

The EcoCore Project

Green Transition in Small Cities along Transport Corridors

INTEGRATED

ACTION

PLAN

URBAN AREA OF

DUBROVNIK



URBACT



Co-funded by
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1. INTRODUCTION

The Dubrovnik Development Agency, as part of the EcoCore project, is collaborating with local stakeholders in Dubrovnik urban area to tackle the challenges of transitioning to a green and sustainable economy. Through the exchange of knowledge and best practices, along with active involvement from the community, the project aims to develop an integrated action plan. This plan will identify opportunities and outline concrete activities for establishing a green business zone, paving the way for Dubrovnik to embrace a green and sustainable economic future.

As Croatia's premier tourist destination, Dubrovnik has long been the economic engine of the country's south, with tourism accounting for a dominant share of local GDP. However, recognizing the vulnerabilities of overreliance on seasonal tourism, the city is now implementing a bold, integrated action plan to fundamentally transform its urban development model and economic structure.

This comprehensive initiative addresses multiple interconnected challenges through a holistic approach to sustainable urban regeneration. At its core, the plan seeks to break the monoculture of tourism by developing alternative economic pillars in technology, green industries, and education. The transformation begins with the strategic redevelopment of underutilized entrepreneurial zones, where outdated industrial areas will be converted into vibrant, eco-friendly business districts. These modernized zones will incorporate cutting-edge green infrastructure including energy-efficient buildings, smart water management systems, renewable energy installations, and circular waste solutions, serving as showcases of sustainable urban development.

A critical component of the plan involves revolutionizing Dubrovnik's mobility infrastructure to better connect these revitalized business hubs with the city center and surrounding areas. The transportation strategy combines electrification of public transit with complete street redesigns that prioritize pedestrians, cyclists, and micro-mobility options. This multimodal approach will simultaneously reduce congestion and emissions while improving access to economic opportunities.

The human capital dimension of the plan represents an equally ambitious transformation. Through deep partnerships with the University of Dubrovnik and vocational training centers, the city is realigning its education system with the needs of a diversified economy. New programs in green technologies, digital skills, and sustainable design will equip local residents - particularly youth - with future-proof career options. Special retention incentives aim to reverse brain drain by keeping this newly trained workforce in the community.

What makes this initiative truly innovative is its integrated approach to solving multiple urban challenges simultaneously. Environmental sustainability drives economic diversification, which in turn creates more year-round employment, while improved urban design enhances quality of life for residents. The circular economy principles embedded throughout the plan ensure that economic growth aligns with rather than contradicts ecological limits.

As Dubrovnik implements this vision, it serves as a model for other tourism-dependent Mediterranean cities seeking to future-proof their economies against climate change and market fluctuations. The plan's success will be measured not just in economic indicators, but in improved social equity, environmental resilience, and the creation of a more balanced, sustainable urban ecosystem that benefits all citizens.

EcoCore is a network of nine small European cities, all located in strategic transport corridors that want to accelerate the green transition in the industrial areas of their cities. Led by Fingal County Council, Dublin the consortium also includes Dubrovnik, Ormož, Alba Iulia, Këkava, Santo Tirso, Pärnu Linnavalitsus, Villena and Tuusula.

The aim of the project is to build the capacity of small cities to address climate change by pursuing a green economy agenda, helping local stakeholders, to transition to low-carbon economic activities, especially in

their choices of energy for transportation, heating and electricity. EcoCore will create significant momentum for a green transition, especially in the industrial areas of partner cities. The main focus of this Integrated Action Plan (IAP) is green transition in industrial urban and peri-urban spaces. The green industrial transition refers to a worldwide movement towards more sustainable and eco-friendly industrial practices. It aims to move away from traditional resource-heavy and polluting industrial processes to cleaner and more sustainable, efficient and smart alternatives. It also involves a shift in consumer behavior towards more sustainable products and services. The ultimate objective is to decrease greenhouse gas emissions, address climate change, limit environmental damage, and encourage the efficient utilization of resources. The goal is to create a more sustainable economy that benefits both people and the planet. How cities benefit from and encourage this transition depends greatly on the role they play. Some cities will take a relatively passive, ad hoc or reactionary role. Others will proactively become key strategic players in shaping how this transition interacts with and impacts the wider urban and peri-urban landscape – socially, economically and environmentally.



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2. CURRENT SITUATION

2.1. Location, teritorial context

The population of the Urban Area of Dubrovnik is 60,510. This functional urban area includes the City of Dubrovnik and the municipalities of Dubrovačko Primorje, Konavle, and Župa Dubrovačka, incorporating 102 settlements.

The old city of Dubrovnik has been on UNESCO's List of World Cultural Heritage since 1979. Tourism in the Dubrovnik-Neretva County contributed 3.2% to Croatia's GDP in 2019. The average rate of registered unemployment in Dubrovnik-Neretva County is 8.9%. The range of maximum and minimum unemployment has been large for years due to significant seasonal employment and fixed-term work for the sake of tourism, which in the city of Dubrovnik is mainly based on the summer months.

The urban area of Dubrovnik belongs to the Southern Croatian coast. The geographical position of the urban area of Dubrovnik is determined by natural boundaries and state borders: with Bosnia and Herzegovina to the east and partially to the north near Neum, with Montenegro to the south. To the west, the urban area also includes a group of islands - the Elaphiti Islands. The natural boundary to the northwest is formed by the Bay of Mali Ston and Cape Oštro to the southeast, with the area following the direction of the Dinaric Mountains. The Southern Dalmatian area is evident in its coastal and island parts, due to its narrow extension along the southernmost mountain ridges of the Dinaric Alps in Croatia, along the border with Bosnia and Herzegovina, characterized by the lack of a deeper inland belt.

Dubrovnik is geographically isolated owing to its extreme southern location in Croatia with limited space for development due to its enclosure by the Dinaric Alps and Adriatic Sea, as well as the close national borders with Bosnia and Herzegovina on the North and with Montenegro on East. Transportation has always been a major challenge. The city currently relies on a single entry and exit road which is subject to heavy congestion and delays. The construction of a highway along the Dalmatian coast is planned in the coming years.



Picture 1 Urban area of Dubrovnik

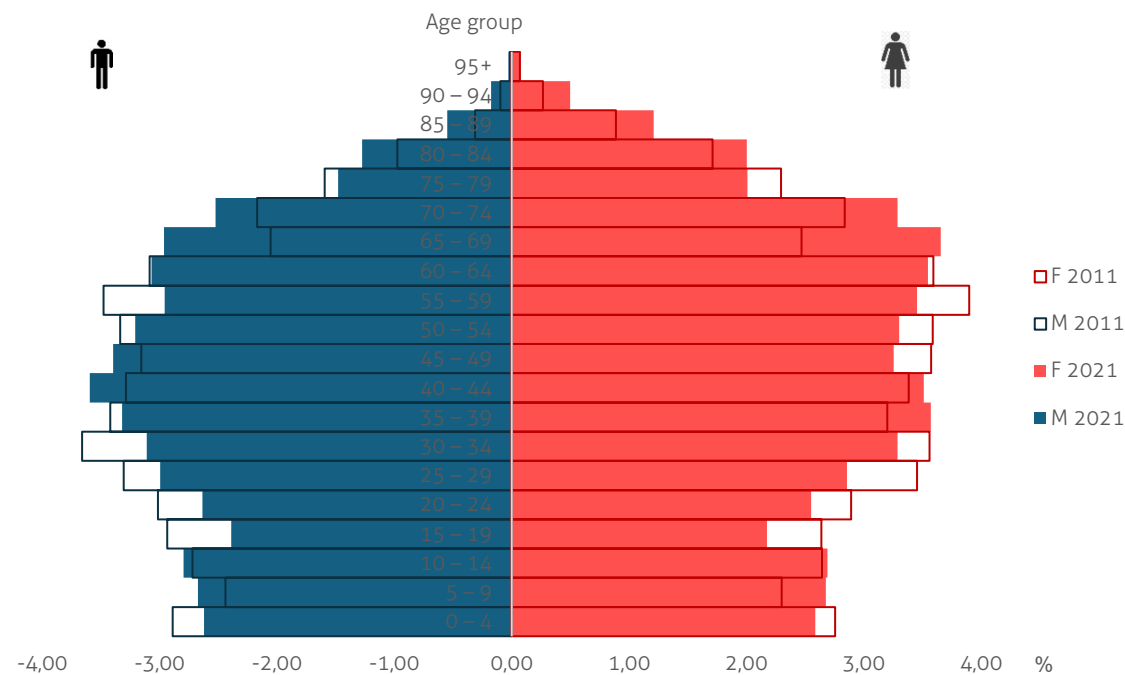
2.2. Population statistics and demography

