

*State of Interregional Cooperation and Collaboration in the
European Union (EU) and in Croatia*

-research paper-

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1. Development of ICC – general overview

The European Union stands out amongst world's supranational organizations as the one which has achieved the highest degree of interstate integration and policy coordination in various spheres between its member states. The EU has equally been able to establish a complex and wide-ranging network of interregional cooperation initiatives. The first steps in this direction were, quite logically, taken in continental Western Europe (Germany, France, Benelux, Italy) where the predecessors of the EU (European Coal and Steel Community, European Economic Community) themselves were established (ECSC was founded in Paris in 1951., EEC in Rome in 1957.). To a large extent, the process was in fact simultaneous, since the interregional dimension “emerged out of EU attempts to decentralize, denationalize, and *Europeanize* structural policies”.¹ Gradually, as the enlargement was progressing, the interregional cooperation was also expanded to other parts of the continent.

The European Union possesses numerous instruments to facilitate and promote interregional cooperation between its members. The most notable are the comprehensive, multi-year Interreg programmes. They were first established in 1990. and initially aimed solely at promoting cross-border cooperation (CBC). Nowadays, Interreg also finances transnational, interregional projects and recognizes outermost EU regions. In the current programme period (2021.-2027.) its portfolio includes a total of 81 programmes at different levels.² To a lesser extent, the scheme also offers certain cooperation opportunities for non-EU countries bordering one or more EU members. These countries are widely expected to join the EU sometime in the future and/or have already started the process of accession negotiations.

Since its accession in 2013., Croatia has been actively taking part in Interreg. At present, our country participates in ten different programmes within the framework of 2021.-2027. programme period. These programmes include cooperation initiatives with all our EU neighbours as well as with Bosnia and Herzegovina, Serbia and Montenegro.³

The trend of interregional cooperation in the EU seems generally positive, although it did suffer a heavy setback by the Brexit in 2020.

2. Interreg programmes - history and definition

Interreg programs, such as Interreg Europe, stand as crucial pillars within the framework of European Territorial Cooperation (ETC), fostering collaboration and policy exchanges among a diverse array of stakeholders across EU Member States. Originally conceived in 1990 as a cornerstone of cohesion policy, Interreg embarked on its journey with a humble budget of EUR 1 billion, primarily focusing on cross-border cooperation. However, the program swiftly evolved over time, expanding its horizons to encompass transnational and interregional cooperation, thereby showcasing its adaptability and responsiveness to the ever-changing needs and dynamics of European regions. At its core, the overarching objective of Interreg programs remains steadfast: to promote cohesion and prosperity by facilitating the establishment of networks among regions, thus enabling the seamless exchange of knowledge, expertise, and best practices. Initiatives such as Interreg Europe epitomize this mission by striving to enhance

¹ Scott, 2017.

² <https://interreg.eu/about-interreg/> (accessed 18. 3. 2024.)

³ <https://interreg.eu/croatia/> (accessed 18. 3. 2024.)

cooperation governance, bolster the institutional capacity of public authorities, and refine policymaking processes at the regional level. Through its tripartite structure—cross-border (Interreg A), transnational (Interreg B), and interregional (Interreg C)—Interreg programs serve as catalysts for advancing the Union's development agenda and driving sustainable growth across Europe.

During the Interreg V period, spanning from 2014 to 2020, the European Cohesion Policy underwent a comprehensive redesign to better align with the overarching objectives delineated in Europe 2020. This restructuring was geared towards enhancing the overall impact and ensuring a more efficient utilization of investments. Central to this reform were key principles such as concentration, which entailed channelling resources towards specific areas to maximize effectiveness, simplification to streamline administrative processes and facilitate smoother implementation, and a results-oriented approach aimed at achieving tangible outcomes. Interreg V was meticulously structured around 11 investment priorities outlined in the European Regional Development Fund (ERDF) Regulation. These priorities were meticulously designed to contribute directly to the overarching goals of the Europe 2020 strategy, which emphasized the pursuit of smart, sustainable, and inclusive growth across the European Union. Notably, each cooperation program within the Interreg framework was mandated to allocate a significant portion of its budget, at least 80%, towards addressing a maximum of four thematic objectives among the eleven EU priorities. These thematic objectives spanned a wide array of critical areas including research and innovation to foster technological advancement, boosting the competitiveness of small and medium-sized enterprises (SMEs), combating climate change through sustainable practices, enhancing transportation infrastructure for a greener future, promoting social inclusion, and fostering better public administration for efficient governance. Through this targeted allocation of resources, Interreg V aimed to maximize its impact and contribute significantly towards achieving the ambitious objectives outlined in the Europe 2020 strategy.

