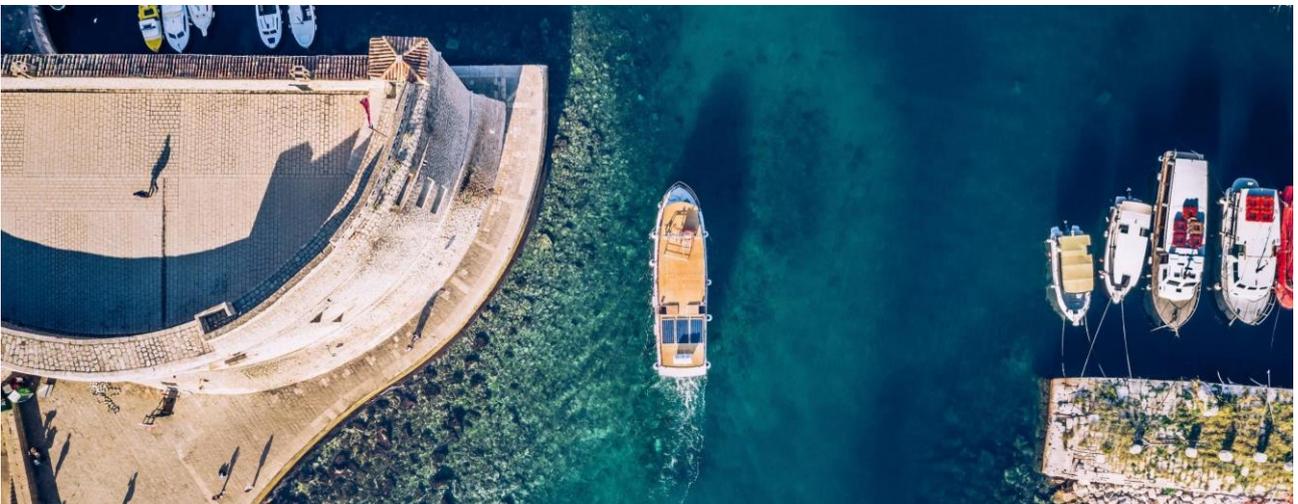




Integrated Action Plan for Dubrovnik as a Sustainable Tourism Destination



GRAD DUBROVNIK
CITY OF DUBROVNIK



RESPECT
THE CITY
POŠTUJMO
GRAD



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1. INTRODUCTION

1.1. Context and Methodology for the Creation of the Action Plan

In July 2019 Dubrovnik Development Agency (DURA) joined *Tourism-Friendly Cities*, a partner network funded by the *URBACT III Action Planning Network* and thereafter created this Action Plan.

By creating action plans, the *Tourism-Friendly Cities* project is aimed at exploring how tourism can be made sustainable in medium-sized cities and at reducing the negative impact of tourism on neighborhoods and areas interested in different types of tourism and its related aspects through integrated and inclusive strategies, while keeping a balance between the needs of the local community, in terms of quality of life and services available, and the promotion of sustainable urban development at environmental, social and economic level.

City of Dubrovnik is a partner city committed to sustainable tourism within and an URBACT network of 9 European cities – Braga, Cáceres, Dun Laoghaire, Venice, Krakow, Druskininkai, Rovaniemi and led by Genoa Municipality.





The Action Plan refers to the period 2023-2025 and it is estimated that the full effects of its implementation will be felt in 2030, complementary to the results of the project *Respect the City*.

The action plan of the project *Respect the City* 2020-2022 was the basis for the creation of this Action Plan, especially the part regarding the analysis of the current situation. On the other hand, the development of strategic objectives is the result of the work of a task force comprising the representatives of the public, private and civil sector. This Action Plan is partly corrective by nature in the sense that it complements certain elements of the *Respect the City* Action Plan which, according to the task force, is insufficiently articulated.

Using a participatory approach in their task forces, i.e. **URBACT Local Groups (ULG)**, the cities taking part in the partner network strived to define a plan of activities which will establish a balance between the quality of life of the local community and the quality of the tourists experience in the destination.