According to the 2021 Census, the Urban Area of Dubrovnik had a population of 60,510 inhabitants, with 68.7% residing in the City of Dubrovnik. The Dubrovnik area is characterized by significant polarization of settlement, partly conditioned by the relief base and historical development. Alongside polarization, there is a process of coastalization that has influenced the concentration of population and larger settlements along the coast. The total population of the Dubrovnik area represents 52.4% of the population of Dubrovnik-Neretva County and 1.6% of the population of Croatia. The results of the 2021 Census indicate a decrease in the population by 1.9% compared to the 2011 Census. The Dubrovnik area has an average population density of 139.9 inhabitants per square kilometer, which is double the national average. The demographic weight is evident in the City of Dubrovnik, which has a population density of 1,951.8 inhabitants per square kilometer.

In the last intercensal period, a decrease in the number of inhabitants was recorded at the level of the City of Dubrovnik (-2.5%), primarily due to the size of its demographic base, being the main cause of the overall decline in the number of inhabitants in the Dubrovnik area. The Municipality of Župa dubrovačka recorded population growth (+4.3%), and there was a slight increase in the population of the Municipality of Konavle (+0.3%). The Municipality of Dubrovačko primorje lost 24.6% of its population.

The age structure of the population is an important indicator for considering the potential for sustainable economic development. Of particular significance is the size of the working-age population, i.e., the number of individuals aged 15-64, who are considered to be of working age. The age and gender structure of the population in the urban area of Dubrovnik, according to the data from the 2021 Census, closely resembles the age-gender pyramid of the population of Croatia. It belongs to the constrictive type; the most numerous age groups are those of mature adults, while younger age groups are decreasing. The size of the working-age population in 2021 was 37,643 inhabitants, representing a decrease of 3,375 individuals, or 8.2 percent compared to the 2011 census. The primary cause of the observed decrease is the aging of the working-age population, and younger cohorts entering the workforce over time are smaller, thus unable to fully replace the older population retiring.

The result of this observed process is a trend of aging and a decrease in the workforce, which represents a structural problem for the urban area of Dubrovnik and a key challenge for future economic development. The narrowing of the age-gender pyramid base suggests that encouraging migration of new population in the coming decades will become necessary. Therefore, strengthening the capacity for green economic transition provides potential for creating quality jobs that will play an important role in retaining the existing population and attracting new residents.



Picture 2 Population pyramid of urban area of Dubrovnik

According to data from the Croatian Bureau of Statistics, which records estimates of population movements on an annual basis, the Dubrovnik area lost 96 inhabitants from 2016 to 2020, with a natural change rate of -0.3%. The Municipality of Župa dubrovačka has the best indicators, with a positive natural change rate of +4.7%, while the Municipality of Dubrovačko primorje has the most negative indicators with a natural change rate of -8.5%.

The City of Dubrovnik and the Municipality of Konavle both have slightly negative natural change rates, characterized by high birth rates but also slightly higher mortality rates. The demographic characteristic of the Municipality of Dubrovačko primorje is emigration depopulation resulting from specific socio-economic development, partially characterizing the City of Dubrovnik and the Municipality of Konavle. On the other hand, immigration-driven revitalization has caused natural growth in the Municipality of Župa dubrovačka.

The Dubrovnik area recorded a positive migration balance from 2016 to 2020. Three out of four units in the Dubrovnik area experienced higher rates of immigration than emigration, with the exception of the Municipality of Dubrovačko primorje, which had a significantly negative migration balance. The City of Dubrovnik had the highest positive values (+5.7%), attracting immigrants. Immigrants to the area mainly come from abroad (mostly from Bosnia and Herzegovina) and from other cities or municipalities within the Dubrovnik-Neretva County, with a smaller percentage coming from other counties.

2.3. Economic characteristic

Between 2015 and 2019, Dubrovnik-Neretva County (DNC) experienced significant economic growth, with GDP increasing by 29.5%, reaching 13.264 billion HRK (3.2% of Croatia's total GDP). The county ranked 4th in GDP per capita (108,779 HRK in 2019).

Tourism-related sectors dominated, contributing 41.4% of GDP (wholesale/retail, transport, hospitality), followed by public administration (14.3%) and construction (11.6%). While most sectors declined post-2015, construction and professional services grew.

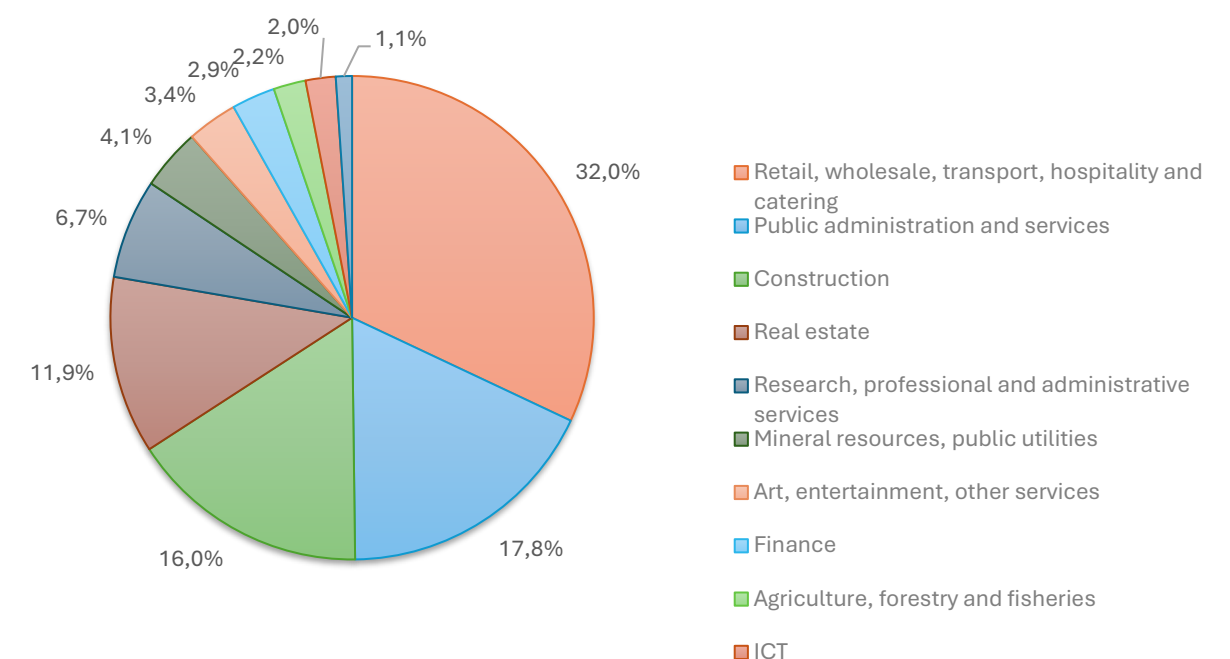
However, COVID-19 (2020–2021) likely stalled growth due to heavy reliance on tourism.

Business Landscape (2020):

- Micro-enterprises dominated (91.3% of 2,747 total firms).
- 77.9% of companies were concentrated in Dubrovnik City, hosting most medium/large enterprises.