2. 1. Interreg Europe

Interreg Europe allocates significant funding (more than EUR 470 Million, with 379 Million EU funding) to support regional development policies and capacity-building efforts, including Structural Funds programs. The program covers a wide range of regional development issues, focusing on policy areas deemed most relevant and urgent for European regions, such as promoting smarter, greener, and more social initiatives, including support for labour markets, healthcare, culture, and sustainable tourism.

Interreg Europe operates through two main approaches:

1. Supporting interregional cooperation projects: This involves bringing together regional policy actors to address regional challenges through capacity-building, knowledge transfer, and the exchange of good practices and innovative approaches. The aim is to integrate lessons learned from cooperation into regional policies and actions effectively.
2. Facilitating policy learning services: Interreg Europe provides ongoing support for policy learning and the capitalization of good regional policy practices. This approach, aligned with the policy learning platform concept, enables actors at the regional level across the EU to access relevant experiences and practices to strengthen their policies whenever needed.

Overall, Interreg serves as a vital mechanism for promoting collaboration, knowledge-sharing, and capacity-building among European regions to foster sustainable development and address common challenges.

2. 2. Interreg Interact

Interreg Interact aims to enhance the effectiveness of cohesion policy by facilitating the exchange of experiences, innovative approaches, and capacity building among the 27 EU Member States and participating countries like Norway and Switzerland. It focuses on harmonizing and simplifying the implementation of Interreg Programmes, cooperation actions, and the use of European groupings for territorial cooperation. Acting as a central hub for nearly 100 Interreg programs, Interact strives to streamline cooperation processes, increase efficiency, enable individuals to work effectively within cooperation programs, and boost the visibility of Interreg initiatives. With a budget exceeding EUR 56 million (EUR 45 million from EU funding), Interact's objectives for 2021-2027 include strengthening management capacities, facilitating cooperation, and enhancing program visibility.

2. 3. Interreg ESPON

Interreg ESPON aims to provide evidence, data, and advice to support policymakers at all levels in addressing key territorial challenges within the EU policy framework. With a budget of EUR 60 million (EUR 48 million from EU funding), it covers all 27 EU Member States, along with Iceland, Liechtenstein, Norway, and Switzerland. ESPON's research and activities focus on enhancing the resilience and recovery of EU territories, particularly through achieving a green transition to climate-neutral economies and ensuring just living conditions everywhere. It contributes to cohesion policy effectiveness by providing relevant evidence and knowledge, supporting processes like the European Green Deal, Just Transition and Recovery, and the implementation of the Territorial Agenda 2030. ESPON supports these efforts through various means such as policy briefs, territorial evidence reports, monitoring tools, and thematic action plans aligned with EU Cohesion Policy objectives. Its research areas include living, working, and traveling across borders, governance of new geographies, smart connectivity, resilient places to crises, European territories in global interactions, perspectives for all people and places, and climate-neutral territories.

2. 4. Interreg URBACT IV

Interreg URBACT IV aims to support cities in implementing solutions to address green, just, and digital transitions through collaboration, capacity building, and expertise. It promotes integrated sustainable development in cities, enhances city policies, and improves the effectiveness of Cohesion policy in urban areas. The program covers EU Member States, Norway, Switzerland, and select countries under the Instrument for Pre-Accession (IPA). It is open to cities of all sizes, with a focus on supporting those benefiting from Cohesion policy. With a total budget of EUR 102 million (EUR 84 million from EU funding), URBACT will emphasize complementary coordination with the European Urban Initiative, increased focus on small and medium-sized cities, and stronger emphasis on green, digital, and governance priorities, including gender equality. The program aims to increase cities' capacities to develop and implement sustainable urban development strategies through integrated and participative approaches, as well as improve their access to funding sources, particularly from Cohesion policy.

2.5. Interreg programmes important for the Blue Economy in Croatia

Interreg Italy-Croatia

The Interreg VI Italy-Croatia Programme for 2021-2027, as established by Commission Implementing Decision (EU) 2022/75, focuses on regions along the Adriatic Sea in Italy and Croatia. This program represents the second programming period following Croatia's entry into the EU in 2013, which initiated the first cycle from 2014 to 2020, funding nearly one hundred projects. The cooperation area encompasses various landscapes such as coastal, urban, and natural environments, characterized by blue and green themes reflecting the sea basin and green spaces. The Adriatic Sea's central location within the region, despite being shared with other countries, presents both challenges and opportunities for cross-border collaboration in economic, educational, and labor markets. It serves as an economic and environmental asset, fostering cooperation based on longstanding trade connections and shared cultural heritage. The program's objectives for 2021-2027, supported by EUR 178 million from EU resources per Commission Implementing Decision (EU) 2022/74, include promoting innovation, smart specialization, climate change adaptation, biodiversity protection, pollution reduction, mobility across various levels, sustainable tourism, and enhancing cooperation governance.