This Action Plan's URBACT Local Group (ULG) is comprised of the following local stakeholders, all of them relevant for the sustainable development of the destination:

- decision-makers, representatives of the executive power
- representatives of the City Council
- Administrative Department for Tourism, Economy and Sea, Administrative Department for Culture and Heritage, Administrative Department for European Union Funds, Regional and International Cooperation, Administrative Department for Urban Planning, Spatial Planning and Environment, Administrative Department for Municipal Utilities and Local Government
- Institute for Restoration of Dubrovnik
- DUNEA – The Regional Development Agency for the Dubrovnik-Neretva Region
- Tourist Guides' Association
- Hospitality Industry Guild
- Dubrovnik Port, Dubrovnik Airport
- Dubrovnik Museums
- Respect the City Project - representative
- Croatian Chamber of Commerce
- Local boards Montovjerna and Grad
- Dubrovnik Tourist Board
- Lazareti Art Workshop
- Deša Dubrovnik Association
- Representatives of the private sector – Lapad Hotel, Dominatto LTD, Direct Booker LTD, etc.



Nine meetings were held in the period from July 2020, when the ULG was formed, until July 2022. In the meetings URBACT guidelines were used for creation of integrated action plans¹ and cooperation with the ULG². The ULG was constantly open to new members.

In the creation of the Action Plan standard methodological procedures for secondary and primary research were used. Data from existing documentation and public sources of information was collected and analyzed and meetings with relevant stakeholders were held. The creation of the Action Plan went through the following phases:

1. Analyzing the current situation and potential opportunities
2. Defining the problem and creating a problem tree
3. Mapping and analyzing stakeholders
4. Defining the strategic framework – visions and objectives
5. Defining operational implementation

1.2. Basic Guidelines for the Creation of the Action Plan

The initiative for the creation of the *Respect the City* project emerged as a response to the fast-growing activities of the tourist sector and tourism trends which, due to a lack of a strategic approach to management, had a step-motherly and exploitative attitude towards the natural and cultural resources of Dubrovnik and its surroundings. This in turn reduced the quality of life of Dubrovnik's citizens. As it is noted in the *Respect the City* project documentation: “The Action Plan (Respect the City) offers a relevant basis for research, analysis, understanding and addressing the issue, as well as a framework for further participatory design and creation of relevant development solutions, programmes, projects, activities and measures, but also for their financing, implementation and monitoring.”³

Mass tourism, or “overtourism” as it was characterized in 2017 in Dubrovnik, has been a threat to the citizens' quality of life for many years. It has posed problems in preserving natural and cultural resources, protecting the environment and economic diversity. Complex issues that destinations under UNESCO protection such as Dubrovnik are facing cannot be solved using isolated, sector-divided policies. This is why this Action Plan is one of the tools for the integration of a participatory and multidisciplinary approach to administering and implementing the *Respect the City* project.

The key idea of the Action Plan is to give specific expression to short-term and long-term actions necessary to change the public discourse related to the role of tourism in development and setting standards for the quality of life beyond profit, with added value for the quality of life of the local

¹ <https://urbact.eu/files/applying-results-framework-integrated-action-plans>

² <https://urbact.eu/urbact-local-groups>

³ *Respect the City* Action Plan for the period 2020-2022



community. In this way Dubrovnik will contribute to the overall aim of the partner network by promoting sustainable urban development at the environmental, social and economic level.

2. ANALYSIS OF THE CURRENT SITUATION

2.1. Croatia – general information

The Republic of Croatia is a Central European and Mediterranean country bordering Slovenia, Hungary, Italy (the Adriatic Sea), Serbia, Bosnia and Herzegovina and Montenegro. Its surface is 56.691 km² and its population is approximately 4.29 million (2011 Census). More than 90% of the population is Croatian. Urban dwellers account for 59.6% of the population (2017) and it is estimated that 85% of the population are Internet users (2020). On 1st July 2013 Croatia became the 28th member state of the European Union. This Action Plan is created for the area of the City of Dubrovnik, a medium-sized city in the Republic of Croatia, a city well-known as a Mediterranean tourist destination.

Figure 1. Dubrovnik on the map



Source: Google Earth



The City of Dubrovnik			
Region	Dubrovnik-Neretva		
Surface	143,35 km ²		
Population	41.671 (2021) ⁴	Population density	297,28 people per km ²
Local committees	32		
Climate	Mediterranean		
Patron saint	Saint Blaise	Official Day of the City	3 rd February
NUTS 2 region	Adriatic Croatia		
Development index	115.637	Development category of the local self-government unit	VIII
Most prominent economic activities	Providing accommodation, catering and restaurant business, commerce, transport, storing goods, construction, administrative and support service activities		
Specific features	Old City, UNESCO World Heritage		

2.2. Basic Geographical, Historical and Transport Features

The City of Dubrovnik, the largest economic, financial and urban center of the Dubrovnik - Neretva County, is located on the eastern coast of the South Adriatic, under the Srđ hill whose underwater part takes up 81% of the Region's surface.