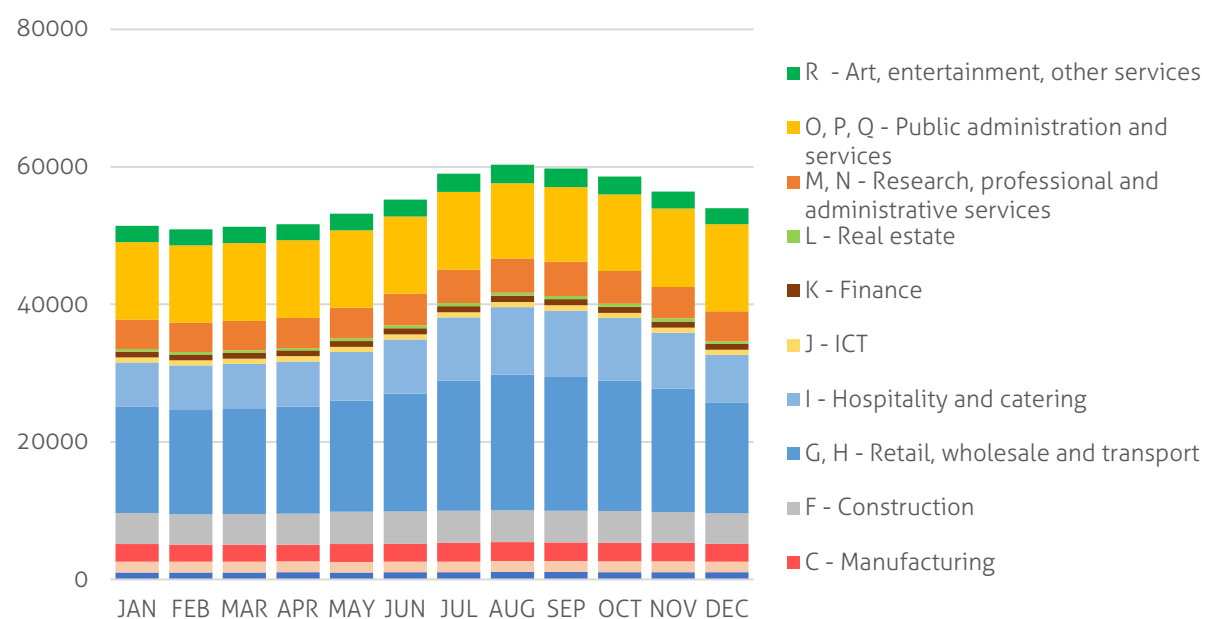
In terms of economic activities, tertiary sector activities primarily related to tourism prevail, with accommodation and food service activities standing out (20.3%, or 610 companies in the Dubrovnik area). The largest number of companies in the same category operates in all local self-government units except for the Župa Dubrovačka, where construction is the dominant activity.

According to sectors of activity, the highest number of companies were founded in the accommodation and food service activities sector (305), followed by wholesale and retail trade activities (136), although there is a higher dynamic of closures compared to formations in that sector (273 closures). The companies in the Dubrovnik area generated the highest revenues (in 2019, the highest revenue amounted to 8 billion HRK).



FPicture 3 The structure of gross value added of the Dubrovnik-Neretva County during 2021 by sectors of activity

Accommodation and food service activities sector generated the highest revenues by activity (31.0% of total revenue). In 2020, this sector experienced a decrease in revenue, confirming the need for diversification into more resilient activities against external factors. Companies in the SME category recorded a profit of 5.7 billion HRK, accounting for 61.5% of the total profit for the period, employing 85% of the workforce (14,055 employees) and achieving 65% of total exports, indicating the importance of SMEs in the overall economy of the Dubrovnik area, as well as the value of large companies as drivers of successful business operations.



Picture 3 The workforce structure of the population in the Dubrovnik Urban Area according to the highest level of education in 2021.

The economic situation in UA Dubrovnik is challenging. The COVID-19 crisis highlighted the city's vulnerability due to its over-reliance on the tourism industry. Tourism has since bounced back however there are no signs of the necessary economic diversification. Tourism has also driven up the cost of living along with inflation and the transition to the Euro, resulting in economic challenges for local residents.

Dubrovnik, a leading Croatian tourist destination, is enhancing sustainability and diversifying its tourism sector. The Port Authority has cut lighting costs by 50% with smart LED systems, introduced e-vehicles, and plans onshore power for ships. While tourism drives the local economy (26% of revenue, 30% of jobs in 2019), the city is moving beyond its "sun and sea" model by leveraging its cultural heritage, events, and infrastructure. Challenges include reliance on international visitors (evident during COVID-19) and the need for year-round, collaborative tourism development. During the period 2016-2020, the number of tourist arrivals and overnight stays increased until 2019 when tourist records were also recorded (1,817,611 tourist arrivals and 5,879,076 overnight stays). The years 2020 and 2021 were marked by the COVID-19 pandemic, resulting in a decline in the number of tourist arrivals and overnight stays.

The future development direction of the economy is aimed at achieving a globally competitive, resilient to external factors, digital, technologically advanced, and diversified economy, based on scientific research activities.

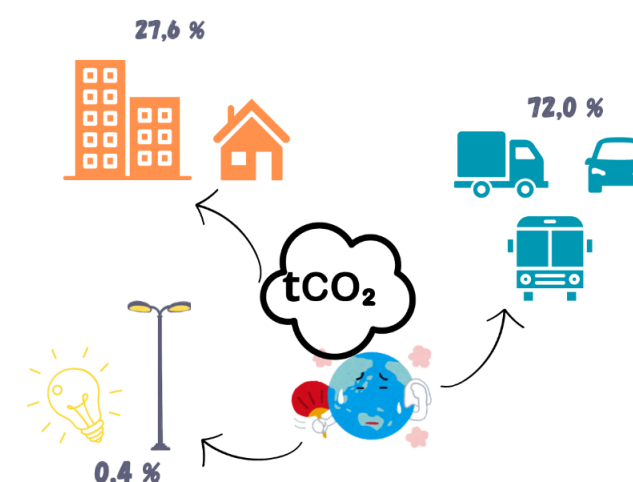
2.4. Environmental aspect

The environmental aspect of Dubrovnik's climate includes its relatively mild temperatures, which can contribute to a comfortable living environment for residents and visitors alike. However, the city's susceptibility to rising temperatures due to climate change could pose challenges, particularly in managing energy consumption for cooling during the hot summer months. Additionally, the rarity of snowfall in Dubrovnik may impact local ecosystems and water resources, potentially affecting biodiversity and water availability. It's important for the city to consider these environmental factors in its planning and sustainability initiatives to ensure the long-term well-being of both its residents and its natural surroundings.

Monitoring and assessing air quality in the Republic of Croatia is conducted in zones and agglomerations designated by the Regulation on Determining Zones and Agglomerations According to Air Pollution Levels in the Territory of the Republic of Croatia (Official Gazette 01/14). Dubrovnik is located in zone HR5 - Dalmatia. In 2022, it was assessed that the air quality in zone HR5 is of category I (clean or slightly polluted air) with regard to concentrations of sulfur dioxide, nitrogen oxides, particulate matter (PM₁₀ and PM_{2.5}), carbon monoxide, benzene, benzo(a)pyrene in PM₁₀ particles, as well as lead, cadmium, nickel, and arsenic in PM₁₀ particles (Baček & Pejaković, 2023).

In the economic development of Dubrovnik, tourism and maritime activities hold primary significance, while industry and agriculture are much less represented in the city's economic structure. Dubrovnik stands out among other domestic tourist destinations as the world-renowned Croatian tourism hub. The diversity of the Mediterranean landscape with its mild climate conducive to lush vegetation, picturesque location, architectural, and artistic treasures of the old city of Dubrovnik attract tourists and enable the development of the tourism industry. One of the most significant forms of tourism in Dubrovnik is cruise tourism. Maritime cruises have a strong impact on the life and development of ports, associated cities, and regions. The impact is evident on the socio-social environment, economy, technology, and, especially, the environment. Uncontrolled development of cruise tourism can negatively affect the quality of life of local residents due to the high concentration of such ships in a short period. This is particularly evident in smaller Mediterranean ports/cities that are unavoidable tourist attractions and provide additional value to cruising. Of course, environmental effects cannot be ignored because despite strict technical/technological standards applied to cruise ships, all forms of protection (anti-fouling coatings, exhaust gases, oily and waste waters, noise, anchoring, waste) cannot be ideally resolved. Theoretically, this is possible, but due to human errors, technical shortcomings, and various other circumstances, harmful consequences cannot be completely avoided in practice. Adding to this is the significantly increased traffic of motor vehicles of all kinds and vessels serving ships, it is not difficult to conclude that all of this is a significant impact on the environment (air, land, water/sea, human health, historical monuments).