Interreg Adrion

The ADRION program is a European transnational initiative focused on investing in regional innovation systems, cultural and natural heritage, environmental resilience, sustainable transport and mobility, and capacity building. With eight Partner States coming together, ADRION acts as a policy driver and governance innovator for over 70 million people in the Adriatic and Ionian region. It includes ten countries from both the EU and non-EU areas, providing financial support to public authorities, research institutions, NGOs, and private companies for transnational partnerships. In the 2021-2027 programming period, IPA ADRION has a total budget of 160,810 million euros, with Interreg funds amounting to approximately 136,700 million euros, showcasing a strong sustainable approach with a significant focus on green policies and future project resources. The program's thematic priorities encompass supporting a smarter region by enhancing research, innovation, and entrepreneurial skills; promoting a greener and climate-resilient region by addressing climate change adaptation, circular economy transitions, nature protection, and sustainable urban mobility; facilitating a carbon-neutral and well-connected region through sustainable mobility development; and supporting the governance of the Adriatic-Ionian region.

Interreg Euro-Med

The Interreg Euro-MED Programme fosters collaboration across Mediterranean borders, providing funding for projects initiated by public administrations, universities, private entities, and civil society organizations. With partners from 69 regions across 14 countries on the Northern shore of the Mediterranean, the program's collective goal is to create a climate-neutral and resilient society for the region's inhabitants. Over the next seven years, these partners will collaborate to advance the region's intelligence, environmental sustainability, and governance among stakeholders. The program's total budget for the 2021-2027 period is approximately 294

million euros. The Interreg Euro-MED Programme focuses on four complementary missions aimed at addressing global challenges through collaborative solutions: strengthening an innovative and sustainable economy, protecting and enhancing the natural environment and heritage, promoting green living areas, and enhancing sustainable tourism. These missions integrate various thematic issues and initiatives to achieve objectives that individual projects might not attain independently.

3. ICC- benefits, problems and solutions

3. 1. Benefits of ICC

Benefits of Interregional Cooperation/Collaboration are numerous. First and foremost, it enhances European integration, giving it a non-national dimension. In this sense, the development of ICC has already resulted in “creation of highly networked European Union that is more complex than a political community of sovereign states”.⁴ Such *interregional EU* enables its citizens, among other things, to experience concrete benefits of national EU membership at their local level and in everyday life, through the implementation of various projects in line with the specific needs of local communities. Given that the EU has at times been accused of excessive bureaucracy and its institutions described as somewhat distant from the concrete needs of the population, this aspect of ICC seems increasingly relevant.

In addition, interregional cooperation is regarded as one of the important tools for overcoming the development gap existing between EU regions due to a variety of reasons. This is highly applicable to Croatia and its regions, given the status of our country as the most recent EU member. ICC can facilitate our access to research expertise, new markets and tech opportunities. Through policy learning, project-implementation can be improved, thus contributing to solving socio-economic hardships and boosting overall economic development.⁵ Nonetheless, involvement in ICC also confronts lagging regions with several specific challenges which should be taken in due consideration before/upon engaging in such partnership arrangements.

Finally, ICC has an essential role to play in the implementation of the EU’s Smart Specialization Strategy (S3). It has been noted that the projects featuring interregional exchanges between clusters and innovation hubs are becoming increasingly dominant in this sphere and no regional innovation system can be considered in isolation⁶ if it is to achieve a broader impact.

3. 2. Challenges of ICC

Interregional collaboration encounters numerous barriers and challenges that impede its effectiveness and success. These obstacles range from a lack of trust and mismatched objectives among potential partners to differences in policy competence, research capabilities, and regional autonomy. Socio-cultural disparities, legal hurdles, and institutional inertia further complicate collaborative efforts. Additionally, limited commitment from national stakeholders, insufficient engagement of regional actors, resource constraints, and the absence of collaborative links with foreign entities pose significant challenges. Moreover, a mindset that

⁴ Scott, 2017.

⁵ Woolford et al., 2021.

⁶ Ibid.

perceives actors in lagging regions as inferior exacerbates the issue. The OECD (Organisation for Economic Co-operation and Development) identifies three main categories of challenges: framework conditions, innovation systems, and governance and policy context. Addressing these multifaceted challenges is crucial to fostering an environment conducive to effective interregional collaboration, thereby unlocking its potential for regional development and innovation across the European Union.

