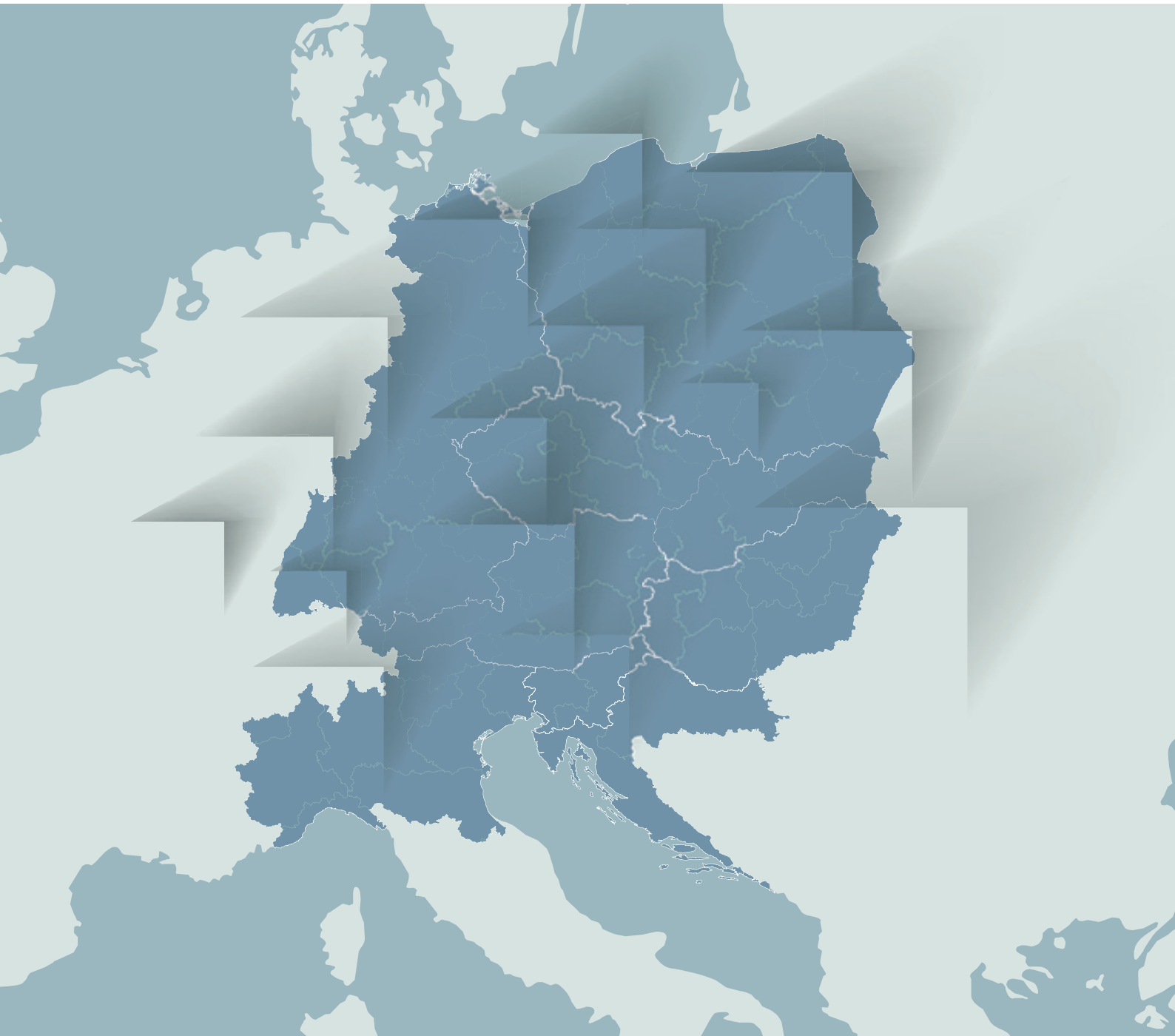
Interreg
CENTRAL EUROPE
European Union
European Regional
Development Fund

THEMATIC FOCUS OF THE FOURTH CALL:
THE SEVEN TOPICS

ANNEX I

4 March 2019



Introduction to pre-selected topics for the fourth call and their contribution to corresponding priorities and specific objectives

Annex I provides information on the thematic focus of the fourth call for proposals which is restricted to seven topics. The contribution to Specific Objectives (SO) of the programme, related challenges and expected results is presented for each selected topic.

The following table links the seven topics with the relevant programme priority axes and SOs. Please note that the fourth call is restricted to applications in the SOs listed below.

	TOPIC/THEMATIC CLUSTER	PRIORITY	SPECIFIC OBJECTIVE	
I.	Industry 4.0/advanced manufacturing	1	1.1	To improve sustainable linkages among actors of the innovation systems for strengthening regional innovation capacity in central Europe
II.	Social entrepreneurship	1	1.2	To improve skills and entrepreneurial competences for advancing economic and social innovation in central European regions
III.	Energy efficient renovation of public buildings in cities	2	2.1	To develop and implement solutions for increasing energy efficiency and renewable energy usage in public infrastructures
IV.	Low carbon mobility and urban air quality	2	2.3	To improve capacities for mobility planning in functional urban areas to lower CO2 emissions
V.	Climate change adaptation and risk prevention	3	3.1	To improve integrated environmental management capacities for the protection and sustainable use of natural heritage and resources
VI.	Cultural heritage (sites & buildings) at risk	3	3.2	To improve capacities for the sustainable use of cultural heritage and resources
VII.	Accessibility for peripheral and border regions to TEN-T & CNC networks / nodes	4	4.1	To improve planning and coordination of regional passenger transport systems for better connections to national and European transport networks

I. Industry 4.0/Advanced manufacturing

This topic contributes to SO 1.1 "To improve sustainable linkages among actors of the innovation systems for strengthening regional innovation capacity in central Europe".