The City of Dubrovnik borders the Dubrovačko Primorje Municipality in the north and the Župa Dubrovačka Municipality in the south. In the North-East it borders Bosnia and Herzegovina and, in the South-West, the open sea. The City also encompasses the Elaphite Islands Šipan, Lopud, Koločep and a series of uninhabited islets. The City of Dubrovnik comprises 32 settlements, which in comparison to other Cities in the Republic of Croatia, is a high number. For instance, the City of Zagreb as the capital of the Republic of Croatia has 73 settlements and 18 times as many inhabitants.

“The space of the City of Dubrovnik can be divided into the following four geographical and physical planning areas:

- the inner city area (south of the Srđ hill, from the headland Kantafig to the headland Orsula);
- Rijeka dubrovačka outer city area (along the bay of the same name, under the southern and western slopes of Srđ hill);
- the Orašac influence area (southeastern part of the Dubrovačko primorje area);
- the Elaphite Islands (permanently inhabited islands of Koločep, Lopud and Šipan as well as several uninhabited islets)”⁵

⁴ First results of Census of Population in 2021., Croatian Bureau of Statistics
https://web.dzs.hr/Hrv_Eng/Pokazatelj/Popis%202021-Prvi%20rezultati.xlsx

⁵ https://dura.hr/wp-content/uploads/2021/02/Program_zastite_okolisa_2018-2021.pdf



With respect to the distribution of inhabitants in the Dubrovnik area, in the existing 32 inhabited areas a trend of moving to outer city areas is visible. This can be explained by high property prices and an increase in tourist demand for accommodation closer to the center.

Figure 2 Territorial organization



Source: The Programme for the Protection of the Environment of the City of Dubrovnik 2018-2021⁶

Figure 3 Spatial Extent and Traffic Infrastructure of the Dubrovnik Urban Area



Source: Study of Sustainable Tourism Development and Carrying Capacity; Institute for Tourism, Zoran Klaić, author

⁶ https://dura.hr/wp-content/uploads/2021/02/Program_zastite_okolisa_2018-2021.pdf



Dubrovnik's development is based on its rich cultural history and its well-known Old City fortification system which has been protected by UNESCO. It is also famous for the Golden Age of the Republic of Dubrovnik, which lasted from the 15th to the 16th centuries. It was the period when both land and sea commerce were at their peak. The Republic of Dubrovnik was considered to be at the forefront of developed countries at the time, due to its system of public political structures, administration and diplomatic relations established all over the world. The prosperity of the Republic of Dubrovnik is also obvious from the construction of its water-supply system and sewage. Both these systems' technical designs were carried out so well they are considered to belong among the pinnacles of human civilization. The Republic of Dubrovnik suffered a strong earthquake in 1667. This event stopped its development and finally, in 1806, when Dubrovnik was occupied by Napoleon's forces, the Republic officially came to an end. Later, from the beginning of the 19th century, until the middle of the 20th century, Dubrovnik was part of the Kingdom of Dalmatia which was ruled by the Austrian Empire and in the following period it was part of the Zeta Banovina, a province which became part of the Croatian Banovina in the Kingdom of Yugoslavia and later part of the Socialist Republic of Croatia in the Social Federalist Republic of Yugoslavia. The Republic of Croatia was founded in 1991.

Dubrovnik's tourism is characterized by a dynamic, growing long lasting trend from 1857 to 1990. The following period was marked by a steady drop with short periods of recovery due to the armed conflicts which took place in the area. The War had significant, long-term effects on the recovery of Dubrovnik's tourism and it was not until 2009 that the results were comparable to those of the best years before the War.

The road system in the City of Dubrovnik consists of state, regional, local, city and unclassified roads. The State Road D8 – the Adriatic Main Road is the most important road connecting Dubrovnik to the rest of Croatia. Maritime traffic is concentrated in the Port of Dubrovnik and during the high season also in the Old City Port and on the Elaphite Islands. Dubrovnik Airport is located in Čilipi and the number of passengers in the past 10 years has always surpassed one million and is steadily growing (except for the COVID-pandemic years 2020 and 2021).