The governance challenge within interregional collaboration presents several hurdles, including limited coordination among regions and between national and regional levels, resulting in a lack of shared understanding. Unclear responsibilities between national and regional levels, varying degrees of regional autonomy across countries, and insufficient human capital further compound the issue, hindering effective management of international collaboration efforts. The 'capitalisation' challenge adds another layer of complexity, marked by insufficient engagement of regional stakeholders, a lack of common understanding with local research actors, and weak links between the business and research communities. Additionally, the absence of absorptive capacity impedes the ability of regional actors to effectively gain and retain knowledge from collaboration, hindering internal capacity development. Lastly, the 'budgeting' challenge underscores the limitations posed by scarce financial and human resources, as well as the lack of synergies between national and European funds or among different European funding sources, further straining interregional collaboration endeavours. Addressing these governance, capitalisation, and budgeting challenges is essential to fostering effective collaboration and maximizing the potential benefits of interregional cooperation initiatives.

3.2.1. Framework conditions

Despite geographical proximity, the European Commission's Cross Border Review (2015) identified three main categories of legal and administrative obstacles to collaboration. These include the absence of EU legislation in certain policy fields, incoherent or inconsistent domestic laws within EU Member States where only partial EU competence exists, and inadequate procedural and behavioural aspects at local, regional, or national levels. The inventory of over 200 obstacles primarily stems from diverging national legislations on either side of the border, incompatible administrative processes, or the lack of common territorial planning. For instance, Spain and Portugal maintain different national systems for environment and water management, as well as for the recognition of professional qualifications. On the Greece-Bulgaria border, cooperation faces hindrances such as transport bottlenecks and complex business regulations. Even seemingly minor factors like linguistic differences can impede the ability of regional actors to engage in collaboration and derive knowledge from it.

3.2.2. Innovation System

Certain scholars point out additional obstacles faced by regions with increased levels of Foreign Direct Investment (FDI), particularly lagging regions. They highlight the challenge of low interaction between domestic actors and local subsidiaries of Multinational Enterprises (MNEs) or Global Value Chain (GVC) subcontractors, leading to divergent perceptions of collaboration opportunities between domestic actors and MNEs.⁷ Promoting systematic interaction with foreign actors and encouraging them to consider new collaboration options poses a major challenge for the internationalization of smart specialization. Another barrier is the weak or non-existent links between the business and academic research communities. Institutionalizing and implementing the Entrepreneurial Discovery Process (EDP) on a systematic basis is essential to

⁷ Radosevic, Ciampi Stancova, 2015.

bridging this gap. However, others note that the current focus of the EDP on technological prioritization may not yield significant benefits in terms of science-industry collaboration or influencing policymaking.⁸ This underscores the need for a more holistic approach that addresses challenges, local capabilities, and regional potential to maximize the benefits of participation in the EDP. Furthermore, a lack of collaborative links and common understanding among local and national policy actors, limited research capacities, outdated research infrastructure, and a lack of absorptive capacity can hinder regional actors' ability to gain knowledge from collaboration and develop internal capacities. Ultimately, the mindset of those involved plays a crucial role in identifying actual assets and strengths and creating a level playing field for all parties. Participants from lagging regions may be locked into low-cost production models, inhibiting innovation and value addition to their products/services. Therefore, fostering a mindset shift is vital to encourage engagement in interregional collaboration and leverage competitive advantages beyond cheap products or labour.

3.2.3. Governance and policy context

Differences in territorial regulations and varying degrees of decentralization within countries present challenges for collaboration, leading to an imbalance between partners. Regions with high autonomy, like Spanish or Italian regions, may struggle to collaborate effectively with those more dependent on centrally managed policies, such as Greek or Romanian regions. Disparities in policy cycles, budget processes, and project reporting further hinder joint actions' implementation. Aligning national or regional features in joint action design and implementation poses a challenge, even among regions with similar institutional contexts, due to differing rules and regulations. Incompatibilities across regions/countries can cause delays or cancellations of activities/projects. Despite fifteen years since the launch of ERA-NETs, duplications in application and reporting procedures persist among participating Member States, while different schedules of national programs and policy cycles remain obstacles to smooth partnership workings. Human factors also play a crucial role, as access to relevant policymakers and decision-makers across different government levels can be challenging. Intermediary organizations, such as technology parks and innovation clusters, play a vital role in facilitating collaboration by linking knowledge producers to users. However, relational and institutional inertia, exacerbated by a lack of political commitment, pose additional barriers. Many regions rely on existing projects and networks rather than seeking new partnerships based on identified priorities. Moreover, administrative rules and procedures for European Structural and Investment Funds (ESIF) and Horizon 2020 are not always compatible, hindering interregional collaboration. Despite challenges, integrating interregional collaboration into mainstream operational programs indicates increased willingness to use ESIF outside the eligible territory or to make joint investments aligned with other countries/regions. Policy capability in terms of design and management skills is crucial for interregional collaboration, necessitating an analysis of local strengths and weaknesses to identify collaboration opportunities. Regional authorities must establish effective communication and collaboration with other regions and local stakeholders to foster participation in interregional cooperation opportunities and develop links with European networks. Awareness-raising and skill development in local organizations may also be necessary to overcome barriers to interregional collaboration effectively.

