process*.

C-TEMAlp is *valuable for the A-RING project with its Cooperation Manual[20], which can be support for development of our triple cooperation in the field of boosting R&I in the region in a developed seed lab*. Their developed platform[21] can be a starting point in building our seed lab as well as their experience in engaging policymakers to include topics from the C-TEMAlp on decision-makers' agendas.

In its content and expected goals, the **RE-SEARCH ALPS** project *provides a basis of knowledge for the whole A-RING partnership in order to directly engage with R&I facilities in their regions/territories*. The Re-Search Alps' platform, as "a tool to support the systemic goal to enhance innovation ecosystems and to know and map Laboratories and Research Centres in the Alpine Macro-region", is of great importance for A-RING for this reason. Collection of data on available infrastructure is valuable to develop tools for all users addressed by our project (enterprises, public administrations, universities), since there is no systematic information/platform that would gather innovation results in the EUSALP countries. While the RE-SEARCH ALPS project aims to collect information on institutions and their field of work connected to innovation, research and development and integrate them into one place, our aim is a step forward: to establish a place where exchanges of ideas, project results, applicability, etc. will be possible.

An important background for our project can also be found at **Alpine Space (AS) Knowledge Atlas[22]** (as a result of CARE4TECH project), which gathers knowledge in the field of Smart Living technologies, which are part of R&I developments. *Acknowledgment of tech leaders, solutions and innovation in an accessible and digital database could be one of the stakeholder groups included in our project* in developing an appropriate platform for interchange of knowledge, innovation and research among policymakers, researchers and businesses.

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[20] Available at https://www.alpine-space.eu/projects/c-temalp/deliverables/d.t2.2.1-cooperation-manual.pdf.
[21] Available at https://www.business-transfer.eu/.
[22] Available at https://www.alpine-space.eu/projects/care4tech/results/outputs/o.t1.1_ouput_description_final.pdf.

The project more concentrated on innovation in governance and building the right strategy approach in fulfilment of EUSALP; our project will consider the project results of the **AlpGov** project. *This is necessary input to find the public administration role in R&I cooperation at the policymakers level*. The **INTESI** project is similar, but with a different focus, since the result of the project is an alpine-wide database of government strategies for delivery of services of general interest.

S3, networking and platform are also included in some current projects. In accordance with Smart Specialisation Strategies (S3) that strengthen innovation and competitiveness capacities, the aim of **ARDIA-Net** is to find opportunities for innovation and cross-regional and cross-sectoral cooperation between SME, businesses support organisations (e.g. research hub) and academia. The project empowers governance for fostering S3 cooperation (e.g. synergies within S3: digitisation, health, materials, etc.). The ARDIA-Net project is developing an Alpine RDI Area (ARDIA) for tailor-made S3 cooperation across regions by developing a funding framework and projects for addressing CBH megatrends across the AS. It draws on a partnership involved in policy deployment. ARDIA introduces an effective framework for future cross-regional and interdisciplinary RDI projects enhancing VC inter-connection, investments and commercialisation, realising of ESIF-H2020 synergies and ultimately upscaling of AS efforts. ARDIA-Net focuses on investment in *institutional capacity and in the efficiency of public administrations and public services at the national, regional and local levels with a view to reforms, better regulation and good governance*. Therefore, we can find some similarity and complementary ideas to our project[23].

Several similarities to A-RING can be found in **ASIS**. The aim of the ASIS project is to initiate, develop and promote a new vision of innovation in the Alpine space area, namely: social innovation (SI), in order to increase the innovation capacity of Alpine space regions. The ASIS consortium is developing a new approach to innovation that really answers the economic and societal challenges faced by each Alpine region. Some preliminary results of still ongoing projects show that the Alpine space is a dynamic territory in term of research and innovative projects, and SI initiatives show limited inter-Alpine cooperation and significant regional and social disparities. Social innovation, combined with technological innovation, is found to be a crucial soft location factor for generations and economic development. Suggested further actions of the ASIS project are: SI creates the human potential and capacity for technological and service innovation and is a driver for wellbeing. For that, it has become necessary to carry out the following actions: to develop public policies and an adequate ecosystem capable of providing effective support for SI (GECES report, European Commission, 10/2016) and to promote a shift from a project-based approach to long-term strategies. *Similarly to the A-RING project, they stressed*

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[23] They are observers of A-RING and members of AG1.

*improved cooperation between ASP innovation key players, creation of new knowledge &
skills of public authorities, proposition of new tools and methodologies, an innovative
platform, new strategic policies and recommendations to public actors through a White
book. ASIS is basically focused on boosting research and innovation activities in public
research centres and centres of competence, including networking capacity building, and
can be of great importance for the A-RING project.*

The next ongoing project in the Alpine region with similarities is **AlpBioEco**. AlpBioEco
focus on valorisation of innovative bio-economic potentials related to bio-based food and
botanical extract value chains in the Alpine Space. AlpBioEco's focus is on fostering the
sustainability of the local economy in the Alpine Space through the valorisation of
innovative bioeconomic potentials related to bio-based food and botanical extract value
chains (VCs). AlpBioEco increases capacities of SMEs to jointly develop bio-based products.
Through concepts of `Open Innovation´ (methodology of Quadruple Helix Model below), it
intensifies transnational cooperation for eco-innovations in the bio-based economy. Like
the A-RING project, it also includes another stakeholder, the public sector. In terms of
objectives, it has a similar goal to A-RING: support for the public sector to innovate in
service delivery and enhance cooperation between SMEs, knowledge institutions, public
administration and end-users. The difference is that it focus mainly on eco-innovations.
The already mentioned quadruple helix model basically incorporates public authorities
(government and regional development agencies and policymakers), industry (private
health care providers and business clusters), academia (universities, research or
development organisations) and citizens. *Therefore, the developed Quadruple Helix
Methodology could be used for A-RING purposes.*

The focus on networking can also be found in the **AlpES** project. It focuses on protection
and enhancement of biodiversity, nature protection and green infrastructure. The project
involves public authorities, policymakers, NGOs, researchers and economic actors (target
groups). *The project includes all A-RING relevant policy players*. Networking, mostly with
businesses, is also emphasised in another ongoing Alpine project, **BE-READI ALPS**. It
focuses on the unexploited scenario of designing and piloting a living lab where mature
SMEs might have a "second life", extending their value chain at the AR level by establishing
partnerships with innovation, digital and financial providers. Despite the focus on other
objectives, the **AlpSib** project is of interest for the A-RING project*, since one of deliverables
will be a developed platform as a "matching area that provides possibilities to connect
stakeholders with ideas and capacities" and can be of use for our platform*.

The Design Thinking (DT) (Rauth & Nabergoj, 2016)[24] process, as a new wave of business
innovation through collaboration, new decision making processes and more sustainable

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[24] Rauth, I., & Nabergoj, A. S. (2016). Design thinking workshops: a way to facilitate sensemaking and idea
development across organisational levels. In *Capitalizing on Creativity at Work*. Edward Elgar Publishing.

added value creation without neglecting the strong link to the territory, is an issue analysed in the **DesAlps** project. SMEs, intermediaries, stakeholders and policymakers can benefit from the shared methodologies and empower the impact of this innovation process thanks also to the connection with S3. It addressed additional important issues related to the fact that multiple forces – social, technological, competitive – combined with the Alps specificities, make today's challenge for small businesses to adapt and grow even more complex for AR SMEs, already weakened by the physical and cognitive distance from innovation centres.

We can find several other projects in the Alpine region that include similar or the same stakeholders as the A-RING project, but they focus on other issues and objectives (i.e. AlpInnoCT, CESBA Alps, CARE4TECH*).*

3.4 Other regions

Beyond the focus on the EU level and Alpine region, there are also other networks and projects that are interesting for the deliverables of our project. Research initiative **STRIVE.io** (Strategic Innovation Venturing Portfolio), which is a project conducted by the IST Institute in Konstanz, is aiming to evaluate experiences in different forms of corporate venturing to recognise the best practices for better transformative innovation initiatives. The result of the project will be a developed process model and tools for decision support and innovation strategy, particularly for medium-sized companies. A networking and capacity building approach can also be found in the **DANTE4PA** project in the Danube region. The DANTE4PA project tried to install a three level transnational network between Vocational Education & Training Systems, Civil Services and Governments that could be used in a similar way for networking our stakeholders. Similar to that, the **Next4PA** project aims to build a creative culture and promote an innovative approach at local public administrations. Part of the project included networking with the private sector in boosting innovative approach and solutions in delivering public services.