Concerning CO₂ emissions, Dubrovnik Municipality has a target in its Action Plan for Sustainable Energy and Climate (SECAP) to reduce CO₂ emissions by 40% by 2030, compared to 2015. At the present moment, the sources of CO₂ emissions are electricity production (17,7% of emissions); extra light heating oil (7,4%), gasoline (11,1%), diesel (60,1%), LPG (liquefied petroleum gas) (2,9%) and biomass (0,8%). By the end of 2030, Dubrovnik will reduce CO₂ emissions in these sectors: urban transport, public lightning and building sector.



3. EXISTING STRATEGIES AND POLICIES

STRATEGIES AND POLICIES



The Urban dimension of the EU Cohesion Policy guides the City of Dubrovnik. The city strives to implement the objectives of a smarter, greener, connected, social Europe, and Europe closer to citizens in all its documents and policies for the benefit of the population and to guide future urban development. The Dubrovnik Urban Area Development Strategy for example is aligned with strategic documents adopted at the level of the European Union. Therefore, the goals and related measures and activities comply with the European Green Deal and its priorities such as economic sustainability, sustainable transport, green building sectors, and climate neutrality.

National Level

Croatia's **National Development Strategy 2030** outlines four priority clusters: a sustainable economy and society, crisis resilience, green and digital transitions, and balanced regional development. It emphasizes digital skills and sustainability across all sectors. **The Digital Croatia 2020** initiative aims to position Croatia as a digitally advanced country by enhancing digital technologies in public administration, healthcare, education, and business. **The Smart Specialization Strategy 2023–2029** prioritizes high-value service sectors like gaming, digital products, and the audiovisual industry. Strategies such as the **Climate Change Adaptation Strategy** and the **Low-Carbon Development Strategy** focus on reducing vulnerability to climate change and fostering a low-carbon economy, respectively. Additionally, the **Industrial Transition Plan for Adriatic Croatia** supports blue and green growth sectors and smart industry, while the **National Action Plan for Green Jobs Skills** develops expertise for energy-efficient renovations and sustainable infrastructure.

Regional Level

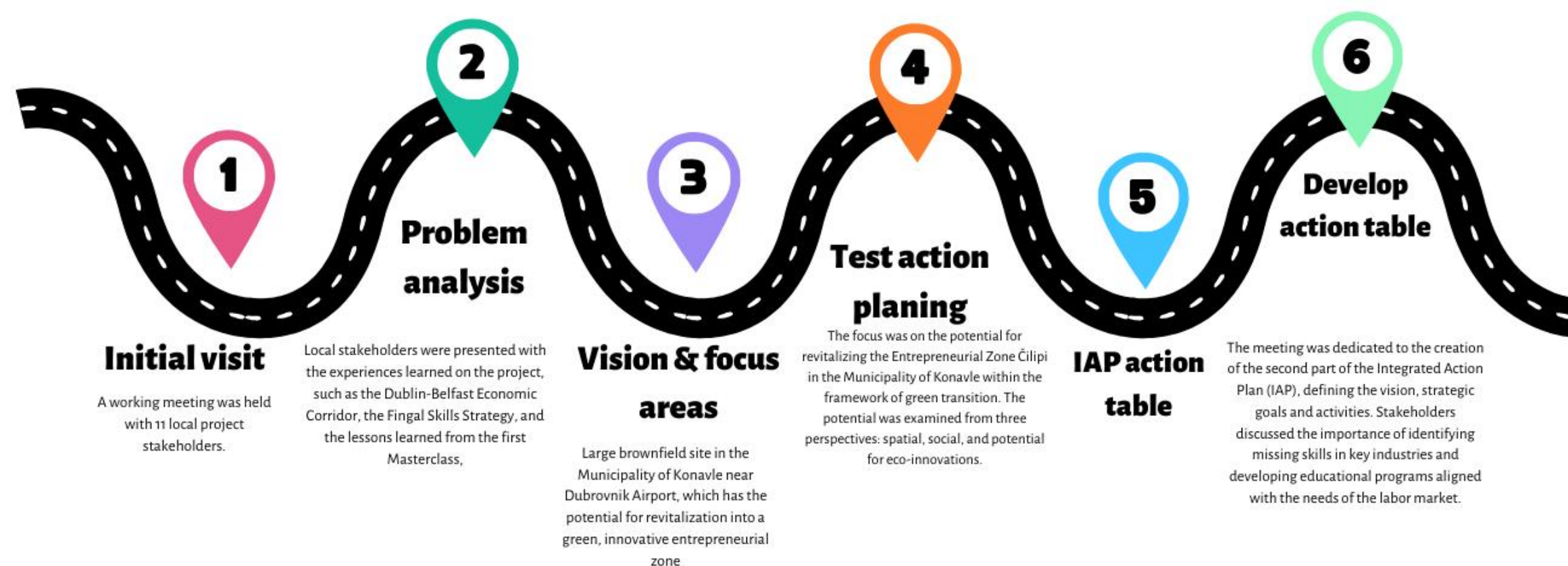
The **Development Plan of Dubrovnik-Neretva County (2027)** aims to improve quality of life through sustainable resource use, renewable energy promotion, and innovation-driven economic growth. **The Dubrovnik Urban Area Development Strategy (2021–2027)** focuses on sustainable, smart, and safe mobility, reducing traffic congestion, and developing e-ships and supporting infrastructure to connect coastal communities.

Local Level

Dubrovnik's **Sustainable Energy and Climate Action Plan (SECAP)** aims to reduce CO₂ emissions by 40% by 2030 through targeted investments in energy, transport, and the environment. **The Strategy for Equal Opportunities for Persons with Disabilities** ensures inclusion and accessibility in key areas of public life. **The Management Plan for the UNESCO World Heritage Site (Old City of Dubrovnik)** balances heritage preservation with improved quality of life and tourism diversification. Meanwhile, the **Local Action Plan for Sustainable Tourism** fosters cooperation among stakeholders to develop rural and cultural tourism based on authentic experiences. Lastly, the **Sustainable Urban Mobility Plan** seeks to enhance mobility solutions to support economic prosperity and social inclusion while ensuring better living conditions for all citizens.

4. PROBLEM IDENTIFICATION BY LOCAL STAKEHOLDERS

ULG MEETINGS TIMELINE



(one more photo)

4.1. ULG Meetings and Stakeholders list

The core ULG consists of 11 stakeholders and includes representatives from the public and private sectors across the Urban Area of Dubrovnik. Regarding the topic of ULG meeting, structure and number of active members are changing.

ULG Membership			
NAME	GENDER	ORGANIZATION	TYPE
Vlaho Margaretić	M	City of Dubrovnik Department For Tourism, Economy and Sea	Public
Blaženka Kordić Aleksić	F	City of Dubrovnik Tourist Board	Public
Marijana Vrlić	F	Municipality of Dubrovačko Primorje	Public
Hrvoje Spremić	M	Dubrovnik Airport	Public
Marija Galiot	F	Municipality of Konavle	Public
Miho Baće	M	TUP - UTD Ragusa	Private
Mila Koludrović	F	Croatian Chamber of Commerce (County Level)	Public
Ivan Deranja	M	Sanitat Dubrovnik Ltd.	Public
Nikša Grljević	M	Libertas Dubrovnik Ltd.	Public
Kristina Laptalo	F	Dubrovnik Port Authority	Public
Dario Barbarić	M	Dubrovnik Port Authority	Public

In our endeavor to build the capacity of small cities to effectively address climate change through the pursuit of a green economy agenda, we have adopted an integrated approach that emphasizes multi-actor and multi-level engagement. By convening local stakeholders in regular meetings, we ensure that diverse perspectives are considered, fostering collaboration among government agencies, businesses, community groups, local stakeholders. Through this integrated approach, the aim is to develop a comprehensive action plan that addresses various aspects of transitioning to low-carbon economic activities.