Key traffic hubs in the area are the Dubrovnik Airport and the Dubrovnik Port in Gruž, whereas the majority of tourist flows are directed towards the Old City. The fluidity of traffic is severely overloaded during peak season. Most of the traffic refers to personal vehicles and motorcycles, which means that – despite the perception that there is a large number of tourist buses - cargo and bus traffic have a fairly small impact on traffic overload. Data shows that use of personal vehicles has increased, especially for taxi services. The number of taxi vehicles has increased from 230 (in 2017) to more than 4000 (in 2019). In the summer months motor traffic is approximately 11% heavier than during the other months. From May to October the number of people staying in Dubrovnik triples in comparison to the other half of the year. As a consequence, the fluidity of traffic is significantly reduced. The specific configuration of the inner-city area of the City of Dubrovnik is a limiting factor for further construction of road infrastructure.



When it comes to bicycle traffic, besides the fact that the amount of pedestrian traffic is an aggravating circumstance for bicycle use, Dubrovnik's hilly terrain does not offer many opportunities for intensive use of bicycles and other smaller non-motor vehicles.

2.3. Employment, Education and Social Characteristics

The percentage of employees working in the tourist sector in Dubrovnik is approximately 20%, which is significantly above the Dubrovnik-Neretva Region (15%) and Croatia (6%) average. Data on employment in 2021 shows the dependence of the economy on tourism keeps growing despite the consequences of the COVID-19 pandemic (Table 4).

The official unemployment rate in Dubrovnik is one of the lowest in Croatia (6.9%). However, the youth unemployment rate is high, which is reflected in the fact that one in three unemployed persons is between the age of 15 and 29. The 2011 Census shows that there were 11.000 people younger than 25, whereas there were 14.000 people receiving occasional and social benefits. There were more than 1.500 older people with no revenues and more than 2.000 people on social welfare and other kinds of support.

Demographic trends show that in the 7-year period (2011/2012 and 2018/2019) there has been an increase in the number of primary school pupils and students which can be attributed to changes due to moving. On the other hand, there was a drop in high-school enrolment by 700 (20%) in 7 years which is a key indicator of depopulation. According to the April 2021 data, the current unemployment situation and job openings show that there are 146 more unemployed persons than in March 2021. Also, an increase in the ratio of unemployed vs. employed people is visible as a consequence of the COVID-19 pandemic in 2021.

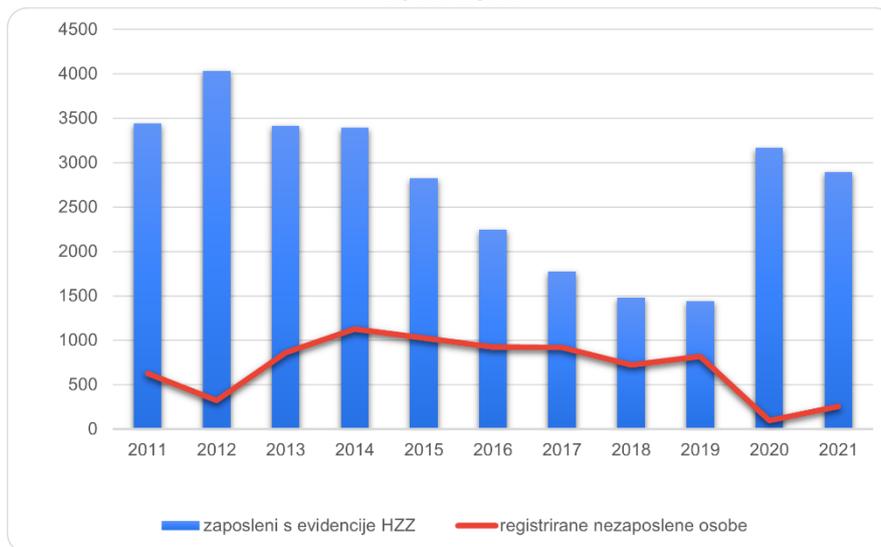
Table 1. Registered Employment and Unemployment 2019-2021

Year (April)	2019	2020	2021
Unemployed	1443	3167	2898
Employed	819	96	257
Job openings per profession	340	90	412

Source: Croatian Bureau of Statistics



Graph 2. Development of Registered Unemployment and Employment in the City of Dubrovnik 2011-2021



Source: Croatian Employment Service

In the City of Dubrovnik education for the tourist sector can be pursued both at high-school and university level: in the Tourism and Hospitality High School Dubrovnik, at the University of Dubrovnik, at the Rochester Institute of Technology and Libertas University (Tourism and Hotel Management branch).