3.5 Conclusion

After the overview of different projects and networks in the EU and especially the AR, we provided a detailed analysis of the aim of network organisations (e.g., different topics, positive and negative sides) and the developed methodologies in the projects that can stimulate and validate innovation processes or stimulate cooperation among different groups for further capitalisation of the S3/RIS.
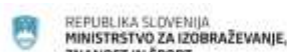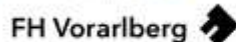
Table 1: Network organisations on transnational activities within each regional S3/RIS strategy and on transnational R&I topics

Level of organisation	Name of organisation	Interested in topics	Positive side	Negative side
EU	EU Science hub with the Joint Research Centre (EC-JCR	Agriculture and food security, Economic and Monetary Union, Energy and transport, Environment and climate change, Health and consumer protection, Information Society, Innovation and growth, Nuclear safety and security, Safety and Security and Standards	join knowledge of researcher/academia and makes the research and innovation directly applicable in policymaking	no explicit support to cooperation between businesses and research centres.
	European Research Area (ERA)	Currently on green and digital transition in countries that are involved in the A-Ring project.	provides dialogue between the Commission and EU countries for research and innovation	a lack of other stakeholders involved in research and innovation
Alpine region networks	the ISCAR	The topics are related to mountain research programs and other issues connected to climate change, water supply, etc.	transfer scientific knowledge to policymakers and the general public	focuses only on research connected to the Alps
	EUROMONTANA	The topics are related to mountain research programs and other issues connected to climate change, water supply etc.	exchange information with regional development agencies, local authorities, agriculture organisations, environmental agencies, forestry organisations and research institutes	does not address the regional specific characteristic, strategies and needs.
	MRI	The topics are related to mountain research programs and other issues connected to climate change, water supply, etc.	connect mountain research community and society to identify research priorities by providing targeted funding, coordination and administrative assistance.	does not address the regional specific characteristic, strategies and needs.
	NEMOR	The topics are related to mountain research programs	enhance collaboration between	focused only on research

		and other issues connected to climate change, water supply, etc.	researchers across different disciplines and European countries,	connected to Alps
	the Platform of Knowledge	supports AGs leaders, members, EUSALP board, EU team and related people (policymakers, stakeholders, researchers, citizens)	provides report board about all projects in Alpine Region, where we can find all documents, results and recommendations generated from various financed projects	focused only on research connected to Alps
	Metrex	Topic related to urban regions	connects to other stakeholders: research community, governmental organisations and other groups interested in programs and projects connected to challenges of urban regions	focused only on urban regions

Table 2: Past projects in Alpine region on transnational activities within each regional S3/RIS strategy and on transnational R&I topics

Name of Alpine region project	Developed methodologies	Important for the A-ring
SCALE(up)ALPS	innovative hub was developed	Learn how to be better in policymaking or how to improve impact of businesses in better R&I environment building
S3-4ALpClusters	developed model to process and explore capacities of transformative activities that enhance need-based cooperation and model for joint funding scheme.	Is a place for further capitalisation of the S3-4AlpClusters, since smart specialisation is part of the content for R&I platform
BIFOCAlps	Created their own methodology manufacturing industry and their collaboration with policymaking and researchers.	Methodology on how to stimulate innovation processes and at the same time through Key Performance Indicators validate the impact of the innovation process.
C-TEMAlp	*Cooperation Manual and platform*	We can used the project results as a starting point in building *triple cooperation in the field of boosting R&I in the region*
RE-SEARCH ALPS	Infrastructure in order to develop tools for all users addressed also by our project (enterprises, public administrations, universities),	It could provide a basis of knowledge for the whole A-RING partnership in order to directly engage with R&I facilities in their regions/territories.

Table 3: Current projects in Alpine region on transnational activities within each regional S3/RIS strategy and on transnational R&I topics

Name of Alpine region project	Developed methodologies	Imprtant for the A-ring
ARDIA-Net	research hub	It draws on a partnership involved in policy deployment
ASIS	developing a new approach of innovation for social innovation, combined with technological innovation	Stimulate research and innovation activities in public research centres and centres of competence, including networking capacity building
AlpBioEco	Open Innovation - methodology of Quadruple Helix Model	Developed Quadruple Helix Methodology could be used for A-RING purposes

4 RIS3 strategies and projects, comparative analysis in the AR area

EU Joint Research Centre (JRC) is the EU Science Hub that brings together scientific knowledge for Europe (JCR, 2020). In 2019, the JRC developed the JRC platform for mapping governance in the research and innovation field and through the AlpGov project (Alpgov 1, 2020). AlpGov project results are published in several publications (e.g., Pagliacci et al., 2019; Pavone et al., 2020; Pavone et al., 2019; Scagliarini, 2018,). Researchers (Pagliacci et al., 2019) performed the socioeconomic comparative analysis of EU regions and established a comparative framework of demographic and socioeconomic features for regions. Using principal component analysis and cluster analysis, Pagliacci et al. (2019) identified 19 different types of EU regions. They provided insights to consider heterogeneity among EU regions and to support more effective learning from the other regions' RIS3s by contextualising their priorities in their socioeconomic settings. Further, Pavone et al. (2020) interpreted the overall framework of interconnected structural socioeconomic and demographic features and policy programmes on smart specialisation strategy in the EU. Their main results were the identification of 9 groups (clusters) of EU regions and giving public policy recommendations in order to reduce regional disparities and to enhance complementarities and synergies within macro-regions. So far, no research has shown whether strategic innovation and research topics, arising from development strategies from the Alpine regions, are also reflected in implementation through projects within the Alpine regions. In order to find innovation and research topics that are most often shared among Alpine Region members, we ran a comparative analysis using the S3 platform (Dorato, 2020),[25] where regions from five Alpine countries, namely: Italy, Austria, Germany, France and Slovenia, were included in the analysis. Switzerland and Liechtenstein are excluded, since these two countries are not preparing RIS3 strategies. Swiss cantons prepare their own innovation strategies that are not part of RIS3. Empirical results can contribute to steering public policy and help to guide them torwards synergies, reduction of regional disparities and increasing complementariness on the level of macro-regions.

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[25] Our unique database derives from the JRC platform that is available online at Eye@RIS3. The Eye@RIS3 database, constructed within the AlpGov Project, was created by using free text and coded information that was entered by the regions in the S3 platform to summarise their RIS3 priorities. Based on this available Eye@RIS3 dataset, we wanted to find out which strategic areas, i.e. strategic topics, in the Alpine regions are most often highlighted and check whether particular strategic areas/topics are also implemented in practice through individual projects. In other words, we analysed data from 128 strategic areas/topics from Alpine regions and compared them with the implementation of 63 R&I development programs in Alpine regions. Strategic areas/topics and implemented projects were analysed through data on Economic domains, Scientific domains and Policy objectives.

4.1 Analysis of Alpine regions, states and countries covering economic domains

Based on Statistical Classification of Economic Activities in the European Community (NACE rev. 2)[26] and the tool Eye@RIS3[27] that demonstrates public investment priorities of regions, states or countries in terms of S3 strategies, for innovation across Europe, we analysed the incidence of regional, state and national RIS3 policies covering **economic domains** in five countries, namely: Austria, France, Germany, Italy and Slovenia (the results are presented in Figure 1). From Figure 1, we can see that there are three main economic domains in RIS3 policies: Professional, scientific and technical activities, Information and communication, and Manufacturing. Italy has the highest number in each of these three main economic domains, followed by Austria, France, Germany and Slovenia. Furthermore, the analysis shows Alpine regions did not explore the following economic domains in national RIS3 policies: Activities of extraterritorial organisations and bodies, Activities of households as employers, undifferentiated goods- and services-producing activities of households for own use, Other service activities, Mining and quarrying, Wholesale and Retail Trade, Repair of Motor Vehicles and Motorcycles. We then analyse the Alpine Region's strategies for each region or state in each of the countries separately based on the total number of regional RIS3 policies covering economic domains. Table 4 provides a summary of the top economic domains determined in strategies by region. If two or more economic domains appear in strategies then the region is mentioned in different top economic domains.

Table 4: The top economic domain in analysed strategies by region and country

| The top economic domains	Regions	Country
Professional, scientific and technical activities	Lower Austria, Salzburg, Vorarlberg, Vienna, Tyrol	Austria
	Slovenia	Slovenia
	Baden-Württemberg	Germany
	Piedmont, Valle d'Aosta, Liguria, Lombardy, Bolzano, Trento, Friuli-Venezia Giulia	Italy
	Franche-Comté, Rhône-Alpes, Provence-Alpes-Côte d'Azur	France
Manufacturing	Burgenland, Upper Austria	

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[26] Available at http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=NACE_REV2.
[27] Available at https://s3platform.jrc.ec.europa.eu/map?p_p_id=captargmap_WAR_CapTargMapportlet&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1.

	Slovenia	Slovenia
	Veneto, Lombardy, Valle d'Acosta, Piedmont	Italy
	Bavaria	Germany
Information and communication	Carinthia, Styria	Austria
	Bavaria, Baden-Württemberg	Germany
	Liguria, Friuli-Venezia Giulia, Veneto	Italy
Electricity, gas, steam and air conditioning supply	Baden-Württemberg	Germany
Transportation and storage	Baden-Württemberg	Germany
Human health and social work activities	Baden-Württemberg	Germany
Arts, entertainment and recreation	Vienna	Austria

Other mentioned economic domains by each country do not differ much, since we can see similar peaks in Figure 1.