THEMATIC FOCUS

The thematic focus of the fourth call in SO 1.1 is on **Industry 4.0 and Advanced manufacturing**. Projects are expected to tackle challenges related to the transformation and growing complexity of manufacturing systems, to the effective use of advances in science and engineering that create new opportunities for manufacturers, and to the scaling-up of emerging technologies into commercial manufacturing applications. For central Europe this topic is essential because this functional area is characterised by a strong manufacturing industry, which is now in need to keep up with technological trends and concepts of digitalisation (such as internet of things, big data and cloud computing, 3D printing and visualisation technologies, artificial intelligence or advanced robotics).

Related to the exploitation of existing results, nine Interreg CE projects with direct and relevant contributions to this topic were identified and are listed at the end of this document. They address this topic from different and complementary perspectives and focus on various challenges of the above mentioned technology areas by e.g.

- Boosting linkages and capacities amongst the relevant technology and innovation actors of smart engineering and rapid prototyping,
- Improving the adoption of advanced manufacturing technologies and micro- and nanotechnology-related processes and materials by SME,
- Bridging service gaps and enabling SMEs across central Europe to access high level technology services
- Testing transnational advanced manufacturing qualification programmes and crowd funding solutions
- Supporting the servicing of processes in manufacturing companies etc.

CHALLENGES

Central Europe faces crucial disparities regarding regional innovation. "Islands of innovation", located around agglomerations or in western intermediate areas, have been established with well performing innovation systems characterised by strong links between its actors. However, several, mostly rural and peripheral regions and areas are characterised by a low level of R&D and weak linkages, which result in insufficient technology transfer and problems to access R&D-results and financing of innovation, especially for SMEs. The dynamism of regions and their connections through networks are opportunities in the frame of the globalisation process (Territorial Agenda 2020).

There is a high and mostly unexploited potential of transnational cooperation for enhanced implementation of support structures and measures for improving the performance of regional innovation ecosystems in the area of advanced manufacturing and Industry 4.0. Further development of instruments for place-based and innovation-driven growth is needed in order to improve innovation and digitalisation capacities and thus increase productivity of SMEs in central European regions.

Since innovation and technology development are the result of a complex set of relationships among key actors of the regional innovation systems (within RIS3), stronger links within and between regions as well as a critical mass of innovative actors are required (especially applying a triple or quadruple helix approach) for improving innovation capacity. This shall further enhance knowledge and technology transfer between key players of innovation systems in order to bring innovation closer to the market and will ultimately contribute to innovation-driven growth at regional level and reduce disparities.

In this context, an innovation system is to be understood as "the network of institutions in the public and private sectors whose activities and interactions initiate, import, modify and diffuse new technologies" (cf. Freeman, 1987). Actors of the innovation system include stakeholders from the research and business sectors, policy makers and public authorities.

POLICY FRAMEWORK

The topic of Industry 4.0 and advanced manufacturing reflects the importance of industry in central Europe, in particular the manufacturing sector, and the high interest of innovation actors across the central Europe area in cooperating on this topic and related challenges.

Projects focussing on Industry 4.0 and advanced manufacturing funded under SO1.1 in the first and second call compose of the largest thematic cluster with a high strategic relevance, e.g. contributing to the European Strategy for Deployment of Key Enabling Technologies (KETs) as outlined in the Communication 'A European Strategy for Key Enabling Technologies – A bridge to growth and jobs' (2012) [1]. KETs are considered a central industrial policy as they provide the basis for innovation in a whole array of industries and, when exploited appropriately, may reverse the decline in manufacturing and boost growth and jobs. The importance of KETs for European industrial future is also further reiterated in the industrial policy Communication, A Stronger European Industry for Growth and Economic Recovery' (2012) [2] and ‚For a European Industrial Renaissance' (2014) [3].

EXPECTED RESULTS

Transnational cooperation among those industrial sectors that are technology priority areas in central Europe will help to strengthen regional innovation capacities and contribute to a better implementation of regional smart specialisation strategies.

Transnational and internationalised regional networks and clusters will help to foster technology transfer and the development and implementation of new services that support innovation in businesses. Sustainable linkages between regional ecosystems will contribute to increasing regional competitiveness and resilience. Increased cooperation between RIS3 key actors will improve access to research results, thus stimulating further investment in innovation.

The main result envisaged can be summarised as: *"Increased and more sustainable linkages of actors in the innovation systems achieved through transnational cooperation strengthening the innovation capacity within central European regions".*

[1] COM(2012) 341 final, https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0341:FIN:EN:PDF

[2] COM(2012) 582 final, https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0582:FIN:EN:PDF

[3] COM(2014) 14 final, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0014&from=EN

II. Social entrepreneurship

This topic contributes to SO 1.2 "To improve skills and entrepreneurial competences for advancing economic and social innovation in central European regions".