At the moment a regional center for competitiveness in tourism and hospitality is being developed as part of the Tourist and Hospitality High School Dubrovnik. This is a European Union co-funded project the aim of which is to increase and improve the skill set of human resources in the tourist and hospitality sector by establishing programme and employment conditions which will provide opportunities for experience-based learning for pupils in vocational education, teachers and other interested stakeholders. The project is being carried out in partnership with the Dubrovnik - Neretva Region, three vocational high schools for tourism and hospitality in Metković, Ploče and Korčula as well as the Agricultural and Technical School in Opuzen, The University of Dubrovnik, four top-tier hotel chains, Basque Culinary Center as a technical partner, the Center for Entrepreneurship of the Dubrovnik-Neretva County and specialist companies *Callidus* and *Mint Media*. The project demonstrates great potential and is a fertile ground for the development of high-quality sustainable tourism.

2.4. General Economic Trends and the Employment Market

The following analysis of the economy encompasses general economic trends for companies, trends on the employment market and basic indicators of tourist activity.



The development index of territorial units is calculated to measure the level of development and is based on understanding regional policies which encourage the development of the entire territory of the Republic of Croatia.

The data in the following table shows that the area of the Dubrovnik - Neretva Region follows the development potential of its center, the City of Dubrovnik, and is more developed than the Croatian average.

Table 2. Development index of the Dubrovnik-Neretva Region and the City of Dubrovnik

2018	Development group	Average income per inhabitant	Average sources of income per inhabitant	Average unemployment rate	General change in population rates (2016/2006)	Ageing index (2011)	Education level (university-level education, 20-65) (2011)
Dubrovnik-Neretva Region	4	30.904,76	4.848,62	0,1323	101,07	109,4	0,2618
City of Dubrovnik	8	38.130,42	7.394,93	0,0841	103,72	125,0	0,3562

Source: Ministry of Regional Development and EU Funds

The City of Dubrovnik is the economic center of the Dubrovnik - Neretva Region and accounts for 53% of its total income, 58% of tourist traffic and approximately 70% of total income from tourism in the Region. Tourism and tourism-related activities are the basis of the economy in Dubrovnik. Therefore, most of the workforce is employed in companies registered primarily for tourism, wholesale and retail trade and public administration.

Most of the sole proprietorships in the Dubrovnik - Neretva Region are located in the City of Dubrovnik, approximately 40% of the total number of sole proprietorships in the Region. This number correlates with the number of inhabitants and the development of tourism.

Table 3. Structure of Economic Activities in the Dubrovnik City Area on 29th May 2021 according to the National Classification of Activities of the Republic of Croatia (NKD - 2007)

Activity	Number of businesses
Agriculture, forestry and fishing	11
Mining and quarrying	1
Manufacturing	77
Electricity, gas, steam and air-conditioning supply	8
Water supply, sewerage, waste management and remediation activities	9



Construction	203
Wholesale and retail trade, repair of motor vehicles and motorcycles	309
Transportation and storage	163
Accommodation and food service activities	410
Information and communication	85
Financial and insurance activities	1
Real estate activities	149
Professional, scientific, and technical activities	318
Administrative and support service activities	217
Public administration and defense; compulsory social security	0
Education	16
Human Health and social work activities	19
Arts, entertainment and recreation	36
Other service activities	70
TOTAL	2102

Source: Digital Chamber; The Croatian Chamber of Commerce

Table 4. Top five companies in Dubrovnik by number of employees

 ADRIATIC LUXURY HOTELS joint-stock company for hospitality and tourism, travel agent
 PEMO LLC for commerce, hospitality, tourism, transport and services
 LIBERTAS - DUBROVNIK LLC for passenger transport, travel agent (City-owned company)
 DUBROVNIK SUN GARDENS LLC for tourism, hospitality and commerce, tourist agent
 ČISTOĆA LLC for utility services, maintaining surfaces and waste management (City-owned company)
 NAUTIKA LLC for commerce, hospitality and fishing, travel agent

Source: Digital Chamber; The Croatian Chamber of Commerce

2.4.1. Features of Tourism

Dubrovnik, as one of the most popular tourist destinations in the Mediterranean, has seen a steady rising trend in tourist traffic in the past years, i.e., before 2020, when the COVID-19 pandemic hit. Since 2011 the number of overnight stays has increased by more than 200.000.