Figure 1: Alpine Space strategies in five countries - total number of regional, state and national RIS3 policies covering economic domains
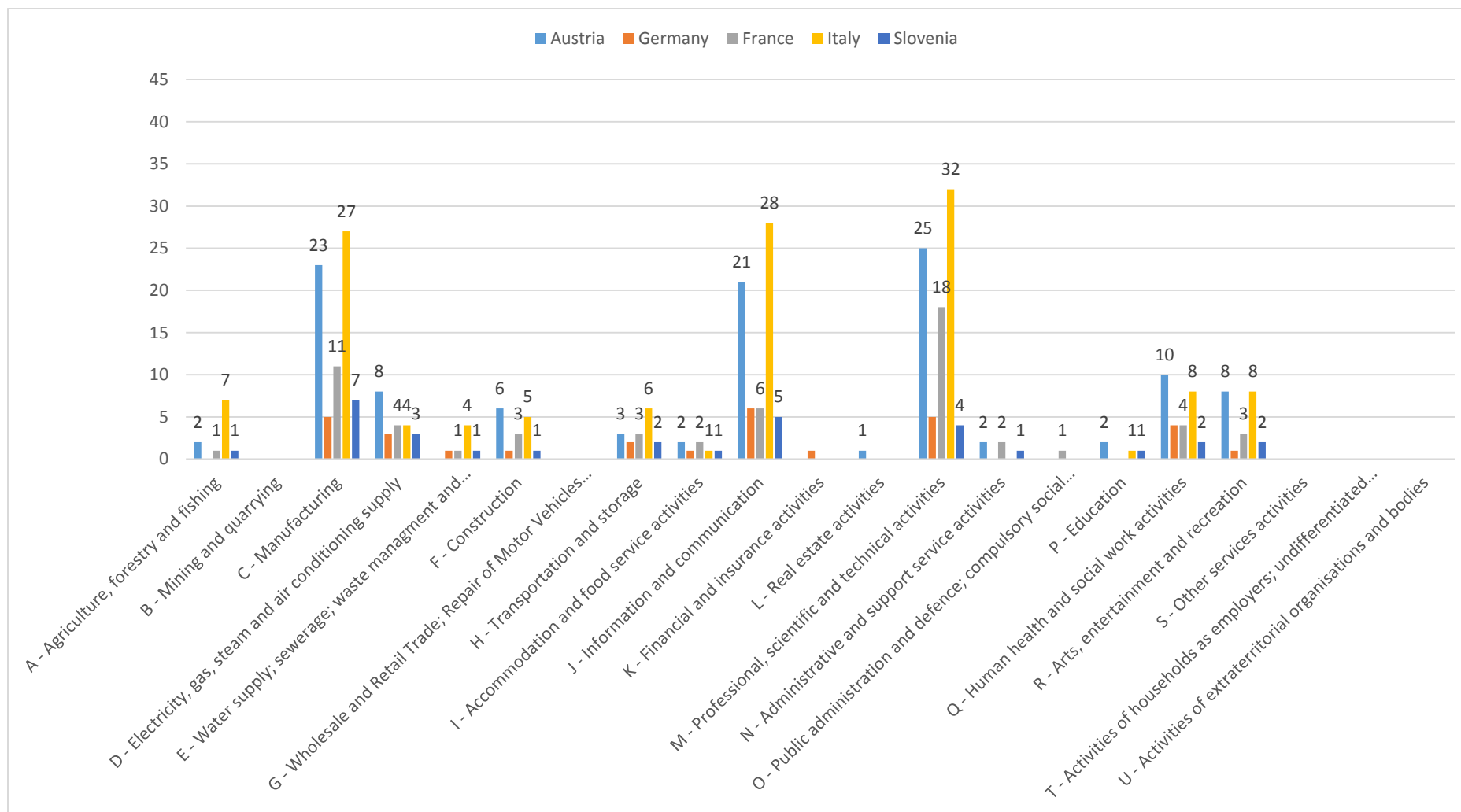
Below, the next subchapter demonstrates the analysis of policy objectives in Alpine Space strategies. We were then interested in the policy objectives that were covered in the AlpGov projects in five countries: Austria, France, Germany, Italy and Slovenia.

## 4.2 Analysis of Alpine regions, states and countries covering policy objectives

Based on the Statistical Classification of Economic Activities in the European Community (NACE rev. 2) and the tool Eye@RIS3, we analysed the incidence of regional, state and national RIS3 policies covering **policy objectives** in five countries: Austria, France, Germany, Italy and Slovenia. The top policy objectives mentioned in strategies are presented in Table 5.

Table 5: The top policy objectives in analysed strategies by region and country

Policy objective	Regions	Country
Sustainable innovation	Burgenland, Styria	Austria
	Baden-Württemberg	Germany
	Liguria, Lombardy, Veneto	Italy
Public health & security	Lower Austria, The Tyrol	Austria
Digital transformation	Upper Austria	Austria
	Rhône-Alpes, Provence-Alpes-Côte d'Azur	France
	Valle d'Aosta, Bolzano, Trento, Veneto, Friuli-Venezia Giulia	Italy
Cultural & creative industries	Vienna	Austria
KETs	Carinthia, Salzburg, The tyrol, Vorarlberg	Austria
	Bavaria	Germany
	Piedmont	Italy
Service innovation	Burgenland	Austria
	Franche-Comté, Rhône-Alpes	France
Social innovation	Vienna	Austria
	Slovenia	Slovenia

From Figure 2, we can see that there are four main policy objectives at the regional, state and national level, namely: Professional, scientific and technical activities, Information and communication and Manufacturing. Italy has the highest number in each of these four main policy objectives, followed by Austria, France, Slovenia and Germany: Digital transformation, Key Enabling Technologies (KETs), Sustainable Innovation and Public health and security.

Figure 2: Alpine Space strategies in five countries – total number of regional, state and national RIS3 policies covering policy objectives
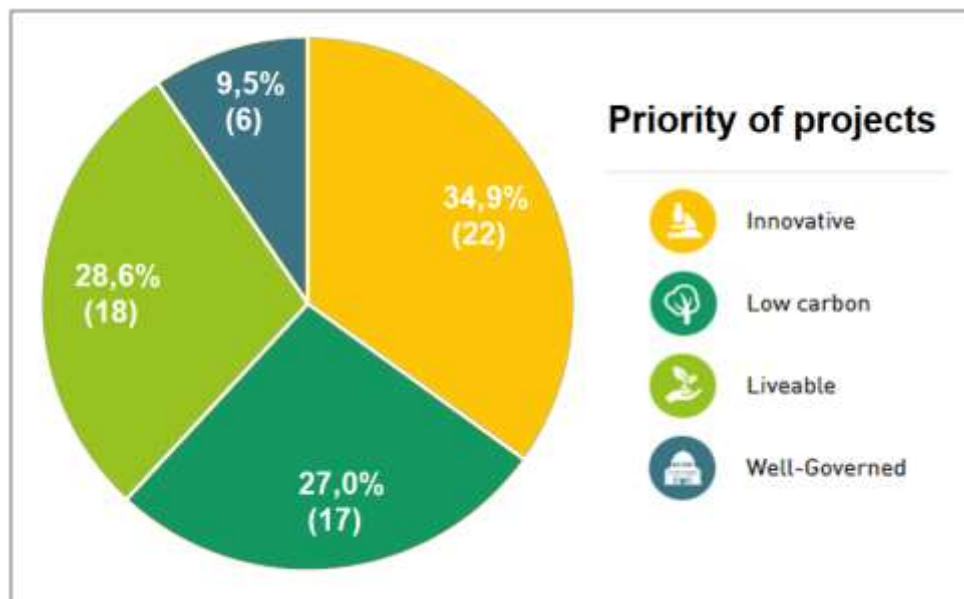
4.3 Analysis of Alpine Space projects by transnational topics in current period
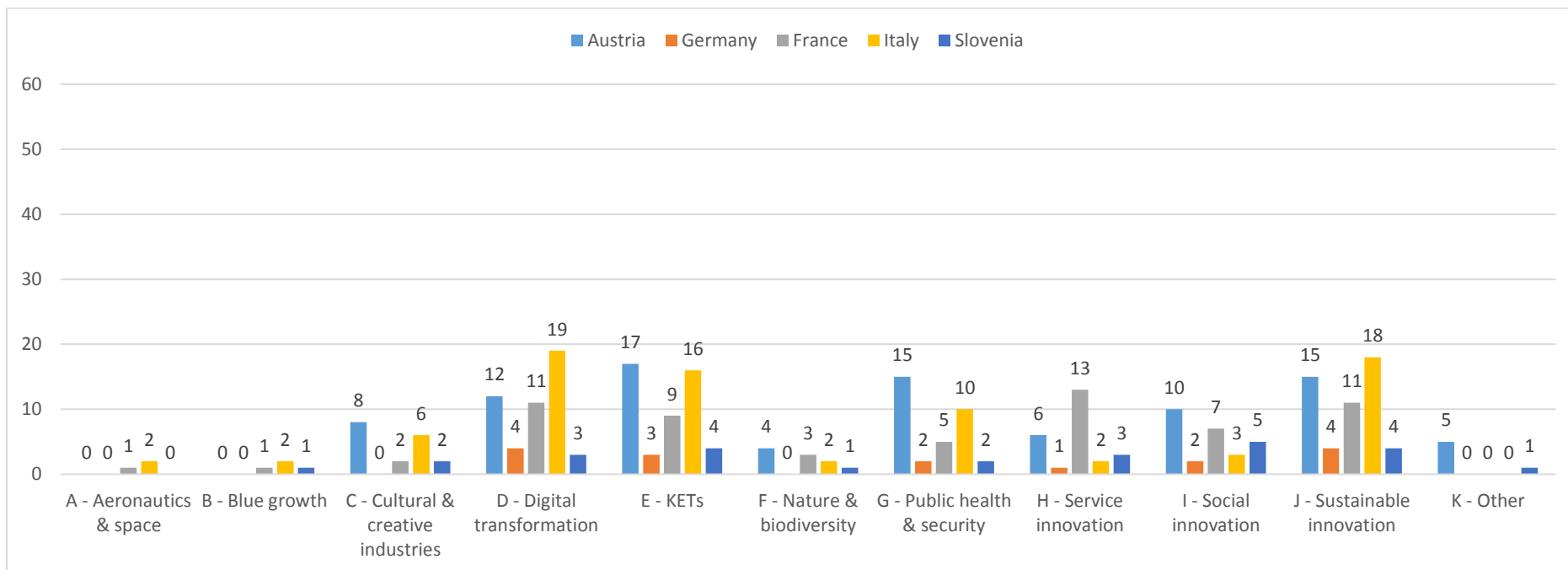
Currently running topics in the AR, financed through the Interreg Alpine space, are divided into different priorities. Figure 3 shows key transnational priorities defined by the European Commission and Alpine Space secretariat. These key transnational priorities represent key program priorities of the analysed 63 projects in the Alpine Space. We can see from Figure 3 that 34.9% of the key transnational topics are related to innovation, followed by liveable with 28.6%, low carbon with 27.0% and well-governed with 9.5%. Each of the priorities are further explained in Interreg Alpine Space Programme Priorities[28].