THEMATIC FOCUS

The thematic focus of SO 1.2 is on social entrepreneurship. The potential of **social entrepreneurship** is not fully used due to lacking skills and an underdeveloped eco-system with fragmented and unstable support structures. At the same time there is quite some variation across central Europe. Therefore, the aim is to enrich, improve and exploit outputs and results that were developed and achieved by projects of the first and second call (as listed at the end of this document) in order to:

- Provide better support to existing social enterprises;
- Foster the creation of new social businesses; and
- Improve the overall policy and support framework to social economy sector.

Related to the exploitation of existing results, five Interreg CE projects with direct and relevant contributions to this topic were identified. These focus on technological competences and social innovation capacity of work integration social enterprises, on developing applicable solutions for skill development, on mentoring and networking of social enterprises, on improving skills among entrepreneurs in responsible innovation, and on strengthening social innovation capacities and support to business succession in the central Europe.

CHALLENGES

Demographic change and migration issues are affecting the labour market throughout central Europe. This is particularly evident in regions with shrinking populations and related brain drain effects (peripheral and rural areas) thus deteriorating their competitiveness (Territorial Agenda 2020). Peripheral regions and areas are marginalised or badly accessible territories, which offer poor job opportunities and suffer from out-migration.

The topic of social innovation and social entrepreneurship is highly relevant, however its implementation in central Europe still remains challenging. Social innovations comprise of new ideas (products, services and models) that simultaneously meet social needs (more effectively than alternatives) and create new social relationships or collaborations. [4] The growth of social innovation in Europe is hampered by insufficient knowledge of the sector, limited support of grass roots and social entrepreneurship activities, poor diffusion and limited scaling-up of good practices, and poor methods of impact evaluation [5].

Furthermore, important social challenges (unemployment, migration) need to be tackled in order to improve the integration of vulnerable and disadvantaged target groups by supporting the development of human capital and social economy in central Europe. This is of particular relevance in remote areas and disadvantaged regions. In this context, social entrepreneurs have an important role as innovators, drivers of social inclusion and as operators in the social economy that create a positive social impact. Social entrepreneurs can drive social innovation and transformation in various fields including education, health, environment, and enterprise development.

In this context, social entrepreneurship is to be understood as the "use of the techniques by start-up companies and other entrepreneurs to develop, fund and implement solutions for social, cultural, or environmental issues" [6].

POLICY FRAMEWORK

The thematic focus of the fourth call on social entrepreneurship contributes to the overall EU aim of social inclusion and the objectives of the Social Business Initiative [7] launched by the European Commission in 2011, which focuses on the legal and financial frameworks for social enterprises as well as on raising visibility.

Social economy and social innovation is important in central European regions. It has the potential to bring those furthest away from the labour market to gainful employment. The Social Investment Package [8] as introduced by the European Commission in 2013 urges Member States to innovate their welfare system. This affects in particular certain policies important for economic growth, including active labour market policies. Evidence shows, however, that due to policy misfit and shortcomings in policy delivery, some groups of unemployed remain jobless and their employability further deteriorates. Therefore, the support to social businesses may help integration of such specific groups in the labour market. This will fill the gap and complement the standard active labour market policies.

EXPECTED RESULTS

By stimulating mutual exchange and learning, transnational cooperation will further support social entrepreneurship by building technological and managerial competences as well as promoting entrepreneurial mind sets and initiatives creating positive social effects. This will help to meet social needs and further improve the capacities of regions to manage new challenges such as those deriving from demographic change, migration and brain drain.

The main result envisaged can be summarised as: *"Improved capacities of the public and private sector for the skills development of employees and entrepreneurial competences, which will have been achieved through transnational cooperation that drives forward economic and social innovation in central European regions".*

[4] Open Book of Social Innovation (Murray et. al, 2010) available at https://youngfoundation.org/wp-content/uploads/2012/10/The-Open-Book-of-Social-Innovationg.pdf.

[5] Empowering people, driving change: Social innovation in the European Union (bepa – Bureau of European policy advisers, 2011), available at http://ec.europa.eu/DocsRoom/documents/13402/attachments/1/translations

[6] https://en.wikipedia.org/wiki/Social_entrepreneurship

[7] Social Business Initiative available at http://ec.europa.eu/growth/sectors/social-economy/enterprises_en.

[8] Further information on Social Investment Package available at https://ec.europa.eu/social/main.jsp?langId=en&catId=1044&newsId=1807&furtherNews=yes.

III. Energy efficient renovation of public buildings in cities

This topic is related to SO 2.1 "To develop and implement solutions for increasing energy efficiency and renewable energy usage in public infrastructures".

THEMATIC FOCUS

The fourth call thematically focuses within SO 2.1 on **energy efficient renovation of public buildings in cities**. Energy renovation of public buildings in city centres is important because of its impact on citizens since these buildings can, in many cases, be presented as role model buildings. The potential of deep retrofit of such buildings is, however, not yet fully used and the refurbishment proves often to be complicated. Therefore, the aim is to enrich, improve and exploit the outputs and results developed and achieved within projects of the first and second call in order to:

- Provide better support to the refurbishment of existing building stock in central European city centres;
- Foster the creation of new and innovative financing models for energy retrofit; and
- Improve the overall policy and support framework of the energy retrofit of building sector.