According to the TOMAS Survey on Attitudes and Expenditures of Tourists in Croatia conducted in 672 Dubrovnik's hotels, 390 units of private accommodation as well as on 435 international and 90 domestic visitors from cruise ships in 2018, the Dubrovnik visitor profile is as follows:

- 42 is the average age
- 46 is the average age in hotels and 38 in private accommodation
- 66% guests with a university degree
- 45% guests with a monthly income higher than 4.000 euros
- 63% guests accompanied by a partner, 20% by family members
- 86% are visiting Dubrovnik for the first time

The primary motives for arrival are rest and relaxation (72%), new experiences (54%), gastronomy (49%), cultural sites and events (44%) and 85% of visitors arrive by plane. It is interesting to note that hotel guests were more interested in visiting local farms, small producers and wine roads whereas those guests staying in private accommodation showed more interest in natural sites and nightlife.

Preservation of the environment was one of the top-rated elements of visitor satisfaction, whereas entertainment, shopping, traffic organization in the City and accessibility of the City for people with special needs received negative feedback. The aforementioned shows that problems of environmental preservation are either not visible for passers-by – which is understandable – or that guests are not sufficiently familiar with the area and their “footprint” on the destination. This might mean that their awareness of the issue is at a low level.

Key interferences to tourist experience that tourists mentioned were: crowded public spaces (17.8%), inadequate waste disposal (10%), unpleasant smell (from dumpsters and trash cans) (7.8%), inability to separate waste (5.6%), traffic congestion (2.2%).

During the research conducted for the creation of the Tourism Development Strategy (2017, Phase 1) local inhabitants were interviewed about their perception of tourism. When asked about the three greatest challenges the City is faced with, the inhabitants recognized the following ones:

1. Quality tourist product satisfying high environmental and aesthetic standards/criteria.
2. Improving Dubrovnik's traffic position and the fluidity of traffic inside the City of Dubrovnik
3. Reducing the seasonal character of tourism

The following development priorities were detected:

1. Better transport connections
2. Improving the tourist offer – it should be of higher quality, more diverse and more original
3. Preservation of cultural heritage and the development of cultural tourism
4. Prolonging the tourist season



It is also important to note that:

- 61% of the area's inhabitants consider tourism to be beneficial to them (44% directly and 17% indirectly) whereas 39% of the inhabitants claim to have no benefits from tourism
- 73% benefit from tourism in their place of residence, 25% near their place of residence and 6% also in/or another Region
- For 60% of those who have direct or indirect benefits from tourism, tourism is an additional source of income, for 23% the main source of income and 17% have no income from tourism

Negative impacts of tourism are most prominent in congested traffic, the lack of parking space and pollution of the sea.⁷

According to the data provided by the Dubrovnik Tourist Boards and the Croatian Bureau of Statistics on average more than 90% of visitors, arrivals and overnight stays refer to international tourists. For the most part tourists arrive from the UK, France, Italy and Austria. The proportion of arrivals in the City of Dubrovnik, when compared to arrivals in the Dubrovnik - Neretva Region, amounts to almost 40%. When arrivals are observed at the City level, a positive trend can be seen and a steady rise in the number of arrivals. E.g., when compared to 2016, in 2019 arrivals increased by 42%, but in the COVID-year 2020, there saw a 85% drop, which translated into 1.222.454,00 fewer arrivals. This in turn pointed to a significant drop in tourism-generated income due to the dominant position of tourism in the City's economy.