4.2. Potential IAP Focus

The Dubrovnik IAP will focus on actions that can promote a greener low-carbon economic diversification of the Dubrovnik Urban Area in order to tackle some of the key challenges identified such as over-reliance on seasonal tourism with a too narrow focus on the old town, high cost of living and lack of sustainable transportation options. Their work will focus on brownfield areas with the potential to improve the economic, ecological, and social environment of the UA by green businesses reusing unused areas as part of the goal to diversify the local economy.

The Action Plan for the green transition of business zones in Dubrovnik is centered on creating a sustainable and forward-thinking urban area that aligns economic growth with environmental responsibility. This focus stems from the need to address the growing challenges of climate change, resource efficiency, and urbanization while fostering innovation and competitiveness. By prioritizing sustainable practices, the plan aims to reduce the environmental impact of business activities, enhance the attractiveness of entrepreneurial zones, and integrate them into the broader framework of urban sustainability. Additionally, the plan emphasizes collaboration among local stakeholders, including businesses, public institutions, and the community, to ensure that development initiatives are inclusive and aligned with the long-term vision for Dubrovnik as a hub of sustainable, smart, and resilient economic activity. This strategic focus serves as the foundation for defining the goals and actions necessary to achieve this transformation.

Some potential challenges which could be addressed include:

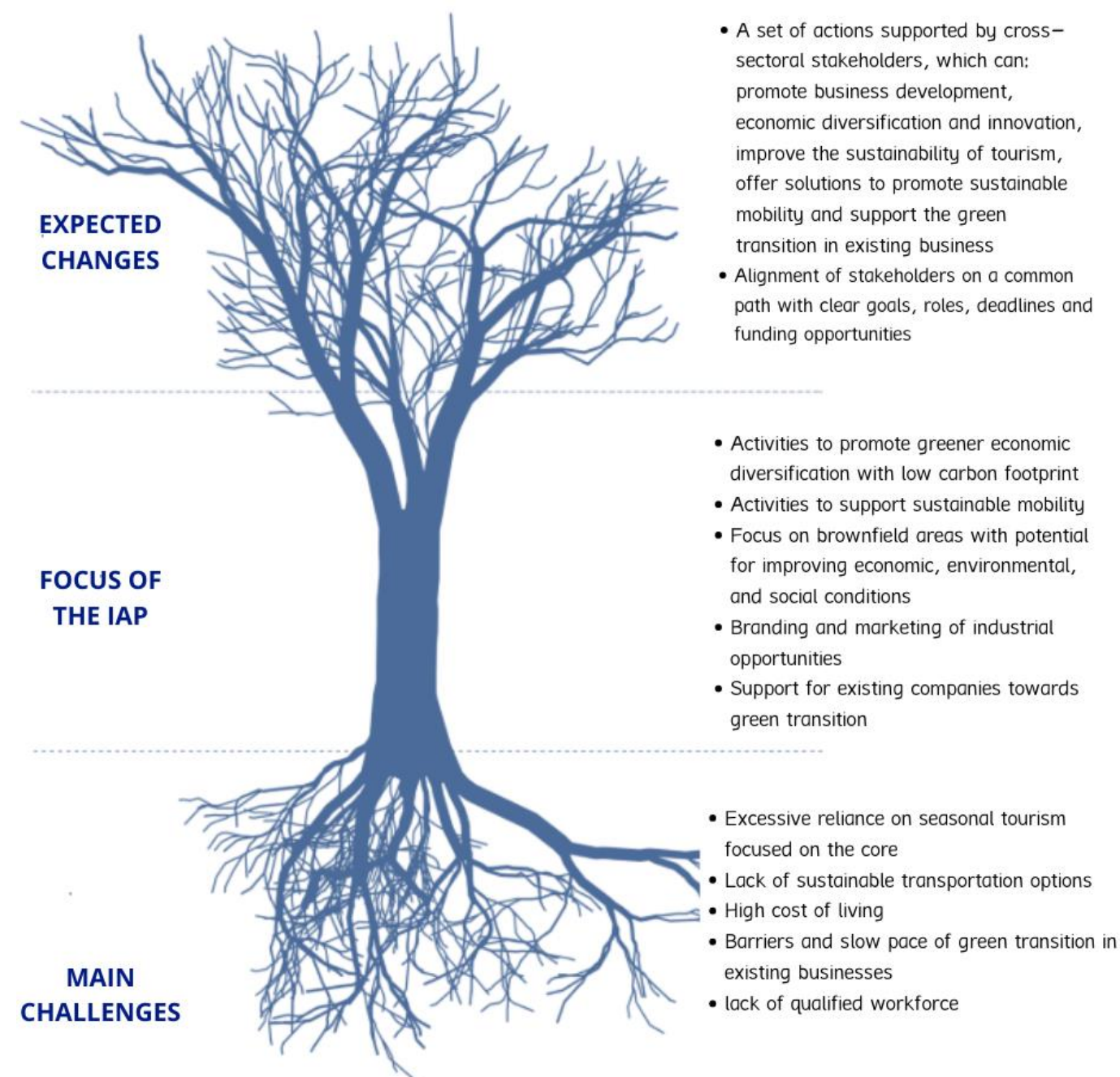
- ✚ How to diversify the tourism offering beyond the city walls and into the rural areas
- ✚ How to promote more high-value tourism
- ✚ How to improve awareness of the green port initiatives
- ✚ How to diversify the economy beyond tourism towards more green business
- ✚ Developing programs that align higher education institutions with the needs of green and circular economies, supporting the creation of a skilled workforce for sustainable industries.
- ✚ Promoting sustainable urban mobility by improving connectivity between business zones and urban centers through low-emission transport solutions
- ✚ Bridging the gap between academia and industry by fostering stronger collaborations with universities to ensure knowledge transfer and innovation adoption in business practices.

4.3. SWOT Analysis

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Safety & Security – low crime rate • Attractive tourism destination • Rich cultural heritage • Good air & water quality • High quality environment and nature • Open & welcoming culture • Attractive & clean public space • University city • Geographic location • Pleasant climate • Worldwide recognition 	<ul style="list-style-type: none"> • Space constraints • High cost of living • Limited road infrastructure • Seasonal tourism industry • Traffic congestion & Car dependency • Lack of mobility infrastructure • Lack of synergy & collaboration between various bodies responsible for e.g., tourism • Depopulation • Lack of capacity in electricity grid
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> ▪ Collaboration for efficiency, innovation and enterprise development ▪ Wine & Gastronomy Destination ▪ Off season offering ▪ TUP Factory ▪ Renewable Energy Generation ▪ Rural Development & islands ▪ Agri Tourism ▪ Young people & new skills ▪ Remote working location ▪ Film, audio visual & gaming industry 	<ul style="list-style-type: none"> • Bureaucracy • Economic Structure Vulnerability • Property Speculation • Air B & B • Competition: neighboring countries • Low wages • Taxi market deregulation • Gentrification • Mass tourism • Climate Change & Earthquakes • Geopolitical insecurity & Pandemics • Poor migrant integration • “Grey” business zone

4.4. Problem identification

The aim of the meetings with local stakeholders was to present the potential of this area and what this area can contribute to the EcoCore project. In Župa Dubrovačka, there are four entrepreneurial zones that are fully occupied due to their favorable location in the immediate vicinity of the city of Dubrovnik. However, one of the biggest challenges highlighted by local stakeholders is the lack of qualified workforce in the future. Given the attractiveness of jobs in tourism-related activities, better working conditions, and the growing need for new employees, there is a need to address this issue as a prerequisite for promoting green and digital transformation of entrepreneurial zones, improving existing activities, and developing new knowledge and skills among workers



When it comes to transportation, the challenge of developing sustainable forms of mobility due to the relief specificity, i.e., unfavorable terrain that hinders the development of sidewalks, bike paths, etc., has been highlighted, which also reduces the safety of all traffic participants. As an area where there is an initiative to develop a promenade and pedestrian corridor, the corridor from Dubrovnik to Cavtat was mentioned, where the section has been partially realized, but the realization of the entire route would require significant environmental interventions. Therefore, the idea of realization has not fully come to life. The potential of former railway sections, such as the *Čirova staza* in the Konavle area, as a space that could be revitalized into bike paths, was also highlighted.