As a starting point for the fourth call, five Interreg CE projects with direct and relevant contributions to this topic were identified. They focus on the public and private building sector, on introducing innovative financing models for deep retrofit of buildings, on the implementation of energy efficiency and renewable energy measures to achieve nearly zero energy buildings by managing the demand side energy management, and on developing methods and tools to facilitate the implementation of energy efficiency strategies and action plans of central European cities.

CHALLENGES

Most central European regions show high energy consumption and a low degree of energy efficiency of buildings and infrastructure. Taken together these are the main contributors to greenhouse gas emissions. The efficient use of energy can make an important contribution to achieving a low-carbon economy and combating climate change. It will also contribute to decreasing central Europe's energy import dependence and will in many cases imply positive effects on air quality.

Increasing energy efficiency and renewable energy usage in public infrastructures (i.e. infrastructure owned by the public and/or for public use) is a priority given the large potential for fossil fuel energy savings. It will also help spreading approaches to other sectors and have a multiplying effect.

Despite some central European regions being quite advanced in terms of energy saving technologies, there is the need for increasing the overall capacity of the public sector for implementing measures to reduce CO2 emissions of public infrastructure. In particular, public infrastructure owners and operators often lack the necessary expertise (i.e. methods and technologies) for reducing energy consumption or replacing the consumption of fossil fuels with renewable energy sources.

POLICY FRAMEWORK

Buildings are responsible for approximately 40 % of energy consumption and 36 % of CO2 emissions in the EU. On 30 November 2016, as part of the Clean Energy for All Europeans package, the EU Commission proposed an update of the Energy Performance of Buildings Directive to promote the use of smart technology in buildings, to streamline existing rules and accelerate building renovation. [9] Part of the Energy Performance of Buildings Directive (EPBD) [10] requires EU Member states that all new buildings must be nearly zero-energy buildings by 31 December 2020 (public buildings since 31 December 2018). The new and revised Energy Performance of Buildings Directive requires a common European scheme for rating the smart readiness of buildings. Smart technologies will be further promoted, for instance through requirements on the installation of building automation and control systems and on devices that regulate temperature at room level. These requirements are especially challenging for central Europe, since in most cities the buildings belong to sites of (partly protected) national and cultural heritage where not so many measures on energy efficiency and renewable system integration can be implemented.

EXPECTED RESULTS

Transnational cooperation will help to reduce know-how disparities and increase capacities of the public sector and related entities for improving the energy efficiency of public infrastructures. It will ultimately reduce their energy consumption and CO2 emissions. This shall be achieved through strengthening competences as well as developing and implementing strategies, management approaches and financing schemes, which will serve as seedbed for higher energy efficiency. This will consequently leverage further investment such as the renovation and upgrading of the energy efficiency level of public infrastructure. Furthermore, the usage of renewable energy in public infrastructures will be fostered through identifying potentials, testing innovative solutions and preparing follow-up investments.

The main result envisaged can be summarised as: *"Improved capacities of the public sector and related entities for increased energy efficiency and renewable energy use in public infrastructures in central Europe achieved through transnational cooperation"*.

[9] DIRECTIVE 2010/31/EU, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0031&qid=1544708005194&from=EN

[10] DIRECTIVE 2010/31/EU, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0031&qid=1544708076274&from=EN

IV. Low carbon mobility and urban air quality

This topic contributes to SO 2.3 "To improve capacities for mobility planning in functional urban areas to lower CO2 emissions".

THEMATIC FOCUS

The topic of **low carbon mobility and urban air quality** selected for the fourth call contributes to SO 2.3 and aims to address the current challenges through introduction of efficient measures enabling to counterbalance negative effects of urbanisation processes and growing transport demand, which lead to increased greenhouse gas emissions and amplification of climate change impacts but also deterioration of air quality in functional urban areas in central Europe.

As a starting point for exploitation of existing results, eight Interreg CE projects with direct and relevant contributions to this topic were identified and are listed at the end of this document. They address this topic from different and complementary perspectives and target different types and specific elements of low carbon mobility and urban air quality, such as e.g.:

- Smart solutions for low emission zones and low-carbon mobility policies in FUAs,
- Institutional mobility plans for city administrations to change the commuting and business travel behaviour,
- Sustainable urban freight transport planning,
- Sustainable planning for smart commuting,
- Integrated low-carbon urban mobility planning and related capacity building,
- Low carbon mobility planning for smart and multimodal integration of airports into FUAs,
- Environmental management capacities to tackle severe air pollution episodes and
- Common approaches to air pollution management in border regions.

CHALLENGES

In central Europe transport is the second largest energy consuming sector and the fastest growing in terms of energy use. Its strong reliance on fossil fuels means high greenhouse gas emissions driving climate change as well as lowering air quality (e.g. nitric oxides emissions, particular matter and ozone). Due to the existing urbanisation tendencies these developments challenge especially central European cities, where transport demand is constantly increasing and negative externalities are most evident.

For addressing these issues and achieving the overall goal of reducing CO2 emissions there is a need to improve the energy efficiency of urban transport. However, due to the importance of interactions between cities and their hinterlands (e.g. for commuters), urban mobility challenges are to be considered at the level of functional urban areas (FUA). According to the OECD, European Commission and Eurostat (OECD, 2012), a functional urban area is defined as a functional economic unit, which is characterised by densely inhabited "urban cores" and "hinterlands", whose labour markets is highly integrated with the cores.