Table 5. Basic Indicators of Tourist Flows in the City of Dubrovnik

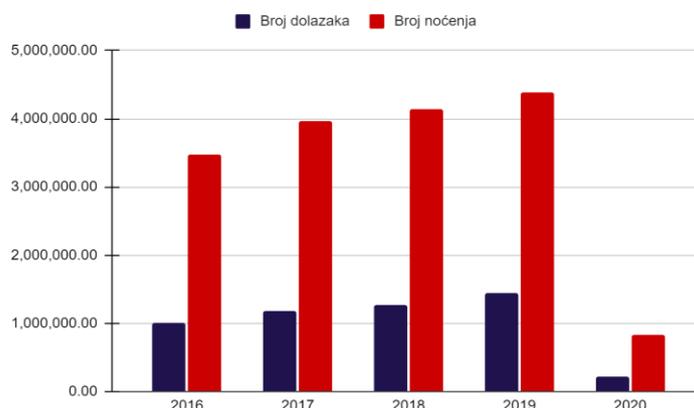
Category	2016	2017	2018	2019	2020
Number of accommodation units - Dubrovnik	13,054.00	14,162.00	14,940.00	15,347.00	15,200.00
Number of beds - Dubrovnik	38,199.00	36,623.00	38,881.00	40,130.00	39,912.00
Number of arrivals - Dubrovnik	1,013,406.00	1,181,916.00	1,272,346.00	1,444,762.00	222,308.00
Number of overnight stays - Dubrovnik	3,483,117.00	3,960,600.00	4,140,142.00	4,377,763.00	823,023.00
Average number of overnight stays per bed	91.18	108.15	106.48	109.09	20.62
Average number of overnight stays per arrival	3.44	3.35	3.25	3.03	3.70
Occupancy of tourist accommodation	24.98%	29.63%	29.17%	29.89%	5.65%
Number of arrivals - Dubrovnik-Neretva Region	1,598,767.00	1,864,114.00	2,014,734.00	2,237,036.00	455,106.00
Number of overnight stays - Dubrovnik-Neretva Region	6,827,837.00	7,712,310.00	8,051,149.00	8,333,783.00	2,407,399.00
Share of arrivals to Dubrovnik in total arrivals in the Dubrovnik-Neretva Region	63.39%	63.40%	63.15%	64.58%	48.85%
Share of overnight stays in Dubrovnik in total overnight stays in the Dubrovnik-Neretva Region	51.01%	51.35%	51.42%	52.53%	34.19%

Source: Dubrovnik Tourist Board and the Croatian Bureau of Statistics

⁷ Locals' Attitudes towards Tourism Development in Croatia in 2018 (Institute for Tourism, 2019)

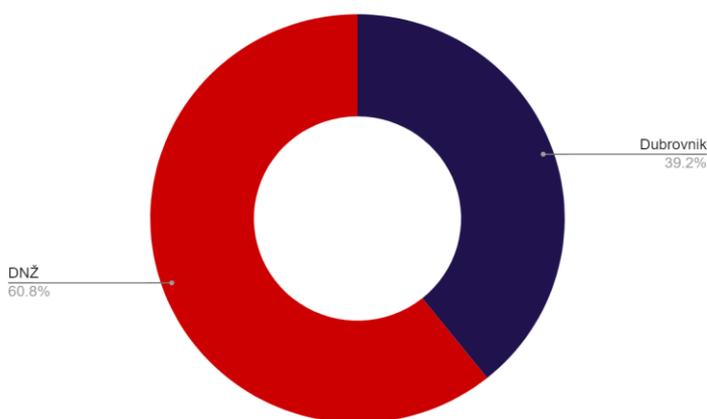


Graph 3. Arrivals and Overnight Stays in Dubrovnik 2016-2020



Source: Tourist Board of the City of Dubrovnik

Graph 4. Share of arrivals in Dubrovnik in Total Arrivals in the Dubrovnik-Neretva Region in 2019



Source: Croatian Bureau of Statistics

Data shows that, from 2016 until 2020, there was a steady rising trend in the number of accommodation facilities in the City of Dubrovnik and since the end of 2019 Dubrovnik has boasted as many as fifteen hotels of the highest category, which means it is the tourist destination with the most five-star hotels in Croatia.



Table 6. Types of Tourist Accommodation Facilities in the City of Dubrovnik

Type of facility	2016	2017	2018	2019	2020
Hotels and aparthotels	47	50	52	50	49
Tourist resorts	1	1	1	1	1
Camps and campsites	4	4	4	3	3
Private accommodation	2996	3414	3797	3956	3668
Hostels	12	14	14	15	16
Other	252	290	327	382	381
Uncategorized facilities	970	1311	1499	1740	1880
TOTAL	4282	5084	5694	6147	5998

Source: Dubrovnik Tourist Board

Cruise ship tourism has a prominent place in Dubrovnik's tourism – from 2001 until 2021 cruise ship traffic quintupled. Most foreign ships on cruises entered the Croatian territorial seas in the Dubrovnik - Neretva Region for the first time, and Dubrovnik Port was their destination in 80% of the cases.⁸

According to the estimates of the Financial Agency which served as the basis for the COVID-score methodology, a scoring system used to evaluate how impacted businesses in different categories of the National Classification of Activities are by the coronavirus epidemic, the highest score (4) was given to businesses in the tourism and hospitality sector and transportation. In these businesses the sharpest drop in revenue (more than 90%) could be expected, which has a significant impact on the post-COVID period in Dubrovnik, a city with tourism as a primary source of income.