Figure 3: The identification of key transnational topics

Source: Interreg Alpine Space[28]

4.4 Analysis of Alpine Space projects covering economic domains

Based on the Statistical Classification of Economic Activities in the European Community (NACE rev. 2)[29] and identified Interreg Alpine Space projects,[30] we analysed the incidence of first and second **economic domains** covered in 63 projects in seven countries, namely: Austria, France, Germany, Italy, Slovenia, Switzerland and Liechtenstein (the results are presented in Figure 1). First and second economic domains of the projects were defined by

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[28] Available at https://www.alpine-space.eu/about/the-programme/programme-priorities
[29] Available at
http://ec.europa.eu/eurostat/ramon/nomenclatures/index.cfm?TargetUrl=LST_NOM_DTL&StrNom=NACE_REV_2.
[30] Available at https://www.alpine-space.eu/project-results/project-websites/overview?field-loc-country=&field-loc-region=&field-keywords=&q=.

Slovenian A-RING project partner experts. From the analysis in all seven Alpine countries, we can see that the first economic domains are:

- Agriculture, forestry and fishing,
- Electricity, gas, steam and air conditioning supply,
- Water supply;
- Sewerage;
- Waste management and remediation activities,
- Transportation and storage,
- Education and Human health and
- Social work activities.

The second economics domains are:

- Professional, scientific and technical activities,
- Information and communication,
- Manufacturing,
- Administrative and support service activities and Public administration and defence,
- Compulsory social security.

Italy has the highest number of these primary economic domains, followed by Austria, France, Germany and Slovenia.

Similarly as in Table 4, in Table 6 we provide a summary of the top economic domains that can be defined in projects. If two or more economic domains appear in an equal number of projects, then the region is mentioned in different top economic domains.

Table 6: The top economic domain in analysed projects by region and country

The top economic domains	Regions	Country
Professional, scientific and technical activities	Burgenland, Vienna, Carinthia, Styria, Upper Austria, Tyrol	Austria
	Slovenia	Slovenia
	Baden-Württemberg, Bavaria	Germany
	Piedmont, Valle d'Aosta, Lombardy, Bolzano, Trento, Friuli-Venezia Giulia	Italy
	Rhône-Alpes, Grand Est	France
Public administration and defence; compulsory social security	Burgenland	Austria
Information and communication	Vienna, Lower Austria, Salzburg, Voralberg	Austria

	Baden-Württemberg, Bavaria	Germany
	Veneto	Italy
	Grand Est, Provence-Alpes-Côte d'Azur	France
Electricity, gas, steam and air conditioning supply	Bavaria	Germany
	Styria	Austria
Transportation and storage	Grand Est	France
Education	Burgenland	Austria
Human health and social work activities	Liguria	Italy

A comparison of Figure 1 and Figure 4 shows similar peaks. We can conclude that the seven countries followed strategies when selecting the projects.

For Switzerland and Liechtenstein, the comparison between strategies and projects has not been carried out. Nevertheless, we also presented the topics in projects for these two countries in the Figures.

Figure 4: Alpine Space projects in seven countries - total number of national innovation policies covering economic domains
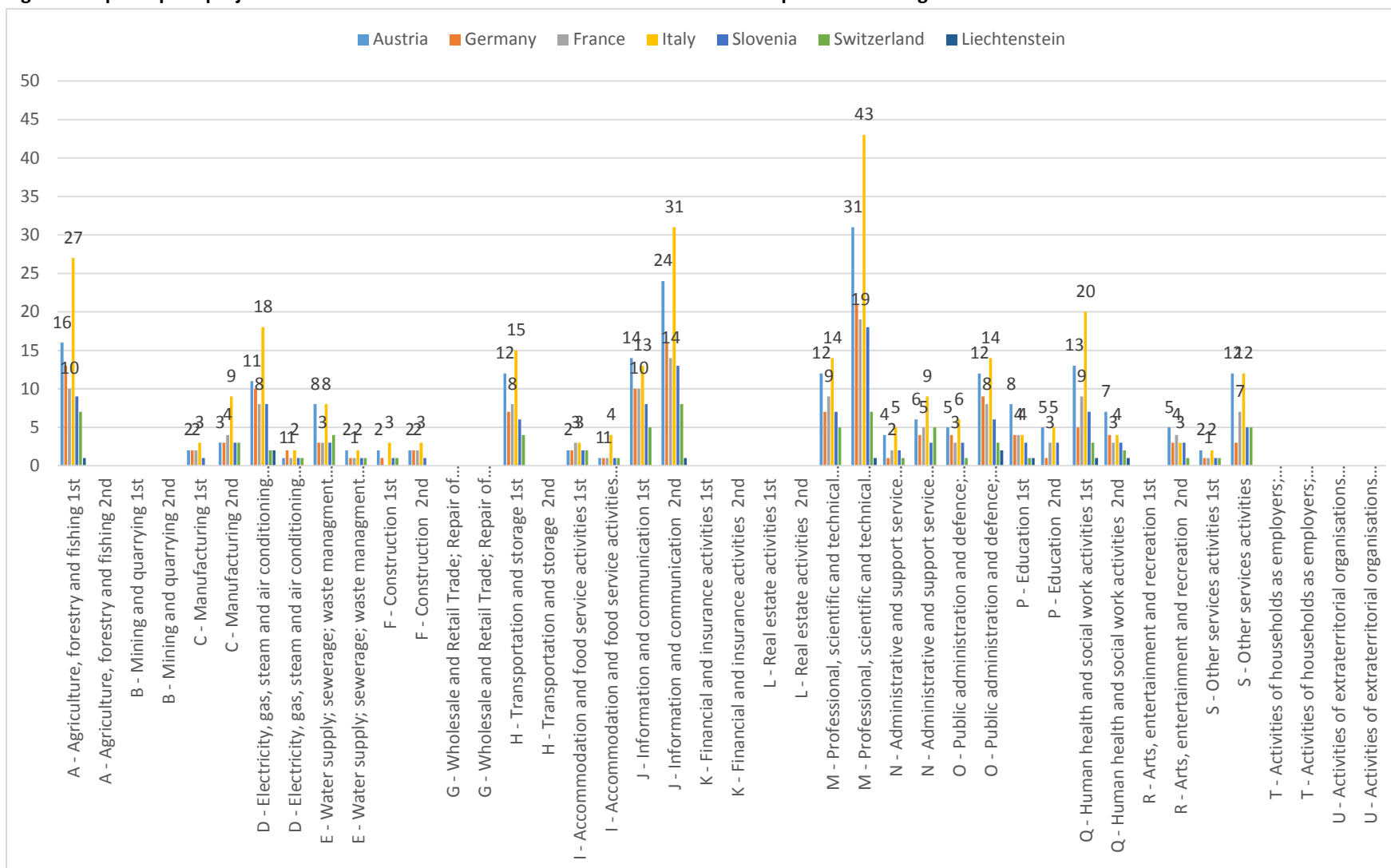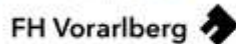
4.5 Analysis of Alpine Space projects covering policy objectives

Based on 63 projects in the Alpine Space, we wanted to explore national RIS3 policies covering policy objectives. More specifically, we wanted to know what is the first chosen policy objective and the policy objective domain in the 63 projects in the Alpine Space. In Figure 5, we present Alpine Space projects in seven countries - total number of national RIS3 policies covering policy objectives. From the analysis, we can see that the first policy objectives: Nature & biodiversity, Service innovation, Sustainable innovation.

Similarly as in Table 5, in Table 7 we present the top policy objectives determined in projects analysed in five countries that prepare RIS3 strategies.

Table 7: The top policy objectives in analysed projects by region and country

Policy objective	Regions	Country
Nature & biodiversity	Burgerland, Vienna, The Tyrol	Austria
	Piedmont, Valle d'Aosta, Trento	Italy
Public health & security	Liguria	Italy
Service innovation	Styria, Carinthia	Austria
	Provence-Alpes-Côte d'Azur, Grand Est	France
	Veneto	Italy
Social innovation	Lower Austria	Austria
Sustainable innovation	Slovenia	Slovenia
	Vorarlberg, Salzburg, Upper Austria	Austria
	Baden-Württemberg, Bavaria	Germany
	Franche-Comté, Rhône-Alpes	France
	Friuli-Venezia Giulia, Bolzano, Lombardy	Italy

According to the previous comparison, the same goes for comparison of policy objectives between strategic documents and projects financed. Regions are trying to follow strategic documents, therefore foreseen topics and transnational comparison of them is crucial for AR cooperation in projects in the future.