A high potential for the reduction of greenhouse gas emissions and air pollution lies within the public transport sector. However, capacities of the public sector and related entities for low-carbon mobility planning at the level of FUAs are unevenly spread across central Europe and need to be improved through better governance and integrated approaches to planning. This calls for a closer vertical and horizontal coordination and integration of mobility planning and solutions between urban cores and their hinterlands.

POLICY FRAMEWORK

Central Europe includes many regions in which urbanisation processes generate urban environmental challenges, including poor air quality. The EU Ambient Air Quality (AAQ) Directive [11] provides the current policy framework for the control of ambient concentrations of air pollution in the EU. Limiting emissions from transport through severe traffic management measures, such as restricting the use of private cars with old and outdated engines, are under way in order to improve the air quality in cities. The Urban Mobility Package (2013) [12] provides important elements of the relevant EU policy framework. It notably underlines the role of sustainable urban mobility planning and its integration in wider urban and territorial development strategies, the use of smart urban access regulations, and the need for better interoperability of ITS solutions between urban and surrounding interurban (FUA) transport networks. Low-carbon mobility is also addressed in the European Strategy for Low-Emission Mobility (2016) [13], which outlines the importance of: digital mobility solutions, efficient and fair pricing in transport, multi-modal transport with a focus on the shift to active travel modes and infrastructure for alternative fuels. In particular cities and urban areas, which are often in breach of air pollution limits, are expected to act and integrate mobility demands into spatial planning and encourage modal shift towards low-carbon modes.

EXPECTED RESULTS

Transnational cooperation can help to increase planning capacities of the public sector and related entities for low-carbon mobility by bringing together territorial fore-riders with those lagging behind, thus enhancing low-carbon mobility in central European functional urban areas and reducing air pollution. This will allow for the development and implementation of integrated mobility concepts, the setting up of coordinated management structures and the deployment of innovative technologies. The promotion of innovative low-carbon mobility solutions at transnational level will support authorities in their efforts towards the goal of sustainable mobility and air quality.

The main result envisaged can be summarised as: *"Improved capacities of the public sector and related entities for low-carbon mobility planning in central Europe's functional urban areas achieved through transnational cooperation"*.

[11] DIRECTIVE 2008/50/EC, https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02008L0050-20150918&from=EN

[12] Further information on Urban Mobility Package available at https://ec.europa.eu/transport/themes/urban/urban_mobility/ump_en.

[13] European Strategy for Low-Emission Mobility available at https://ec.europa.eu/transport/sites/transport/files/themes/strategies/news/doc/2016-07-20-decarbonisation/com%282016%29501_en.pdf

V. Climate change adaptation and risk prevention

This topic contributes to SO 3.1 "To improve integrated environmental management capacities for the protection and sustainable use of natural heritage and resources".

THEMATIC FOCUS

The thematic focus in SO 3.1 addresses the topic of **climate change adaptation and risk prevention**. In particular, vulnerability to climate change is considered as one of the most pressing environmental challenges and issues in central Europe. This is due to more frequently occurring heavy rains that cause environmental damages and floods, and hotter summers and heat waves that lead to increased water scarcity but also erosion of soils, loss and degradation of biodiversity, the economy and human health.

As a starting point for exploitation of results, four Interreg CE projects are listed at the end of this document. These show a direct contribution to the targeted topic by addressing the challenges linked to climate change adaptation and risk prevention, such as e.g.:

- Reduction of environmental risks caused by heavy rains,
- Flood prevention and mitigation of drought impacts on water resources through sustainable land-use management,
- Adaptation of forest ecosystems to climate change effects and building small water retention measures for the climate-proof management of water resources.

CHALLENGES

Central Europe has a rich natural heritage including important eco-systems and abundant biodiversity. This heritage and related natural resources are highly valuable and need to be preserved, protected and if necessary ecologically restored. At the same time natural heritage is an important location factor and the use of its assets can serve as a driver for economic development. As a consequence, natural heritage and resources (including water, soil, fauna and flora) are subject to numerous pressures and usage conflicts, e.g. between environmental protection and industry, agriculture, transport, urbanisation or tourism. Further pressure arises from the increasing risk of natural hazards linked to the effects of climate change. The loss of biodiversity, the vulnerability of natural heritage and landscapes as well as the effects of climate change have a strong impact at territorial level (cf. Territorial Agenda 2020).

The complexity of these challenges requires integrated approaches based on sustainable long-term strategic visions linking different policies, sectors and administrative levels. Integrated environmental management thereby means a comprehensive approach to natural resource planning and management that encompasses ecological, social, and economic objectives (such as river basin management plans, air quality etc.). It considers interrelations among different elements and incorporates concepts of carrying capacity, resilience and sustainability. The capacities for such integrated environmental approaches are, however, not yet sufficiently established in the public sector and in related entities dealing with the protection and sustainable use of natural resources. This is notably shown by the large number of usage conflicts and pressures on natural heritage and resources in many central European regions.