It is necessary to emphasize and consider the idea of coastal mobility to relieve road traffic, and it was emphasized that there are already private maritime carriers that transport passengers to the old city center of Dubrovnik from other parts of the urban area, thus relieving the generation of car traffic in the excessively burdened city center, which is characterized by an extremely small number of parking spaces and the impossibility of further expanding zones for parking. In addition to the need for the development of sustainable forms of mobility, the need for further development of road corridors (highways) was mentioned, given the high burden on existing roads in the urban area of Dubrovnik, which are the result of daily commuting and transit traffic, and the burden further increases during the summer months, as Dubrovnik and its surroundings represent one of the most attractive and visited areas in the Mediterranean.

One of the key problems identified is the insufficient alignment of university programs and training initiatives with the needs of non-tourism sectors, which are essential for diversifying the local economy. While Dubrovnik has a strong academic foundation, existing educational offerings and skill development programs are predominantly oriented towards tourism-related fields, leaving a gap in the preparation of skilled professionals for emerging and innovative industries such as IT, environmental science, renewable energy, and restoration. This misalignment limits the capacity of universities to effectively support the economic diversification efforts of the region and creates challenges in retaining young talent who seek opportunities in these non-tourism industries. Addressing this issue is crucial to fostering knowledge transfer between academia and the private sector, ensuring that the education system produces a workforce equipped with the skills needed for sustainable economic development beyond tourism.

4.5. IAP vision

The stability and sustainability of the development of the Urban Area of Dubrovnik, as well as resilience to external influences and changes, can be ensured through the diversification of the economy, by encouraging a wider range of activities and empowering those activities that currently have untapped potential. Increasing entrepreneurial and innovative capacities would ensure competitiveness in national and supranational frameworks, and the enhancement of the economy needs to be synergized with the education sector, especially higher education, to initiate "knowledge transfer". Green development, aimed at reducing negative impacts and adapting to climate change, will be based on energy transition, circular spatial management, and the development of green areas and green infrastructure with the goal of realizing all of its multifunctional benefits and overall improvement of public spaces.

The urban area of Dubrovnik is an area of sustainable, smart, diversified, and resilient high-value-added economy for society and the environment, sustainable and smart mobility

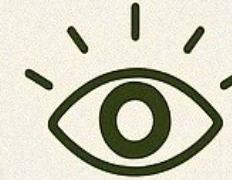
5. ACTION PLAN

During the development of the Integrated Action Plan, a comprehensive analysis of the current state was conducted, including the identification and description of development needs, challenges, and potentials. The ULG meetings with local stakeholders provided significant insights. During workshops, a medium-term development vision for the Dubrovnik Urban Area was established:

"The urban area of Dubrovnik is an area of sustainable, smart, diversified, and resilient high-value-added economy for society and the environment, sustainable and smart mobility."

To achieve this vision, three main strategic goals were defined to guide the development of the Dubrovnik Urban Area:

1. **Improvement of entrepreneurial infrastructure and skill development plans** – Focused on fostering innovation and supporting businesses with better resources and targeted skill enhancement.
2. **Enhancement of the quality, accessibility, and environmental sustainability of transport by connecting it with entrepreneurial zones** – Aiming to create efficient and sustainable mobility solutions while integrating transport with key economic zones.
3. **Sustainable economic infrastructure of the urban area** – Ensuring the development of resilient and environmentally friendly infrastructure that supports long-term economic growth.



The urban area of Dubrovnik is an area of sustainable, smart, diversified, and resilient high-value-added economy for society and the environment, sustainable and smart mobility



Improvement of entrepreneurial infrastructure and skill development plans

Enhancement of the quality, accessibility and environmental sustainability of transport by connecting it with entrepreneurial zones

Sustainable economic infrastructure of the urban area

5.1. Improvement of entrepreneurial infrastructure and skill development plans

The goal is to diversify the economy by expanding and improving various sectors, strengthening entrepreneurial infrastructure, and boosting innovation to build a resilient, tourism-independent economy. A key challenge is the development of the University, including the lack of skilled personnel and the need for new academic programs to support Dubrovnik as a student city. Co-financing scarce higher education programs could help meet labor market needs. Efforts should also focus on preventing brain drain and retaining graduates in non-tourism fields like IT, environmental science, and restoration. The University recognizes its limited role in the region's social and economic life and aims to improve its impact through interdisciplinary centers, knowledge transfer, lifelong learning, intellectual property protection, and alumni engagement.

Intervention area	Specific objective	Action	Action step	Time frame	Responsible	Key partners
Development of entrepreneurial infrastructure and skills	<i>By 2030 reduce identified skill gaps in Dubrovnik's priority sectors (green tech, IT, sustainable tourism) by 40% through the development of 12 market-aligned training programs and 3 university-industry partnerships, ensuring 70% of participants gain employment or upskilling certifications within 6</i>	5.1.1. Identification of skill gaps in key industries	5.1.1.1. Organizing focus groups and surveys with entrepreneurs, educational institutions, and policymakers to identify future skill needs.	2025-2028	City of Dubrovnik, Dura	University of Dubrovnik
			5.1.1.2. Developing tailored training programs in collaboration with local businesses and industry experts.			
			5.1.1.3. Launching initiatives in schools and universities to introduce students to entrepreneurial thinking.			
		5.1.2. Development of educational and retraining programs aligned with market needs	5.1.2.1. Establishing retraining centers focused on skill transitions, especially for individuals moving from tourism to non-tourism industries.	2025-2030	Croatian Chamber of Commerce	University of Dubrovnik, Dura
			5.1.2.2. Co-financing higher education programs in areas such as IT, engineering, and environmental sciences to attract students.			
		5.1.3. Enhancement of higher education by promoting extracurricular collaboration with local stakeholders	5.1.3.1. Establishing joint laboratories and coworking spaces for students and local entrepreneurs to develop innovative solutions.	2025-2030	City of Dubrovnik,	Croatian Chamber of commerce
			6.1.3.2. Developing volunteer programs for students in cooperation with local associations to gain practical skills.			
			5.1.3.3. Promoting programs for crafts and skills related to cultural heritage restoration and environmental management.			

5.2. Enhancement of the quality, accessibility, and environmental sustainability of transport by connecting it with entrepreneurial zones

The goal aims to create a sustainable, efficient transportation system in Dubrovnik by modernizing the fleet with electric/hybrid buses, digitalizing services (real-time tracking, e-tickets), and optimizing routes to better connect entrepreneurial zones, the historic center, and outskirts. It promotes cycling and walking through adapted bike lanes, e-bike systems, and smart pedestrian zones, supported by educational campaigns and incentives for sustainable commuting. Additionally, green infrastructure solutions—such as stormwater management, solar roof tiles in historic areas, urban gardens, and local initiatives like beekeeping—will enhance environmental resilience and quality of life.