Figure 5: Alpine Space projects in seven countries - total number of national innovation policies covering policy objectives
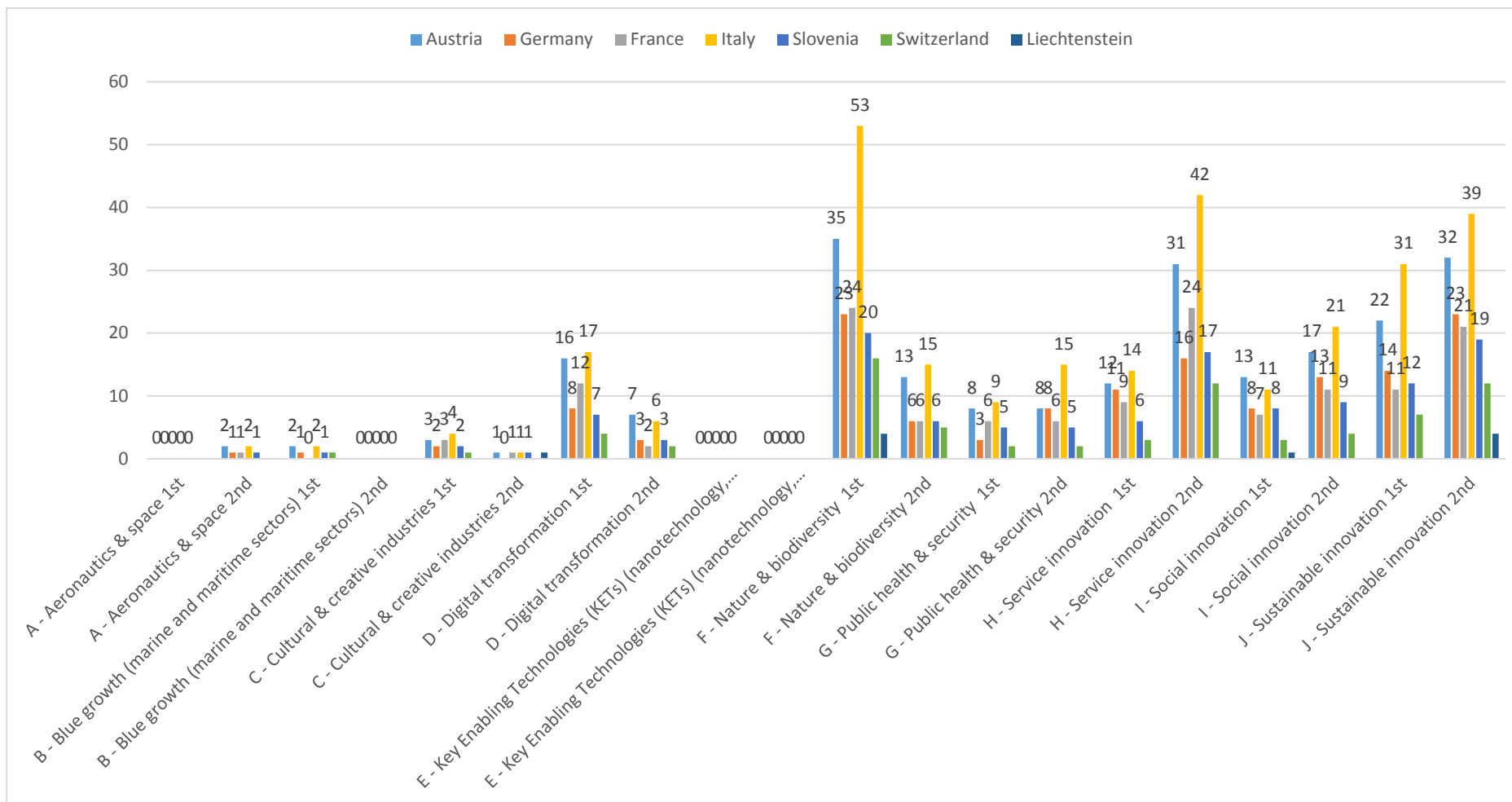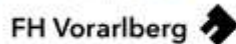
Further, we present the research results of 63 projects in the Alpine Space according to five potential priority sectors, defined by the European Commission, that might offer a strong potential for cooperation at the macro-regional level to approach innovation, support of enterprises and the labour market. The distribution of projects is presented in Chart 1.

Chart 1: Projects according to five potential priority sectors defined by the EC
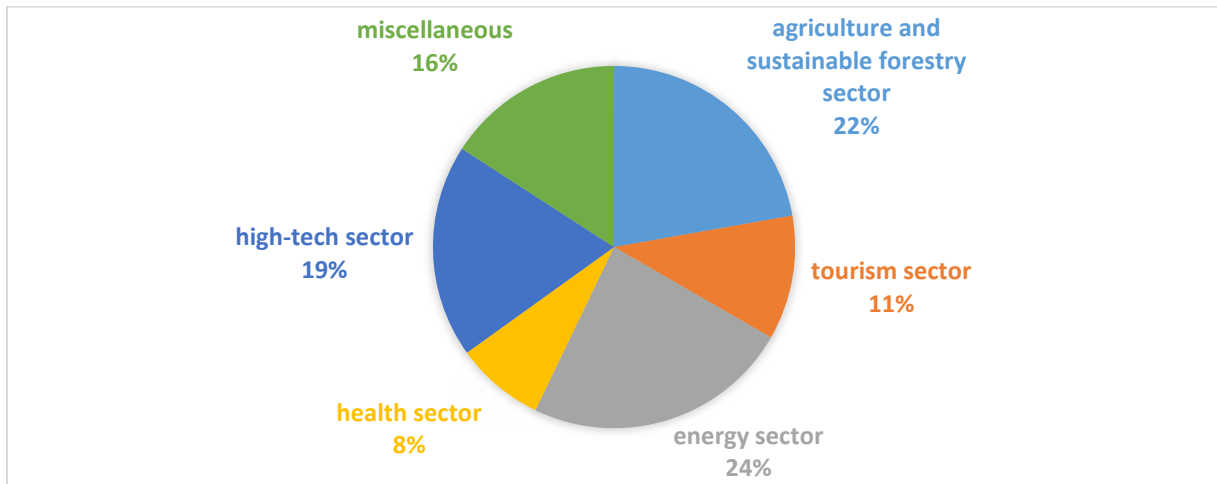
Among potential areas where cooperation at the macro-regional level in the fields of innovation, support of enterprises and the labour market is most pronounced are the energy sector (120 occurrences), agriculture and sustainable forestry sector (112 occurrences) and high-tech sector (104 occurrences). Sectors that are less represented in 63 projects are the tourism sector (52 occurrences) and health sector (42 occurrences). Among projects in the analysed 7 Alpine Space countries, there are 81 such occurrences that could not be classified in any of the five priority sectors of the European Commission.[31]

Table 8: Distribution of sectors per country that might offer a strong potential in the fields of innovation, support of enterprises and the labour market as identified in Alpine Space projects in 7 Alpine Space countries

	Agriculture and sustainable forestry sector	Tourism sector	Energy sector	Health sector	High-tech sector	Miscellaneous
Austria	26	11	26	8	26	20
Germany	17	7	19	4	14	11

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[31] Available at https://ec.europa.eu/regional_policy/sources/cooperate/alpine/eusalp_action_plan.pdf.

France	16	8	14	8	18	10
Italy	33	12	37	14	28	22
Slovenia	12	7	14	6	12	10
Switzerland	6	8	8	2	6	7
Liechtenstein	2	0	2	0	0	1
TOTAL	112	53	120	42	104	81

5 Foreseen transnational activities within each regional S3/RIS strategy and on transnational R&I topics

In order to understand the current situation and future possible topics, a questionnaire for public administration/policymakers was prepared. All A-RING project partners prepared comments to the first draft. After further polishing of the questionnaire, it was tested by two representatives of public administration. They provided further comments for improvement and the final questionnaire was prepared for distribution to relevant stakeholders.

The questionnaire consists of 43 questions/fields. Not all of the questions were planned to be answered, since some of them have a causal relationship. The first group of questions covers the basic information of the stakeholder that provides answers (like the country, region); the next group of questions focused on evaluation of using the platform that provides information about S3/RIS strategies, how such platforms should work, what should be their main purpose and for which stakeholders. The third group of questions focused on topics in current strategies and future topics that they are interested in. For each general topic chosen, the interviewees were able to provide more in depth explanations of the topic, so that we were able to determine the 'content' of the foreseen topics. The next group of questions provided the possibility to determine at which level the public administration would like to cooperate at the transnational, regional and national level as well with whom. At the end, there was the possibility to add a general or specific comment on the issue.

The scope of the survey was to collect the answers from all 7 Alpine countries, of which 5 EU Member States (Austria, France, Germany, Italy and Slovenia) and 2 non-EU countries (Liechtenstein and Switzerland), and 48 Regions. Therefore, we used several channels for survey distribution. Due to the COVID-19 outbreak, face-to-face interviews were not possible and the retrieval of information from decision makers and implementation bodies was therefore carried out through phone calls, online tools, etc. In addition, an online survey (1ka) was sent to all region representatives included in EUSALP and additionally to all other representatives already included in different Interreg Alpine space projects, and selected ministries in different countries. We asked all project partners and observers to distribute the survey to all other relevant addresses. The online survey was active from 27 May 2020.

Up to the end of September, we received answers from 7 countries and 39 regions. It should be stressed that 8 cantons from Switzerland did not provide answers to our questionnaires. It should be taken into account that Swiss cantons do not prepare RIS3 strategies and that they prepare their own strategies, which are usually in line with the national research and innovation strategy. This was probably the reason for the incomplete response rate.

5.1 Survey results and analysis

We received 92 responses from public authorities, of which 21% at the national level, 63% at the regional level and 17% at the local level. In the sample, 24% of responses were from Germany, 23% from Austria, 5% from Slovenia, 36% from Italy, 3% from France, 7% from Switzerland and 2% from Lichtenstein. We collected responses from all Alpine regions in Germany, Slovenia, France, Liechtenstein and Austria. In Italy, only Liguria did not participate and as mentioned 8 cantons in Switzerland did not provide responses.