POLICY FRAMEWORK

The topic of climate change adaptation and risk prevention shows a clear link to the EU Strategy on Adaptation to Climate Change [14] and the Territorial Agenda of the European Union 2020 aimed at counterbalancing the negative impacts of climate change and prevention of environmental risks and making the EU more climate-resilient. Moreover, efforts to reduce disaster risks and at the same time adapt to a changing climate are not only an EU but also a global priority, since they are among the main goals of the UN 2030 Agenda for Sustainable Development.

EXPECTED RESULTS

Transnational cooperation will help to improve the capacities of relevant actors by supporting the development and implementation of integrated environmental strategies and tools as well as through the joint testing of pilot solutions. This will facilitate a larger uptake of integrated environmental concepts into the public and private sectors including the application of innovative technologies and the introduction of resource efficient solutions.

The main result envisaged can be summarised as: *"Improved integrated environmental management capacities of the public sector and related entities for the protection and sustainable use of natural heritage and resources in central Europe achieved through transnational cooperation"*.

[14] The EU Strategy on adaptation to climate change available at https://ec.europa.eu/clima/sites/clima/files/docs/eu_strategy_en.pdf

VI. Cultural heritage (sites & buildings) at risk

This topic contributes to SO3.2 "To improve capacities for the sustainable use of cultural heritage and resources".

THEMATIC FOCUS

The thematic focus of the fourth call in SO 3.2 is on the topic of **cultural heritage (sites & buildings) at risk**. It directly targets the current challenges related to the continuous pressures resulting from climate change and consequent increase of the occurrence of natural hazards as well as from air pollution and the related degradation of surfaces of historical buildings and monuments. This is relevant for central Europe in view of its rich cultural heritage and needs for an improved protection, revitalisation and valorisation of the existing heritage sites and buildings at risk.

As a starting point for exploitation, seven Interreg CE projects with direct and relevant contributions to this topic were identified and are listed at the end of this document. They address this topic from different and complementary perspectives and target different types and specific elements of heritage sites under threat and pressure, such as e.g.:

- Mitigation of impacts of climate change and natural hazards on cultural heritage sites;
- Preservation and management of historic built areas;
- Re-use, preservation and modern management of historical ruins;
- Protection and valorisation of archaeological heritage sites;
- Revitalisation of historic buildings through Public-Private Partnership schemes;
- Valorisation of abandoned historical sites by setting up cultural and creative companies;
- Protection and revitalisation of historical parks.

CHALLENGES

Central Europe has a great diversity of cultural heritage and resources in terms of historical sites, documentary heritage (e.g. archives and library collections), artefacts, traditions, cultural landscapes as well as traditional skills and knowledge. This heritage and its related resources represent important location factors, which strongly contribute to the attractiveness of central Europe's territory. The protection and valorisation of cultural heritage and resources offer powerful potentials for economic growth (including cultural and creative industries). They generate value and directly benefit citizens.

The cultural richness is, however, often not well valorised or even threatened, and related potentials are not sufficiently used due to a lack of funding and investment, insufficient management and preservation skills as well as a lack of coordination. Furthermore, external pressures due to usage conflicts, unsustainable approaches (e.g. mass tourism) and also linked to climate change are negatively impacting central Europe's cultural heritage with adverse effects on the competitiveness of regions (cf. Territorial Agenda 2020).

There is thus the need for facilitating a good balance between the preservation of cultural heritage and sustainable long-term socio-economic development of regions in order to strengthen their attractiveness and competitiveness. Emphasis needs to be given to managing conflicting usage interests and to capitalising the potential of cultural heritage assets for economic, social and cultural activities.

POLICY FRAMEWORK

The topic of cultural heritage (sites & buildings) at risk is directly related and linked to European Initiative 7 "Heritage at risk", which is part of the "10 European Initiatives" defined by the European Commission as a follow-up to the European Year of Cultural Heritage 2018. [15] In this context the EC also published a study on "Safeguarding cultural heritage from natural and man-made disasters", which shows effective ways of protecting cultural heritage at risk (through climate change, air pollutions, floods, winds etc.) and paves the way for improved cooperation. [16]

EXPECTED RESULTS

By supporting integrated approaches, transnational cooperation will help to improve capacities of public and private sector organisations, who deal with the protection and sustainable use of cultural heritage sites and buildings at risk. This will help to better coordinate the preservation and management of cultural heritage with sustainable growth. The development and implementation of strategies and policies for protecting and valorising cultural heritage sites and buildings will support a sustainable territorial development and trigger economic opportunities and employment at regional level.

The main result envisaged can be summarised as: *"Improved capacities of the public and private sector for the sustainable use of cultural heritage and resources in central Europe achieved through transnational cooperation"*.

[15] Further information on Initiative 7 - Heritage at risk available at https://ec.europa.eu/culture/content/heritage-risk_en

[16] Safeguarding cultural heritage from natural and man-made disasters, https://publications.europa.eu/en/publication-detail/-/publication/8fe9ea60-4cea-11e8-be1d-01aa75ed71a1

VII. Accessibility for peripheral and border regions to TEN-T CNC networks/nodes

This topic contributes to SO 4.1 "To improve planning and coordination of regional passenger transport systems for better connections to national and European transport networks".