Enhancement of the quality, accessibility, and environmental sustainability of transport by connecting it with entrepreneurial zones						
Intervention area	Specific objective	Action	Action step	Time frame	Responsible	Key partners
Sustainable transport connectivity of entrepreneurial zones	By 2030, increase the share of sustainable transport use (public transit, cycling, walking) to 35% of all trips in Dubrovnik's urban area by expanding electric/hybrid bus routes by 50%, constructing 30 km of new cycling/pedestrian paths, and integrating all major entrepreneurial zones into the low-emission transport network.":*	5.2.1. Development and promotion of high-quality, reliable, and efficient public transport in the urban area	5.2.1.1. Modernization of the public transport fleet by introducing electric and hybrid buses.	2025-2030	Libertas ltd.	City of Dubrovnik, Dubrovnik port authority
			5.2.1.2. Digitalization of the public transport system through the implementation of real-time route tracking applications and online ticket purchasing.			
			5.2.1.3. Introduction of new routes focused on improving connectivity between entrepreneurial zones, the historic center, and major transport hubs.			
		5.2.2. Development and promotion of quality sustainable modes of bicycle and pedestrian mobility and micromobility ("slow mobility")	6.2.2.1. Development of an integrated micromobility infrastructure, including bicycle lanes adapted to Dubrovnik's terrain, an electric bike system, and facilities for e-scooters and secure bicycle parking	2025-2030	City of Dubrovnik, - Department for tourism, economy and sea	Municipality of Konavle, Municipality of Dubrovačko primorje , Municipality of Župa dubrovačka, Dura
			6.2.2.3. Incentivizing employees who use car-sharing services or sustainable transport modes (cycling, walking, etc.).			
		5.2.3. Establishment and Expansion of Infrastructure for Cycling and Pedestrian Traffic	5.2.3.1. Revitalization of existing pedestrian pathways and development of green corridors for pedestrians.	2025-2030	City of Dubrovnik	Administrative Department for Spatial Planning and Construction of Dubrovnik-Neretva County
			5.2.3.2. Introduction of mobile bicycle repair stations along major routes.			
			5.2.3.3. Construction and expansion of bicycle lanes, including the development of safe crossings on busy roads.			

		5.2.4. Promotion of sustainable and innovative solutions for economic infrastructure while preserving natural resources and cultural heritage	5.2.4.1. Development and implementation of stormwater management systems. 5.2.4.2. Increasing energy efficiency in historical areas by installing innovative roof tiles with solar panels to preserve the authenticity of historic buildings. 5.2.4.3. Construction and arrangement of urban gardens on unused city plots.	2025-2030	City of Dubrovnik, Municipality of Konavle, Municipality of Dubrovačko primorje , Municipality of Župa dubrovačka,	Konzervatorski odjel u Dubrovniku, Dura
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5.3. Sustainable economic infrastructure of the urban area

The purpose of this strategic objective is to improve the living standards and economic activities in the urban area of Dubrovnik, based on the principles of circular economy and green measures, while ensuring high-quality utility infrastructure and services for all residents.

High-quality infrastructure is essential for living standards and the economy, but challenges such as the terrain configuration limit access to water supply and drainage in certain areas. The sewer system faces issues of obsolescence, low connectivity, and illegal wastewater discharge. Spatial plans and existing management structures for these zones currently do not account for the implementation of green and circular measures. Thus, the goal of this initiative is to support local stakeholders in the development of these zones with the application of green solutions. Historically, these zones were primarily designated for industrial purposes, but today they have been repurposed as business zones hosting commercial and business facilities, while some areas are planned for education and housing. Future planning should avoid the creation of grey zones, focusing instead on green solutions such as implementing green roofs, rain gardens, pedestrian and cycling paths, low-energy buildings, and energy-efficient lighting

Sustainable economic infrastructure of the urban area						
Intervention area	Specific objective	Action	Action step	Time frame	Responsible	Key partners
Sustainable urban economic infrastructure	By 2030, establish three modernized entrepreneurial zones in Dubrovnik's urban area, achieving a 50% increase in non-tourism businesses while	5.3.1. Support for the development of entrepreneurial zones with a modern concept, implementing green and circular development measures, and focusing on non-tourism activities	5.3.1.1. Analysis of the current state of entrepreneurial zones using GIS tools	2025-2027	City of Dubrovnik, Municipality of Konavle, Municipality of Dubrovačko primorje , Municipality of Župa dubrovačka,	Private sector, Dura, Dubrovnik airport
			5.3.1.2. Implementation of green and circular solutions in infrastructure			
			5.3.1.3. Conducting training sessions and providing support for entrepreneurs			
		5.3.2. Investment in improving the business environment to enhance economic resilience and competitiveness,	5.3.2.1. Development of digital platforms for business operations.	2025-2030	City of Dubrovnik Municipality of Konavle,	Private sector, Dura

		particularly through the integration of green and digital transition measures	5.3.2.2. Introduction of smart grids for energy management in business zones		Municipality of Dubrovačko primorje , Municipality of Župa dubrovačka,	
			5.3.2.3. Organizing conferences and fairs to promote green technologies			
			5.3.2.4. Awarding prizes to entrepreneurs implementing circular business models			
		5.3.3. Contribution to the modernization of waste management systems based on circular economy principles	5.3.3.1. Developing local systems for waste sorting and recycling	2025-2030	City of Dubrovnik Municipality of Konavle, Municipality of Dubrovačko primorje, Municipality of Župa dubrovačka	Private sector, Dura
			5.3.3.2. Educating residents and entrepreneurs about waste management			
			5.3.3.3. Providing subsidies for companies adopting circular production models			

6. PLANNED ACTIONS

1.



MODERNIZATION OF THE PUBLIC TRANSPORT FLEET BY INTRODUCING ELECTRIC AND HYBRID BUSES

Action title: DEVELOPMENT AND PROMOTION OF HIGH-QUALITY, RELIABLE, AND EFFICIENT PUBLIC TRANSPORT IN THE URBAN AREA		Action Owner : Libertas d.o.o.	
Description Dubrovnik is modernizing its public transport by replacing diesel buses with electric and hybrid models, significantly reducing emissions and noise pollution. The initiative includes installing charging infrastructure and integrating smart technologies for real-time fleet management."	Key stakeholders Administrative Department for Traffic of Dubrovnik-Neretva County	Links to Strategy: The sustainable urban mobility plan	
		Finance and resource: 3.954.346,00 € EU funds, City of Dubrovnik	
		Action readiness: In implementation	
Activity	Tame frame	Outputs	Problem/risk
Conduct a Transparent Public Procurement Process	2025-2026	<ul style="list-style-type: none"> Completed needs assessment report (current fleet analysis, route demands, emission levels). Published tender documents with technical specs and sustainability criteria. Signed contract(s) with bus manufacturers/suppliers (e.g., for 50 electric/hybrid buses). Procurement compliance report 	<ul style="list-style-type: none"> Delays in tender approval due to bureaucratic hurdles or legal disputes. Higher-than-expected costs for electric/hybrid buses due to supply chain issues.
Develop Charging & Maintenance Infrastructure	2026-2027	<ul style="list-style-type: none"> Installed charging stations (minimum 2) Grid upgrade agreements with energy providers (e.g., signed contracts for infrastructure expansion). Trained staff 	<ul style="list-style-type: none"> Insufficient power grid capacity causing delays in charging station deployment Lack of skilled technicians to maintain new buses, leading to downtime.
Implement Fleet Digitalization & Smart Systems	2026-2027	<ul style="list-style-type: none"> Integrated passenger app/website with live bus tracking and schedule updates. Predictive maintenance software implemented Connecting Libertas data with google maps 	<ul style="list-style-type: none"> Technical problems and data integration failures
Pilot & Scale-Up Deployment	2027-2028	<ul style="list-style-type: none"> Pilot evaluation report (performance metrics, rider feedback, cost/energy savings). Operational guidelines for drivers/technicians (e.g., optimized charging protocols). Test 5–10 buses on high-demand routes 	<ul style="list-style-type: none"> Battery performance issues in extreme weather (cold winters/hot summers).
Launch Public Awareness Campaigns	2027-2028	<ul style="list-style-type: none"> Campaign materials (social media content, posters, press releases). Media coverage 	<ul style="list-style-type: none"> Insufficient budget for effective outreach.

2.