First, we asked participants about the RIS3- Smart Specialisation Platform. 42% of the participants know and actively use the RIS3- Smart Specialisation Platform. The participants in the data collection said that they used the RIS3- Smart Specialisation Platform mostly to search other RIS3 strategies for benchmarking, to search statistical data, to see which at regions are part of it, to get specific topic-related information as well as information on S3 vents, for networking, contacts with regions with similar specialisation, make regional fields of activities visible, critical mass gaining and learning from other regions. The participants also indicated the three main disadvantages for platforms (e.g. RIS3- Smart Specialisation Platform, European Technology & Innovation Platform, etc.): (1) they are too academic and therefore are quite difficult to understand and explain to the relevant stakeholders, such as clusters, rtos, companies, (2) the platforms do not provide any kind of financial assistance to regions and (3) too many platforms lack comprehensive or transparent information about specific regions that work on RIS3. Moreover, **they stress that they would be interested in platforms for networking (32%), scale-up business support schemes (13%), access to funds (25%), webinars and e-learning activities (24%). When asked on which levels they would like platforms, 27% of participants would like platforms on a broader regional level (e.g. Alpine Region, Mediterranean region), 20% on a regional level, 17% on a national level and 13% on a local level.**

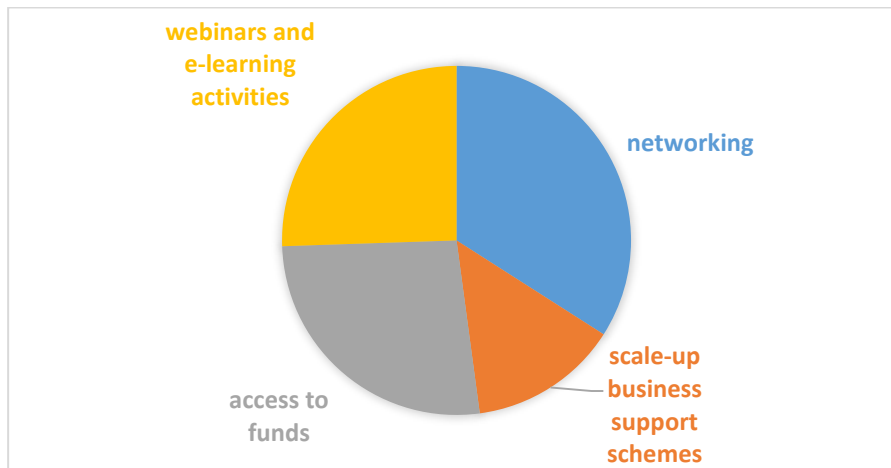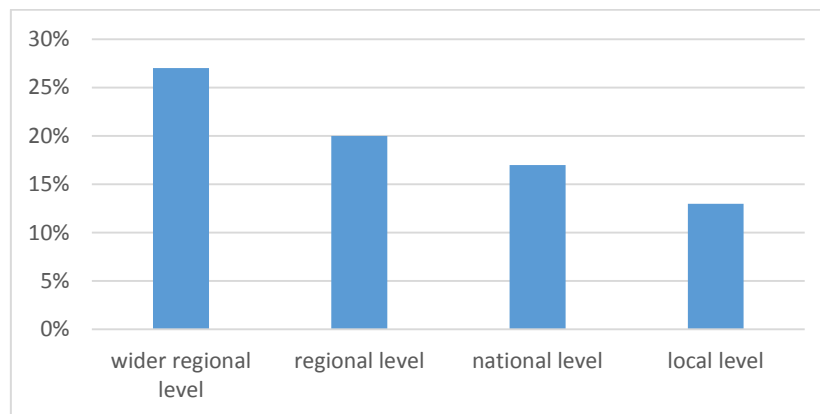**Chart 2: PA's interest in different kinds of platforms**

Figure 6: Level of platforms according to PAs

Then, we asked participants about their Smart Specialisation Strategy (S3) and specific strategic R&I topics. The data shows that public authorities in Alpine regions are currently mostly involved in digital transformation (21%), sustainable innovation (15%), key enabling technologies (12%), nature & biodiversity (10%), cultural & creative industries (9%), service innovation (9%), public health & security (8%), social innovation (5%), aeronautics & space (4%), Blue growth (marine and maritime sectors) (4%) and other (5%).

The central topic dealt with within the questionnaire focused on the strategic R&I priorities that will be defined in the next programming period (2021-27). The data demonstrates that Alpine regions' priorities in the future programming period will be as shown in Chart 3.

Chart 3: Alpine regions' priority topics in the future programming period
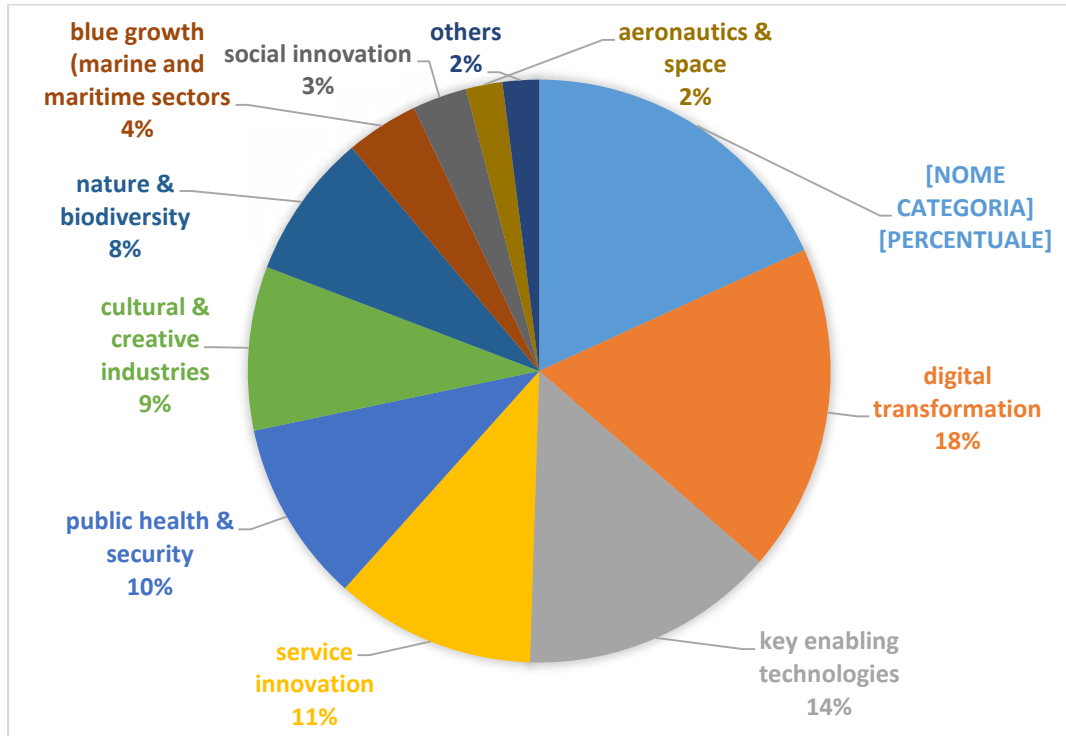
From the data, we can see that current and future R&I topics are in line, while most participants stress the **topics: sustainable innovation, digital transformation and key enabling technologies.**

In addition, the questionnaire asked with which organisations they currently work when preparing their R&I strategies. The participants answered that when preparing strategies **they mostly work with regional public authorities (16%), national public authorities (15%), education and research centres/schools/universities (15%), local public authorities (13%), business support organisations (e.g. Chamber of Commerce) (13%), other enterprises (11%), interest groups including NGOs (8%) and international organisations (8%)**. The results are shown in Chart 4.

Chart 4: The institutions that PAs are more interested in for cooperation
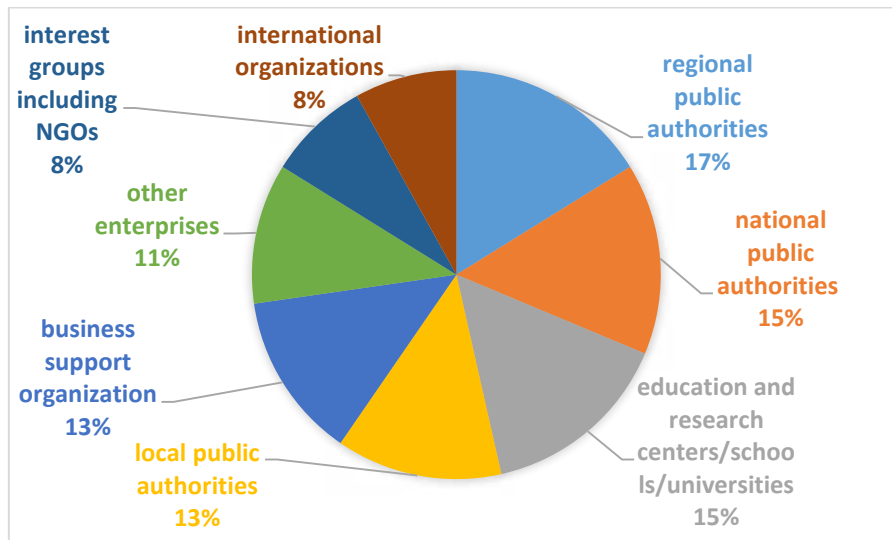
Furthermore, from figures 5-8, we can see that participants in the survey would most likely cooperate on the subnational, regional, national and transnational levels with public administration from their fields, then with universities/research institutions from their field and least with businesses from their field.

Figure 7: The likelihood of cooperation on a subnational level
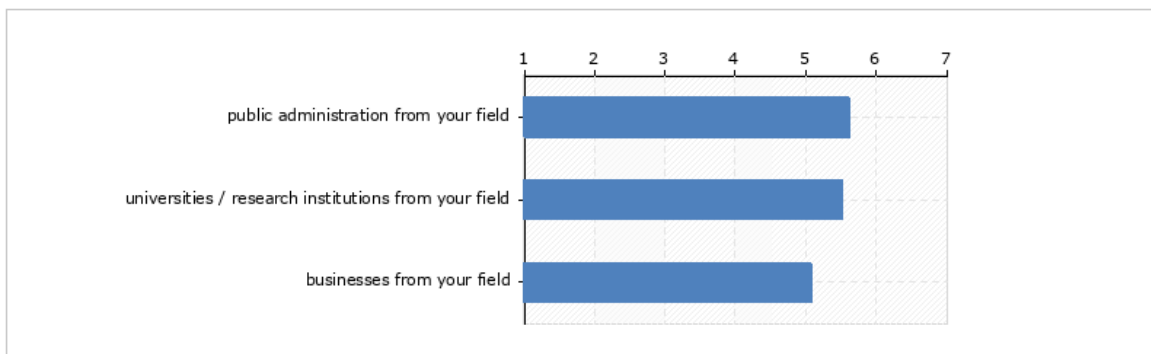
Figure 8: The likelihood of cooperation on a regional level
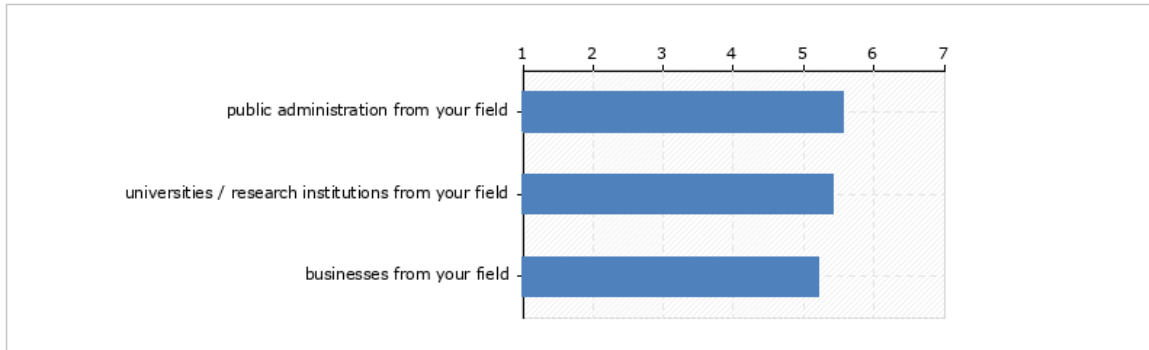
Figure 9: The likelihood of cooperation on a national level