THEMATIC FOCUS	The thematic focus of the fourth call in SO 4.1 is **accessibility for peripheral and border regions to TEN-T CNC networks / nodes.** This topic directly targets current challenges within the regional transport systems and their links to the transnational transport networks. This topic is relevant because in central Europe the development of these transport systems is challenged by a lack of public funds for infrastructure investment at regional level, effects of demographic change in areas with low population density or greenhouse gas emissions, etc. As a starting point for the exploitation of results, six Interreg CE projects with direct and relevant contributions to this topic were identified and are listed at the end of this document. They address this topic from different and complementary perspectives and target different types and specific elements of accessibility of peripheral and border regions, such as e.g.: > Improving mobility in rural regions which are affected by demographic change, > Focusing on better public transport in peripheral and cross-border regions, > Improving accessibility of peripheral regions across central Europe, > Improving accessibility of selected cross-border regions, > Connecting the hinterlands via sub-nodes to the TEN-T core network, > Developing shared mobility services and better integrated regional transport.
CHALLENGES	Central Europe bears a weak local, regional and transnational accessibility especially outside of agglomerations and in eastern regions. Transport systems mostly lack integration between modes of transport. Many peripheral regions, characterised by low accessibility, and a few major centres of urbanisation, are facing a low quality of public transport and are not sufficiently linked to TEN-T corridors and transport nodes. Indeed, while some regions have well developed mobility planning systems, in others relevant knowledge and capacity is missing. With respect to the development and implementation of integrated passenger transport systems and multimodality, central European regions show large disparities and a lack of transnational coordination.
POLICY FRAMEWORK	TEN-T core network corridors [17] are the backbone of EU transport policy. TEN-T policy focuses on major infrastructure projects, establishing a basis for service provision, highlighting the importance of key nodes and advancing sustainable transport solutions. Such prioritisation of primary transport networks and nodes can result in further weakening the accessibility of peripheral and border regions which is a challenge in many CE regions.
EXPECTED RESULTS	Transnational cooperation aims to reduce existing disparities of knowledge as well as to increase the planning and implementation capacity in the field of integrated passenger transport systems, in which better regional and transnational coordination between stakeholders is a key factor. Transnational cooperation can strengthen connections to TEN-T corridors and to primary, secondary and tertiary transport nodes of the TEN-T network (as defined according to "The New Trans-European Transport Network Policy Planning and implementation issues", SEC (2011) 101 final). This is particularly the case for peripheral regions. A specific focus will be put on public transport and sustainability of the connections at the regional level. Strategies, tools and pilot applications will contribute to the implementation of improved connections to the TEN-T network and transport nodes. Furthermore, the transnational development of coordinated concepts for smart regional mobility and services is expected, which will foster improved service standards and interoperability. Particular attention will be put on mobility services in the public interest. The main result envisaged can be summarised as: *"Improved and coordinated planning capacities of the public sector and related entities for regional passenger transport systems in central Europe linked to national and European transport networks achieved through transnational cooperation".*

17 Further information on TEN-T and transport policy available at https://ec.europa.eu/transport/themes/infrastructure/ten-t-guidelines/transport-policy_en.

List of Interreg CENTRAL EUROPE projects

from the first and second call that were identified as a starting point for further exploitation

SELECTED TOPIC	PROJECT ACRONYM	PROJECT TITLE	PROJECT WEBSITE
INDUSTRY 4.0/ADVANCED MANUFACTURING	3DCENTRAL	3DCentral - Catalyzing Smart Engineering and Rapid Prototyping	www.interreg-central.eu/3DCentral
	AMICE	Alliance for Advanced Manufacturing in Central Europe	www.interreg-central.eu/AMiCE
	FABLABNET	Making Central Europe more competitive by unlocking the innovation capacity of Fab Labs within an enhanced innovation ecosystem	www.interreg-central.eu/FabLabNet
	INNOPEER AVM	PEER-to-peer network of INNOvation agencies and business schools developing a novel transnational qualification programme on AdVanced Manufacturing for the needs of Central European SME	www.interreg-central.eu/InnoPeerAVM
	KETGATE	Central European SME Gateway to Key-enabling Technology	www.interreg-central.eu/KETGATE
	NUCLEI	Network of Technology Transfer Nodes for Enhanced open Innovation in the Central Europe advanced manufacturing and processing industry	www.interreg-central.eu/NUCLEI
	SYNERGY	SYnergic Networking for innovativeness Enhancement of central european actoRs focused on hiGh-tech industrY	www.interreg-central.eu/SYNERGY
	THINGS+	Introducing service innovation into product-based manufacturing companies	www.interreg-central.eu/THINGSPLUS
	TRANS³NET	Increased effectiveness of transnational knowledge and technology transfer through a cross-border cooperation network of transfer promotors	www.interreg-central.eu/TRANS3Net
SOCIAL ENTREPRENEURSHIP	ENTER-TRANSFER	Advancement of the economic and social innovation through the creation of the environment enabling business succession	www.interreg-central.eu/ENTER-transfer
	INNO-WISES	Technologies, Competences and Social Innovation for Work Integration Social Enterprises	www.interreg-central.eu/INNO-WISEs
	ROSIE	Responsible and Innovative SMEs in Central Europe	www.interreg-central.eu/ ROSIE
	SENTINEL	Advancing and strengthening Social Enterprises to maximize their impact in the economic and social sector of Central European countries	www.interreg-central.eu/SENTINEL
	SOCIAL (I) MAKERS	Growing a Transnational Smart Community of Social Innovators for the Inclusive Development of Central Europe	www.interreg-central.eu/Social(i)Makers