⁸ Kroll, 2017.

4. Blue Economy in a nutshell – definition, sectors distinction

The term *Blue Economy* first emerged at the United Nations Conference on Sustainable Development held in Rio de Janeiro (RIO+20) in 2012.⁹ In the past 12 years, several international organisations (e. g. the UN, the World Bank...) have aimed to properly define it. However, no consensus has been reached or unified definition adopted.

For the purposes of this article, we will use the one proposed by the European Commission, which defines the Blue Economy as “all economic activities related to oceans, seas and coasts. It covers a wide range of interlinked established and emerging sectors”.¹⁰ The established or traditional sectors are Fisheries and Aquaculture, Shipping and Maritime Transportation, Port Services and Infrastructure, Tourism and Recreation, Shipbuilding and Marine Equipment Manufacturing, Coastal Infrastructure and Construction and Offshore Oil and Gas Exploration and Production. The emerging sectors are Renewable Energy, Marine Biotechnology and Bioresources, Marine Mining and Minerals, Marine Research and Technology, Blue Carbon and Coastal Ecosystem Services, Marine-based Sustainable Agriculture and Maritime Security and Surveillance.

Blue (Marine) Biotechnologies are such technologies which are used for biotechnological exploitation of marine organisms and resources, including the development of bioactive compounds, enzymes, and biomaterials for pharmaceutical, nutraceutical, cosmetic, and biotechnological applications.

Finally, Marine (Blue) Technologies include Aquaculture Technologies, Ocean Observation and Monitoring Technologies, Renewable Energy Technologies, Desalination Technologies, Marine Robotics, Marine Spatial Planning (MSP) Technologies, Coastal and Marine Engineering Technologies, Marine Pollution Monitoring and Remediation Technologies, Blue Carbon Monitoring and Conservation Technologies, Fisheries Management and Tracking Technologies and Underwater Communication and Navigation Technologies.

4. 1. Importance of ICC in Blue Economy

As regards the Blue Economy, it is a concept which almost inherently stresses the need for interregional cooperation/collaboration. The reason is obvious – rarely (if ever) do maritime spaces belong to only one national jurisdiction. In order to efficiently use the ample opportunities they offer and achieve shared benefits, some form of cooperation between relevant littoral states is desirable. To this end, cooperation frameworks have been established across the 6 sea basins surrounding the European continent. These will be addressed in greater detail further on.

4. 2. Blue Economy ICC frameworks in Europe, best practices

As mentioned earlier, cooperation frameworks involving both EU and non-EU countries have been established in six European sea basins. Specifically, in the Atlantic Ocean (Atlantic Strategy), Black Sea (Common Maritime Agenda for the Black Sea), Adriatic-Ionian Seas (EUSAIR), Baltic Sea (EUSBSR), Western Mediterranean (WEST MED Strategy) and the North Sea (NSR 2030

⁹ Smith-Godfrey, 2016.

¹⁰https://www.un.org/regularprocess/sites/www.un.org.regularprocess/files/rok_part_2.pdf (accessed 19. 3. 2024.)

Strategy). The involvement of the EU institutions in these frameworks is varying. Their involvement is the greatest in the EUSAIR and the EUSBSR, while they are fully absent from NSR 2030.¹¹

The French region of Bretagne is probably the most comprehensive example of remarkable successes that Blue Economy can achieve on both regional and interregional level, if developed and implemented correctly in the right environment. Today, this region hosts a large regional marine competitiveness cluster (Pôle Mer Bretagne Atlantique), 4 technology transfer and innovation centres, 3 marine-biology stations, 50% of national oceanographic research network, as well as a vast network of related European research infrastructure (e. g. Euro Argo, EMBRC, Euro Fleet, EMSO...) and over 300 innovative companies. Additionally, Bretagne is a member of a rather limited network of only 26 European Regions Using Space Technologies (NEREUS) for research purposes.¹² ICC in Blue Economy is also remarkably developed in Germany's Schleswig Holstein. Prior to the Brexit, Scotland featured prominently in this sphere as well. Innovative approaches and projects are being implemented in the Baltic Sea region (e. g. EUSBSR Governance Flagships, EEIG Submariner Network for Blue Growth). As part of Interreg Mediterranean, innovative Blue Economy alliances and communities have been established (BLUE BIO MED, B-BLUE).¹³