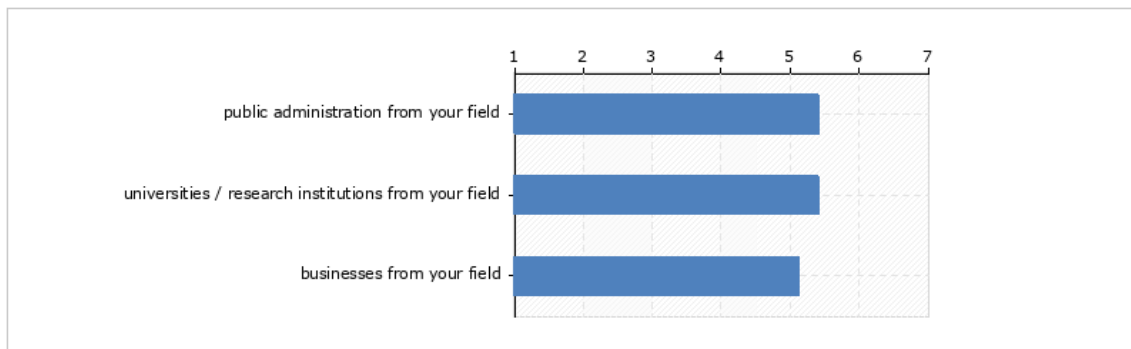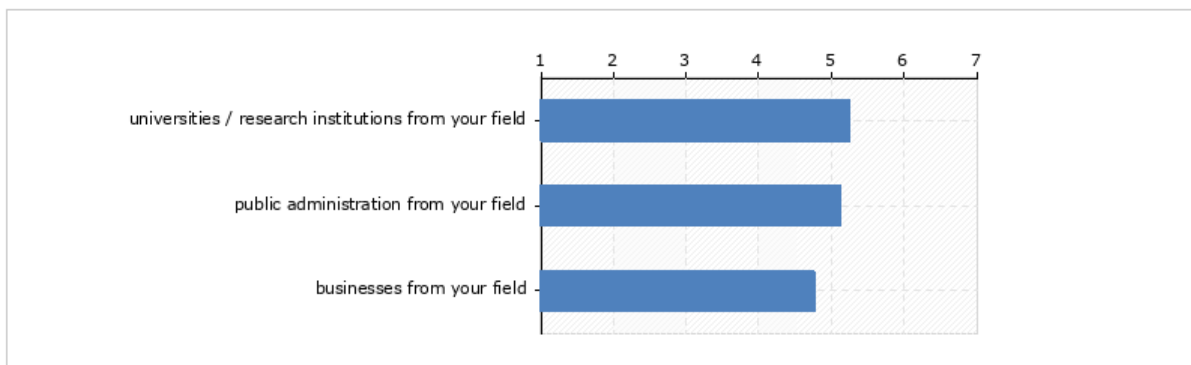**Figure 10: The likelihood of cooperation on a transnational level**

5.2 Results of current and future smart specialisation strategy (S3) topics [32]

In order to offer in-depth knowledge about current and future smart specialisation strategy (S3) topics, we provide a detailed analysis of chosen topics from each country and region in the Alpine Region. The results are presented in Figure 11 and Figure 12. Currently, almost all countries in Alpine regions focus their smart specialisation strategy (S3) on digital information, except France. In addition, almost all countries in Alpine regions focus their smart specialisation strategy (S3) on sustainable innovation, except Slovenia and Switzerland. In the future, almost all countries in Alpine regions will focus their smart specialisation strategy (S3) on sustainable innovation, except France.
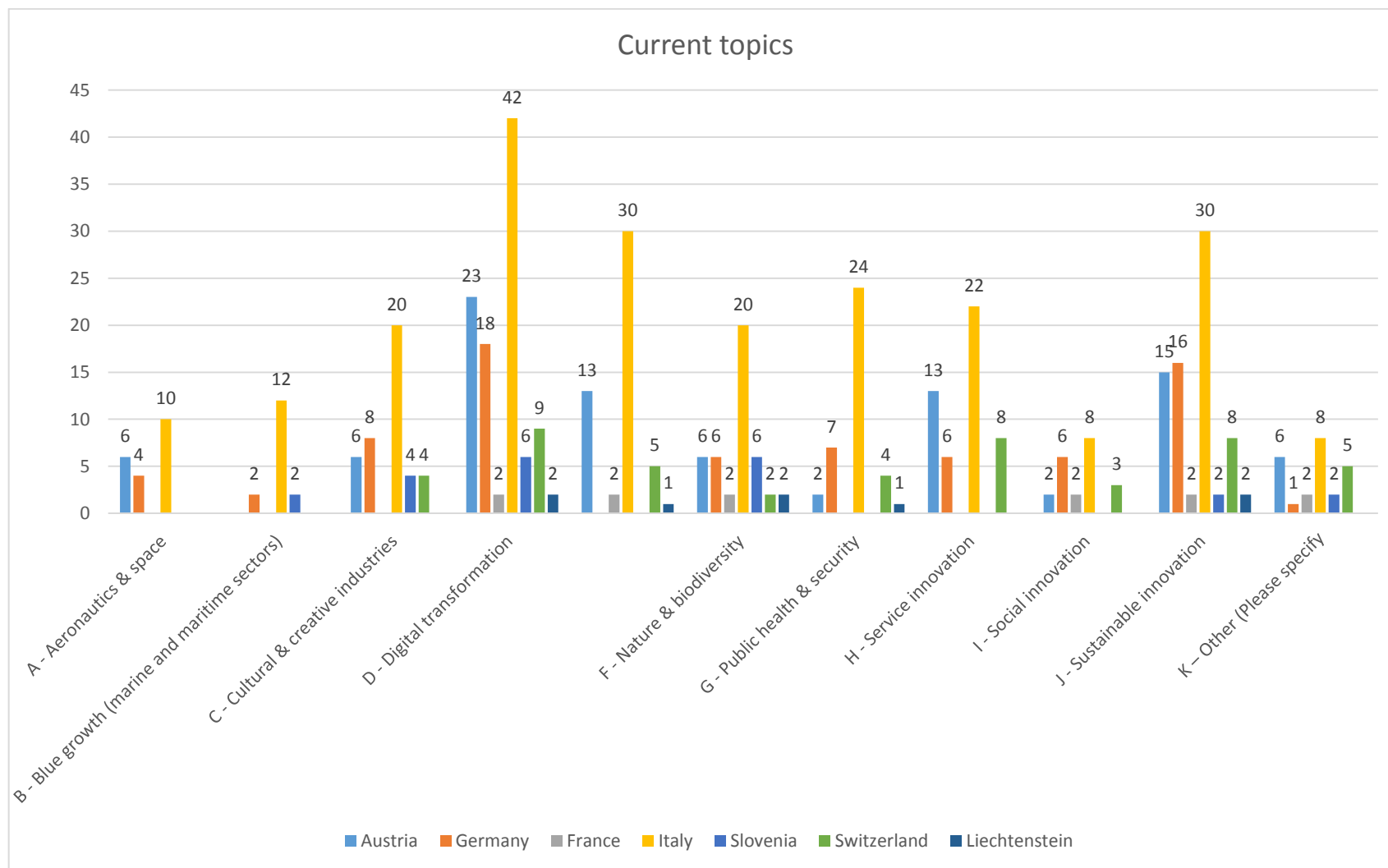
The results from the survey revealed that regions in Austria are currently mostly working on S3 topics digital transformation, sustainable innovation and key enabling technologies. In the upcoming programming period, the Austrian Alpine regions will also work on digital transformation and sustainable innovation, however, they will also be interested more in the topic of cultural & creative industries. Italian Alpine regions are currently mostly dealing with smart specialisation topics like digital transformation, sustainable innovation, key enabling technologies and public health & security. The regions will be interested in the same topics in the next programming period.

French Alpine regions defined the priorities in the current smart specialisation strategy (S3) programming period, namely: key enabling technologies, social innovation and sustainable innovation. In the upcoming programming period, French Alpine regions will mostly be interested in social innovations. Alpine regions in Germany defined the priorities in the current S3 programming period, namely: digital transformation and sustainable innovation. In the upcoming programming period, German regions will be interested in digital transformation, sustainable innovation and (new) public health & security. Slovenia defined its current S3 priorities as: digital transformation and nature & biodiversity. In the future, Slovenian regions will focus their S3 on nature & biodiversity and they will add sustainable innovation. Swiss regions defined the following priorities: service innovation and digital transformation, and in the future, they will be most interested in key enabling technologies, sustainable innovation and public health & security.

Table 9 presents R&I S3 topics of interest for Alpine Regions within the upcoming programming period.