DEVELOPMENT OF EDUCATIONAL AND RETRAINING PROGRAMS ALIGNED WITH MARKET NEEDS

Action title: DEVELOPMENT OF EDUCATIONAL AND RETRAINING PROGRAMS ALIGNED WITH MARKET NEEDS		Action Owner : Educational institution	
Description Dubrovnik is launching targeted education and retraining programs to equip residents with skills matching local labor market demands, particularly in green tech, sustainable tourism, and digital sectors. These programs combine vocational training with industry partnerships to ensure direct employability and support economic diversification.	Key stakeholders Libertas International University, entrepreneurs and craftsmen	Links to Strategy: University strategy 2020-2026.	
		Finance and resource 50.000 € Ministry of Science, Education and Youth	
		Action readiness Planned	
Activity	Tame frame	Outputs	Problem/risk
Adoption of new educational programs	2026-2027	<ul style="list-style-type: none"> Approved list of new programs (e.g., digital skills, green entrepreneurship) with syllabi and learning objectives. Signed agreements with accrediting bodies or ministries to formalize program recognition. 	<ul style="list-style-type: none"> Resistance from faculty/staff due to perceived increased workload or lack of expertise Misalignment with labor market needs leading to low student interest
Training of existing staff	2027-2028	<ul style="list-style-type: none"> Approved list of new programs (e.g., digital skills, green entrepreneurship) with syllabi and learning objectives. Signed agreements with accrediting bodies or ministries to formalize program recognition. 	<ul style="list-style-type: none"> Low participation rates in training sessions Insufficient knowledge retention after training
Implementation of new programs in the current curriculum	2027-2029	<ul style="list-style-type: none"> vised curriculum documents showing integration points (e.g., new courses/modules). Pilot feedback report from students/staff (e.g., surveys), 	<ul style="list-style-type: none"> Overcrowded curriculum causing pushback from departments Lack of appropriate teaching materials
Introducing entrepreneurs to new programs in educational institutions	2027-2029	<ul style="list-style-type: none"> Partnership agreements with local businesses (e.g., guest lectures, internships). Entrepreneur-led workshops/seminars held 	<ul style="list-style-type: none"> Low entrepreneur engagement due to time constraints Mismatch between academic and business expectations
Support in providing scholarships to students	2028-2029	<ul style="list-style-type: none"> List of scholarship recipients Funds disbursed 	<ul style="list-style-type: none"> Insufficient funding for desired number of scholarships Recipients not meeting performance expectations

3.



SUPPORT FOR THE DEVELOPMENT OF ENTREPRENEURIAL ZONES WITH A MODERN CONCEPT, IMPLEMENTING GREEN AND CIRCULAR DEVELOPMENT MEASURES, AND FOCUSING ON NON-TOURISM ACTIVITIES

Action title: SUPPORT FOR THE DEVELOPMENT OF ENTREPRENEURIAL ZONES WITH A MODERN CONCEPT, IMPLEMENTING GREEN AND CIRCULAR DEVELOPMENT MEASURES, AND FOCUSING ON NON-TOURISM ACTIVITIES		Action Owner : City of Dubrovnik	
Description Dubrovnik is transforming its entrepreneurial zones into modern, sustainable hubs by implementing green infrastructure and circular economy solutions, while actively diversifying beyond tourism through targeted support for tech, green industries, and education sectors. This initiative combines eco-friendly urban planning with business incentives and skills development to create a resilient, future-proof local economy.	Key stakeholders Municipality of Konavle, Municipality of Župa dubrovačka	Links to Strategy: The Dubrovnik Urban Area Development Strategy (2021–2027)	
		Finance and resource 20.000 € EU funds, City of Dubrovnik,	
		Action readiness Planned	
Activity	Tame frame	Outputs	Problem/risk
Analysis of the current state of entrepreneurial zones using GIS tools	2025-2026	<ul style="list-style-type: none"> GIS-based diagnostic report mapping infrastructure gaps, land use, and environmental risks (e.g., flood zones, energy inefficiencies). Prioritized list of zones for green interventions, ranked by urgency and potential impact 	<ul style="list-style-type: none"> Incomplete/outdated GIS data leading to flawed analysis Resistance from zone stakeholders fearing restrictive regulations
Implementation minimum 3 green and circular solutions in infrastructure	2026-2028	<ul style="list-style-type: none"> Deployed green infrastructure Monitoring framework 	<ul style="list-style-type: none"> High upfront costs deterring private sector participation
Conducting providing support for minimum 3 entrepreneurs	2027-2028	<ul style="list-style-type: none"> Training completion metrics (Number of entrepreneurs trained, materials produced) 	<ul style="list-style-type: none"> Low participation due to perceived irrelevance Limited real-world application of learned concepts

Gantt chart of activities

ACTION TITLE	Q4 2025	Q1 2026	Q2 2026	Q3 2026	Q4 2026	Q1 2027	Q2 2027	Q3 2027	Q4 2027	Q1 2028	Q2 2028	Q3 2028	Q4 2028	Q1 2029	Q2 2029	Q3 2029	Q4 2029	Q1 2030
DEVELOPMENT AND PROMOTION OF HIGH-QUALITY, RELIABLE, AND EFFICIENT PUBLIC TRANSPORT IN THE URBAN AREA																		
❖ Conduct a Transparent Public Procurement Process																		
❖ Develop Charging & Maintenance Infrastructure																		
❖ Implement Fleet Digitalization & Smart Systems																		
❖ Pilot & Scale-Up Deployment																		
❖ Launch Public Awareness Campaigns																		
DEVELOPMENT OF EDUCATIONAL AND RETRAINING PROGRAMS ALIGNED WITH MARKET NEEDS																		
❖ Adoption of new educational programs																		
❖ Training of existing staff																		
❖ Implementation of new programs in the current curriculum																		
❖ Introducing entrepreneurs to new programs in educational institutions																		
❖ Support in providing scholarships to students																		
SUPPORT FOR THE DEVELOPMENT OF ENTREPRENEURIAL ZONES WITH A MODERN CONCEPT, IMPLEMENTING GREEN AND CIRCULAR DEVELOPMENT MEASURES, AND FOCUSING ON NON-TOURISM ACTIVITIES																		
❖ Analysis of the current state of entrepreneurial zones using GIS tools																		
❖ Implementation of green and circular solutions in infrastructure																		
❖ Conducting training sessions and providing support for entrepreneurs																		

7.RISK ANALYSIS AND COMMUNICATION STRATEGY

This chapter outlines the risk analysis by identifying possible risks related to the planned objectives, focusing on the types of risks, their classification by impact level (low, medium, high), and potential measures or actions to minimize their likelihood and consequences.

Risk	Risk Type	Classification	Reduction/Mitigation Actions
Resistance from local businesses to adopting green/circular practices in entrepreneurial zones	Operational/ Social	Medium	- Conduct awareness campaigns showcasing benefits - Offer tax incentives for early adopters
High upfront costs of green infrastructure (solar panels, rainwater systems)	Financial	High	- Secure EU green transition funds - Implement phased investments prioritizing high-impact zones
Skills mismatch between training programs and labor market needs	Strategic	Low	- Regular consultation with industry partners - Adapt curricula based on real-time market data
Low participation in sustainable transport options (e-buses, cycling)	Behavioral	Medium	- Subsidize fares for residents - Improve last-mile connectivity (e.g., bike-sharing near hubs)
Delays in permits/approvals for infrastructure projects, lack of political will	Regulatory	High	- Designate a cross-departmental task force - Streamline permitting processes via digital platforms
Tourist season pressures overwhelming new systems (e.g., transport, waste)	Operational	High	- Implement seasonal demand management (e.g., dynamic pricing) - Expand capacity pre-season
Brain drain of skilled workers to other regions	Strategic	Medium	- Partner with universities on retention programs
Climate vulnerabilities (floods, heat) damaging new infrastructure	Environmental	High	- Climate-proof designs (e.g., elevated structures) - Insurance mechanisms for green assets

To ensure the successful implementation of Dubrovnik’s Integrated Action Plan, a transparent, inclusive, and adaptive communication strategy is essential. This section outlines how stakeholders will be engaged, how information will be disseminated, and how public feedback will shape decision-making.

Objectives of Communication & Consultation

- ✚ Build awareness about the plan’s benefits (economic diversification, sustainability, improved mobility).
- ✚ Encourage participation from businesses, residents, academia, and NGOs.
- ✚ Address concerns and incorporate feedback to improve project design.
- ✚ Ensure accountability through regular progress updates.

Target Stakeholders

By tailoring engagement strategies to each group’s priorities—from profit-driven investors to sustainability-focused NGOs—Dubrovnik can transform its action plan into a shared vision

Group	Communication Needs
Local Businesses	Incentives, regulatory changes
Residents	Impact on daily life, job opportunities
University/Students	Skills programs, research collaboration
Tourism Sector	Transition support, seasonal adjustments
Investors/Developers	Funding opportunities, zoning rules