4. 3. Blue Economy ICC frameworks in Croatia

In Croatia, ICC in Blue Economy is developed in the framework of the EUSAIR (Adriatic) Strategy and Interreg programmes (Interreg VI Italy-Croatia 2021.-2027.). With a total budget amounting to 222,7 million € and 33 regions (provinces/counties) participating, there are currently 21 projects in the phase of implementation, covering areas such as green and resilient shared environment (4), culture and tourism for sustainable development (4) as well as integrated governance (13).¹⁴ Previously, Interreg Italy-Croatia Programme 2014.-2020. has been successfully implemented.

4. 4. Challenges to ICC in Blue Economy across Europe

The level of development of Blue Economy varies significantly across the European sea basins. One can conclude that the highest degree of interaction and integration in this sphere has been achieved in the Atlantic Ocean basin. Yet, certain challenges remain. The experts in Bretagne have, for instance, pointed out to the need of overcoming regulatory barriers and achieving greater openness of European scientific infrastructure establishments, particularly towards SMEs.¹⁵ The environment for interregional cooperation has become particularly unfavourable in the Black Sea, due to a sharp degradation of security situation there since 2022. Significant challenges are also present in the Mediterranean. Due to security risks arising from irregular migration flows, the EU has sought to establish cooperation links with certain North African littoral states (Algeria, Libya, Mauritania, Morocco and Tunisia participate in WEST MED Initiative), but their full-scale involvement in interregional cooperation is constrained by numerous factors (adaptation difficulties, institutional and developmental gap, local economic conditions).

¹¹<https://blueair.adrioninterreg.eu/wp-content/uploads/2021/11/Technology-Park-Ljubljana.pdf> (accessed 19. 3. 2024.)

¹²https://s3platform.jrc.ec.europa.eu/documents/20125/267855/AnnieAUDIC_S3%20blue%20growth_v_F.pdf/ba60310d-be5a-b482-d8d7-7907574ed34d?version=1.1&t=1619521972878 (accessed 19. 3. 2024.)

¹³ See note 11

¹⁴ <https://www.italy-croatia.eu/web/italy-croatia> (accessed 19. 3. 2024.)

¹⁵ See note 12

4. 5. Challenges to ICC in Blue Economy in Adriatic – Ionian region (Adriatic) and in Croatia

The Adriatic-Ionian region is the fastest growing European sea basin region, with very promising Blue Economy development prospects as part of ICC. In order to fully use its significant potential, experts have stressed the need for improvement in collaboration among R&D players (such as universities and SMEs), diversification of financing instruments beyond Interreg programmes (e. g. ERDF, Horizon Europe), broader use of interregional innovation-boosting tools (EyeRIS3, participation in S3 Thematic Partnerships) and widening the range of Blue Growth priority sectors included in S3 (beyond Aquaculture and Fisheries) through projects like BlueAir.¹⁶

Croatia, with its long coastline and numerous economically vibrant littoral communities, has all the necessary preconditions for the development of Blue Economy through ICC. Significant results have already been achieved in this sphere, as evidenced by the successful conclusion of Interreg Italy-Croatia 2014.-2020. Programme as well as the ongoing active implementation of Interreg VI Italy-Croatia 2021.-2027. Programme. Challenges to be addressed at the national level (so as to further enhance the participation of our country in ICC) include upgrading and expanding the existing regulatory framework concerning maritime spaces in general and Blue Economy in particular, adopting more sustainable approaches to coastal tourism and fisheries, addressing depopulation of the islands, the rise of sea levels etc.¹⁷ The national Smart Specialization Strategy (S3) through 2029.¹⁸ (published in November 2023.) makes no separate reference to Blue Economy. Similarly, as of 2022, several strategic documents separately regulating some of its sectors (e.g. Tourism Development Strategy) were either outdated or in the process of publishing. Furthermore, no specific strategy or policy framework is currently in place concerning the development of Blue Economy as a whole. It has been suggested that maritime spatial planning could be a useful tool for boosting Blue Economy development.¹⁹

5. Solution-providers

Interregional collaboration is inherently complex, bringing together stakeholders from different regions, industries, and organizational backgrounds, each with their unique needs, priorities, and capabilities. In such a dynamic environment, the one-size-fits-all approach often falls short, necessitating a more nuanced and adaptable approach to support collaborations effectively.