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[32] Switzerland is not a member state of the European Union (EU) and as such is outside the influence radius of national and regional innovation strategies for smart specialisation (RIS3). Nevertheless, to obtain comparable data in the Alpine region, Switzerland was included in the survey. Representatives of Switzerland replied to the questionnaire according to their cantonal R&I strategies and not according to RIS3.

Figure 11: Smart Specialisation Strategy R&I priorities that countries defined in the current programming period

Current topics

Legend: Austria, Germany, France, Italy, Slovenia, Switzerland, Liechtenstein
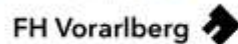
Figure 12: Smart Specialisation Strategy R&I topics that countries will be interested in the future
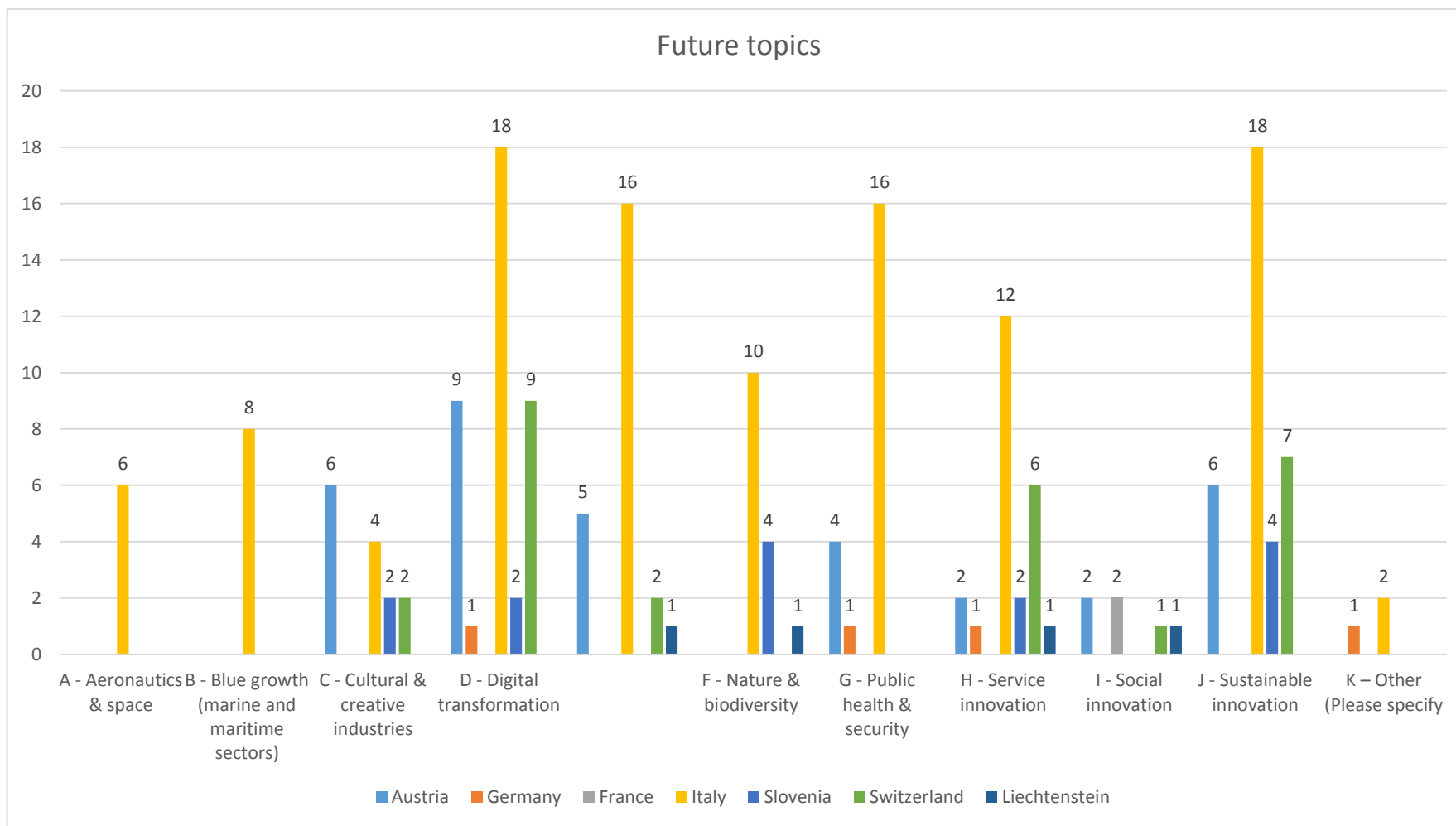
Table 9: Future topics by regions[33]

Topics	Future
A - Aeronautics & space	Tirol
	Piemonte, Lombardia
B – Blue growth	Schwyz
C - Cultural & creative industries	Oberösterreich, Salzburg
	Bavaria
	Lombardia, Trento, Friuli-Venezia Giulia
	Bern, Obwalden, Valais, Zürich
D - Digital transformation	Niederösterreich, Vorarlberg
	Baden-Württenberg, Bavaria
	Franche-Comté
	Piemonte, Valle d'Aosta, Lombardia, Bolzano, Trento, Friuli-Venezia Giulia
	Bern, Fribourg, Glarus, Graubünden, Lucerne, Schaffhausen, Schwyz, Ticino, Valais, Vaud, Zürich
	Liechtenstein
E - Key Enabling Technologies (KETs) (nanotechnology, micro and nanoelectronics, photonics, advanced materials, industrial biotechnology and advanced manufacturing technologies)	Kärnten, Oberösterreich, Salzburg
	Lombardia, Friuli-Venezia Giulia
	Basel-Landschaft, Basel-Stadt, Jura, Obwalden, Graubünden, Schaffhausen, Zürich
	Liechtenstein
F - Nature & biodiversity	Burgenland
	Bavaria
	Valle d'Aosta, Bolzano, Trento, Veneto, Friuli-Venezia Giulia
	Franche-Comté
	Slovenia
	Liechtenstein
G - Public health & security	Salzburg
	Baden-Württenberg, Bavaria
	Valle d'Aosta
	Lombardia, Trento
	Basel-Landschaft, Basel-Stadt, Jura, Appenzell Ausserrhoden
H - Service innovation	Baden-Württenberg, Bavaria
	Lombardia, Trento
	Basel-Landschaft, Basel-Stadt, Jura, Bern, Fribourg, Schwyz, Ticino, Valais, Vaud
	Liechtenstein
I - Social innovation	Bavaria, Trento
	Auvergne-Rhône-Alpes, Provence-Alpes-Côte d'Azur
	Lombardia, Bolzano, Trento, Veneto
	Valais
	Liechtenstein
J - Sustainable innovation	Oberösterreich, Burgenland, Niederösterreich
	Valle d'Aosta, Lombardia, Trento, Friuli-Venezia Giulia
	Slovenia
	Bern, Fribourg, Glarus, Lucerne, Ticino, Valais, Vaud, Zürich
	Liechtenstein
K – Other (Please specify	Wien, Steiermark
	Baden-Württenberg, Bavaria
	Appenzell Innerrhoden, Uri

[33] For the Italian region Liguria, the data is missing. For the Swiss cantons Aargau, Geneva, Neuchatel, Nidwalden, Solothurn, St. Gallen, Thurgau and Zug, the data is missing.

In the upcoming programming period, the Alpine regions should focus their priorities on the following topics, namely:

- digital transformation,
- service innovation and
- sustainable innovation.

These topics represent areas of common interest for the majority of analysed Alpine regions, present an additional value for cooperation at the macro-regional level and can potentially make a significant contribution to the promotion of innovation, business support and the labour market. Emphasising these priorities could further strengthen regional innovation potential and at the same time address existing regional challenges.

6 Conclusion: Main finding and inputs for further steps towards OT1 Blueprint

The main findings that can be used from the research among policymakers are:

- From the data, we can see that current and future Smart Specialisation Strategy (S3) and specific strategic R&I topics are in line;
- the most stressed topics are: sustainable innovation, digital transformation and key enabling technologies;
- when preparing strategy, national policymakers mostly work with regional public authorities (16%), national public authorities (15%), education and research centres/schools/universities (15%), local public authorities (13%) and business support organisations (e.g. Chamber of Commerce) (13%),
- policymakers would especially like to cooperate with public administration from their fields at the subnational, regional, national and also transnational level and then with universities or research institutions,
- they would be interested in platforms for networking (32%), scale-up business support schemes (13%), access to funds (25%), webinars and e-learning activities (24%);
- 27% of policy makers would like platforms on a broader regional level (e.g. Alpine Region, Mediterranean region), 20% on a regional level, 17% on a national level and 13% on a local level.

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R&I Alpine Region Talk

Agenda

10:00-10:10 | Prof. Giuseppe De Luca, A-Ring P.I.
Greetings & Introduction of the Interreg Alpine Space A-RING project

10:10-10:20 | Dott. Valentina Santin, Lombardy Region
Institutional forward

10:20-12:00 | Thematic presentations – Seven young professionals presenting their field of work within A.R. shared R&I-S3 topics

12:00-13:00 | Panel Discussion –

Moderation

Floriana Mulazzi
University of Milan

Smart Mobility – Connecting the Alpine Region
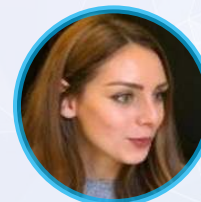
Samuel Würtz
University of Applied Sciences Kempten

Marco Slavich
AREA Science Park

Alessia Padalino
Codognotto Spa AT-IT

Green Energies – Solutions for sustainable communities

Federica Savini
Ricerca sul Sistema Energetico Spa

Guido Coletta
Ricerca sul Sistema Energetico SpA

Industry 4.0 – Smarter processes for improved production

Pietro Fedon
Fedon Spa

Andrea Micheli
Fondazione Bruno Kessler

FH Vorarlberg

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