SELECTED TOPIC	PROJECT ACRONYM	PROJECT TITLE	PROJECT WEBSITE
ENERGY EFFICIENT RENOVATION OF PUBLIC BUILDING IN CITIES	BOOSTEE-CE	Boosting energy efficiency in Central European cities through smart energy management	www.interreg-central.eu/BOOSTEE-CE
	ECENTRAL	Energy Efficient Public Buildings in Central Europe	www.interreg-central.eu/eCentral
	ENERGY@SCHOOL	ENERGY@SCHOOL: ENERGY OPTIMIZATION AND BEHAVIUOR CHANGE INTO SCHOOLS OF CENTRAL EUROPE	www.interreg-central.eu/ENERGYATSCHOOL
	FEEDSCHOOLS	Financing Environment and Energy Efficiency development in Schools	www.interreg-central.eu/FEEDSCHOOLS
	TOGETHER	TOwards a Goal of Efficiency THrough Energy Reduction	www.interreg-central.eu/TOGETHER
LOW CARBON MOBILITY AND URBAN AIR QUALITY	AIR TRITIA	Uniform approach to the air pollution management system for functional urban areas in Tritia region	www.interreg-central.eu/AIR-TRITIA
	AWAIR	EnvironmentAl integrated, multilevel knoWledge and approaches to counteract critical AIR pollution events, improving vulnerable citizens quality of life in Central Europe Functional Urban Areas	www.interreg-central.eu/AWAIR
	LAIRA	Landside Airports Accessibility	www.interreg-central.eu/LAirA
	LOW-CARB	Capacity building for integrated low-carbon mobility planning in functional urban areas	www.interreg-central.eu/LOW-CARB
	MOVECIT	Engaging employers from public bodies in establishing sustainable mobility and mobility planning	www.interreg-central.eu/MOVECIT
	SMART COMMUTING	smart commuting	www.interreg-central.eu/SMART-COMMUTING
	SOLEZ	Smart Solutions supporting Low Emission Zones and other low-carbon mobility policies in EU cities	www.interreg-central.eu/SOLEZ
	SULPITER	Sustainable Urban Logistics PlannIng To Enhance Regional freight transport	www.interreg-central.eu/SULPITER
CLIMATE CHANGE ADAPTATION AND RISK PREVENTION	FRAMWAT	Framework for improving water balance and nutrient mitigation by applying small water retention measures	www.interreg-central.eu/FRAMWAT
	PROLINE-CE	Efficient Practices of Land Use Management Integrating Water Resources Protection and Non-structural Flood Mitigation Experiences	www.interreg-central.eu/PROLINE-CE
	RAINMAN	Integrated Heavy Rain Risk Management	www.interreg-central.eu/RAINMAN
	SUSTREE	Conservation and sustainable utilization of forest tree diversity in climate change	www.interreg-central.eu/SUSTREE

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CULTURAL HERITAGE (SITES & BUILDINGS) AT RISK	BHENEFIT	BUILT HERITAGE, ENERGY and ENVIRONMENTAL-FRIENDLY INTEGRATED TOOLS FOR THE SUSTAINABLE MANAGEMENT OF HISTORIC URBAN AREAS	www.interreg-central.eu/BhENEFIT
	FORGET HERITAGE	Innovative, replicable and sustainable Private Public Cooperation management models of the abandoned historical sites by setting up Cultural and Creative Industries.	www.interreg-central.eu/Forgetheritage
	HICAPS	HIstorical CAstle ParkS	www.interreg-central.eu/HICAPS
	PROTECHT2SAVE	Risk assessment and sustainable protection of Cultural Heritage in changing environment	www.interreg-central.eu/ProteCHt2save
	RESTAURA	Revitalising Historic Buildings through Public-Private Partnership Schemes	www.interreg-central.eu/RESTAURA
	RUINS	Sustainable re-use, preservation and modern management of historical ruins in Central Europe - elaboration of integrated model and guidelines based on the synthesis of the best European experiences	www.interreg-central.eu/RUINS
	VIRTUALARCH	Visualize to Valorize – For a better utilisation of hidden archaeological heritage in Central Europe	www.interreg-central.eu/VirtualArch
ACCESSIBILITY FOR PERIPHERAL AND BORDER REGIONS TO TEN-T AND CNC NETWORKS / NODES	CONNECT2CE	Improved rail connections and smart mobility in Central Europe	www.interreg-central.eu/CONNECT2CE
	PHERIPHERIAL ACCESS	Transnational cooperation and partnership for better public transport in peripheral and cross-border regions	www.interreg-central.eu/Peripheral-Access
	RUMOBIL	Rural Mobility in European Regions affected by Demographic Change	www.interreg-central.eu/RUMOBIL
	SHAREPLACE	Shared mobility and Regional transport integrated PLAnning for a better connected Central Europe	www.interreg-central.eu/SHAREPLACE
	SUBNODES	Connecting the hinterland via sub-nodes to the TEN-T core network	www.interreg-central.eu/Subnodes
	TRANS-BORDER	TEN-T passenger transport connections to border regions	www.interreg-central.eu/TRANS-BORDERS