DIHs are designed with flexibility and customization at their core, allowing them to cater to the specific requirements and challenges faced by diverse stakeholders participating in interregional collaboration efforts. Whether it's a rural community seeking to enhance its agricultural practices or a metropolitan area aiming to bolster its digital infrastructure, DIHs can tailor their services to address the unique needs of each region, industry, or organization involved. This adaptability enables DIHs to offer a wide range of services and support mechanisms that are finely tuned to the context and objectives of the collaborative initiative at hand. For instance, a DIH might provide specialized training programs for small businesses in a particular sector, offer access to state-of-the-art testing facilities for innovative startups, or facilitate matchmaking between research

¹⁶ See note 11

¹⁷ <https://thedocs.worldbank.org/en/doc/c58f2898b2633ab3d1a84deab8839a55-0080012022/original/Status-of-Blue-Economy-in-Croatia-ENG.pdf> (accessed 20. 3. 2024.)

¹⁸ <https://mingor.gov.hr/UserDocsImages/slike/Vijesti/2022/S3%20do%202029%20Tekst%20VRH%2023%2012%2013.pdf> (accessed 20. 3. 2024.)

¹⁹ See note 17

institutions and industry partners to foster technology transfer and innovation. DIHs can also leverage their extensive networks and partnerships to tap into a diverse pool of expertise, resources, and funding opportunities that can further enhance the effectiveness and impact of collaborative projects. By connecting stakeholders with the right resources and support mechanisms, DIHs play a crucial role in overcoming barriers and facilitating meaningful cooperation between regions, industries, and organizations.

Interregional collaboration thrives on the principle of knowledge exchange, as it forms the bedrock for innovation, growth, and sustainable development across diverse regions. Digital Innovation Hubs (DIHs) emerge as pivotal facilitators in this process, functioning as dynamic knowledge-sharing platforms that catalyse learning and capacity building among participants. These hubs orchestrate a myriad of initiatives, including workshops, seminars, and training programs, meticulously designed to foster an environment conducive to continuous learning and skill development. Through these organized events and programs, DIHs create opportunities for stakeholders to engage in meaningful dialogue, share insights, and exchange best practices garnered from their respective domains. Whether it's a session on the latest technological advancements or a workshop on emerging trends in specific industries, DIHs provide a platform for participants to stay on top of cutting-edge developments and explore innovative solutions to common challenges. Moreover, DIHs play a proactive role in promoting the adoption of new technologies and innovative practices, thereby empowering regions to overcome existing obstacles and capitalize on emerging opportunities. By offering hands-on training, technical assistance, and access to state-of-the-art facilities, DIHs equip participants with the tools and knowledge necessary to navigate the complexities of the digital landscape with confidence and competence. DIHs in essence serve as incubators of innovation, fostering an ecosystem where experimentation and creativity are encouraged. Through collaborative projects, hackathons, and innovation challenges, participants are encouraged to explore new ideas, test novel solutions, and push the boundaries of conventional thinking. This culture of innovation not only fuels individual growth but also cultivates a spirit of collective advancement, driving progress and prosperity across regions.

DIHs serve as intermediaries, bridging the gap between supply and demand by facilitating matchmaking between stakeholders with complementary needs, resources, and expertise. Through strategic networking events, matchmaking sessions, and collaboration platforms, DIHs create opportunities for stakeholders to connect, engage in dialogue, and explore potential areas of collaboration. By facilitating these interactions, DIHs lay the foundation for mutually beneficial partnerships that drive innovation and economic growth across regions. DIHs actively foster collaborations between regions, businesses, and research institutions by providing support and guidance throughout the partnership development process. Whether it's assisting with project planning, facilitating joint initiatives, or providing access to funding opportunities, DIHs play a hands-on role in nurturing collaborative ventures that have the potential to make a significant impact. They play a crucial role in nurturing networks of like-minded individuals and organizations, creating spaces where stakeholders can share ideas, best practices, and experiences. Through community-building initiatives, such as networking events, knowledge-sharing sessions, and collaborative projects, DIHs cultivate an environment where collaboration thrives and innovation flourishes. These connections forged by DIHs enable regions to access new markets, tap into emerging opportunities, and leverage shared resources and expertise. By fostering collaboration and facilitating partnerships, DIHs enhance the collective impact and competitiveness of participating regions, driving economic growth, and fostering innovation ecosystems that are resilient, inclusive, and sustainable in the long run.

Complementing the role of DIHs, Technology Transfer Offices (TTOs) serve as vital resources in facilitating technology transfer and commercialization, further enhancing interregional cooperation. They can have varying forms, although the most common one is an internal TTO, functioning as part of a university or a similar research institution. Beyond internal TTOs, the office can be a subsidiary (external) company fully owned by its patron institution. Universities can also opt for private service provider, a TTO/IP management consortium etc. In some cases, even government offices can serve as TTOs.²⁰

The main reason to establish a TTO is to move innovations from the lab to society and the marketplace to advance the impact of research results on people's lives. However, before a TTO can achieve self-sustainability, an average period of 8 to 10 years is required. This, in turn, means that these offices are dependent on financial support from governments in short and medium-term period.

The World Intellectual Property Organization lists several of their distinct roles, such as promotion of intellectual property (IP) awareness among the institution's staff members, management of IP disclosure, filing for IP protection, commercialization (marketing, negotiation and licensing, creation of spinouts), maintenance of IP assets, enforcement of intellectual property rights (IPRs), management of revenue sharing as well as potential conflicts of interest and commitments.²¹ More generally, TTOs bridge the gap between academia and industry by facilitating the transfer of research findings and innovative technologies into practical applications and commercial products. They also provide support in intellectual property protection, licensing agreements, spin-off company creation, and industry partnerships, fostering innovation-driven entrepreneurship and regional economic development.

By facilitating knowledge exchange, collaboration, and technology commercialization across regions, TTOs contribute significantly to overcoming barriers such as limited research capacities, outdated infrastructure, and a lack of absorptive capacity. In this sense, they carry out certain distinctly customer-oriented roles (management of consultancy services offered by their home institution, marketing of short courses and related capacity building programs, promoting laboratory services, management of contract research and other similar income-generating activities as needed). Through synergistic collaboration between DIHs and TTOs, regions can leverage their combined expertise and resources to promote interregional cooperation, accelerate digital transformation, and drive sustainable innovation ecosystems.

Since TTOs are entrusted with rather specific roles, specially trained workforce is also needed to ensure their smooth operation. This workforce is divided into two separate groups - research staff (inventors) and the technology transfer professionals (TTPs), each with its own roles.

Inventors are key actors in both the creation of new knowledge and its dissemination within and outside university boundaries. In the TT process, they generate ideas which provide the basis for the commercial opportunity, disclose inventions with societal or commercial potential to the TTO, provide technical evaluation of previous patents and publications in their field, assist the TTO in seeking protection (e.g. patent) before publishing the results of research, assist patent attorneys with writing the patent and responding to detailed examination report objections, tap in their networks and help raise money, engage with potential licensees, investors, and other partners, discuss technical aspects with interested companies and support further development

²⁰ <https://www.wipo.int/technology-transfer/en/organizations.html> (accessed 3. 4. 2024.)

²¹ Ibid.

of the inventions (e.g. as a consultant to a licensee or as chief scientific officer or founder of a spinout).

On the other hand, TTPs play an important role in bringing the knowledge and technologies to society. They are employed in a wide range of roles and carry out relevant functions in the ample spectrum of TTO-related establishments: Research Support Offices, University-Business engagement offices, Impact offices, etc. Experienced TTPs have an understanding of both academia and industry, enabling them to set up agreements that meet the needs of the institution, the researchers, industry and society. During the technology transfer process, tech transfer professionals use their IP knowledge to deal with patent attorneys, their sales skills to find business connections, their industry knowledge to manage the agreements, their people skills to communicate with the researchers and their flexibility to meet the needs of all parties.²² In general, technology transfer is a relatively recent and a highly innovative process. Often it requires non-standard approaches to solving the arising issues. Specialists employed in TTOs consequently face several rather specific challenges. These can be solved by using a whole set of wide-ranging incentives.²³ The main goal is to enable the inventors to bring their research results to the market (where they can be applied) and TTPs to attract and retain exceptional talents within the TTOs, thus contributing to their competitiveness in the long run.

In summary, the collaboration between Digital Innovation Hubs (DIHs) and Technology Transfer Offices (TTOs) plays a pivotal role in fostering interregional cooperation and driving innovation-led development. DIHs, known for their adaptable approach, provide tailored support to diverse stakeholders, forging meaningful partnerships and bridging gaps. Meanwhile, TTOs serve as crucial bridges between academia and industry, facilitating the transfer of research breakthroughs into tangible products and solutions. Together, these entities synergize to accelerate digital transformation, support sustainable innovation, and boost regional economic growth. By overcoming barriers and facilitating seamless technology transfer, DIHs and TTOs contribute to long-term competitiveness and prosperity across regions. Their collective efforts shape a future marked by resilience, inclusivity, and sustainable development.

²²<https://www.wipo.int/technology-transfer/en/human-capital.html> (accessed 3. 4. 2024.)

²³ for a detailed analysis of the incentives, see World Intellectual Property Organization (WIPO) (2024). *Incentives in Technology Transfer: A guide to encourage, recognize and reward researchers and professionals* - <https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2002-en-incentives-in-technology-transfer.pdf>

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