2.5. Natural and Cultural Heritage and Protection of the Environment

The City of Dubrovnik has 11 protected natural areas belonging to the following categories: significant landscape, monument of park architecture, forest park, special reserve and natural monument. The most significant natural attraction is the Lokrum Reserve, the third most visited natural heritage site in Croatia. The area of the environmental network NATURA 2000 encompasses approximately 47% of the land territory of the City of Dubrovnik. Twenty-four areas are significant for different species and types of habitats. NATURA 2000 encompasses caves and pits as well as sea caves and underwater landscapes with flowering plants, reefs and undersea grasslands the preservation of which is key for maintaining biodiversity. Even though the creation of management plans for those areas is required by law, these requirements have not been met yet. As the Environment Protection Programme 2018-2021 states, the most serious threats for biodiversity are

⁸ Carić and Mackelworth, 2014; Gračan and Zadel, 2013.



the following: urbanization, unplanned and illegal construction, tourism, traffic, pollution, waste and waste-water, importing invasive species, fires (in the summer, as a consequence of human or natural activity), coastal landscape design and construction as well as creating artificial beaches.

According to the Register of Cultural Property, Dubrovnik has a total of 228 immovable cultural property sites under protection and preventive protection (223 are protected and 5 are under preventive protection). The City as a whole is a cultural and historical monument. UNESCO-protected cultural sites are the area inside the Old City Walls, the Island of Lokrum, the Lazaretto and Fort Lovrijenac and Revelin. The most recognizable trait defining the character of the historical City of Dubrovnik and lending it its specific and internationally renowned look is its most famous monument: the City Walls which completely surround the Old City and are 1940 m long. There is also Minčeta Fort, the Rector's Palace, Sponza Palace, Orlando's Column, St. Blaise's Church, the Cathedral and its treasury, the Dominican Church and Monastery, the Franciscan Monastery, the Jesuit St. Ignatius Church the Big and Small Onofrio's Fountains and the main street, Stradun.

Besides its rich material heritage and extremely valuable spatial resources, it is also important to highlight the intangible cultural heritage. St. Blaise's Feast has been celebrated every year since 972 and, in 2009, it was inscribed on the UNESCO Intangible Cultural Heritage list. The Dubrovnik dialect and Lindo, the dance pertaining to Dubrovnik and its surroundings, are both part of the national intangible cultural heritage list. The Dubrovnik Summer Festival is the most important theatre manifestation in Croatia.

The City of Dubrovnik is located in a zone with low emission values (HR5), but with higher levels of harmful ground-level ozone (O₃).

Pollutants from movable sources are mostly emitted from vehicles, especially personal vehicles (approximately 74%). When sea transportation and the fact that Dubrovnik is a popular cruise ship destination are taken into account, certain projections say that by the year 2050 CO₂ emissions from sea traffic will have increased by 50% to 250%. Most air pollutants from immovable sources are emitted from hotels and public institutions. According to the data from the Croatian National Environmental Pollution Register (ROO), in 2016, from the Dubrovnik Sun Gardens LLC (CO₂) and from the Libertas Rixos LLC (CO₂, NO₂, PM₁₀).

In the context of climate change on the coast and in the coastal area, the greatest risk is posed by the rise of the sea level which could lead to a series of irreparable negative effects. Energy is also one of the most vulnerable sectors when it comes to climate change, and an increase in energy consumption related to cooling is expected. In accordance with the Plan for Adjustment to Climate Change three key challenges have been recognized for the City of Dubrovnik: rising sea levels, urban floods and urban heat islands. Besides the Plan for Adjustment, the City of Dubrovnik has also created the Sustainable Energy and Climate Action Plan for the City of Dubrovnik (SECAP, 2017). However, the plan has not been approved yet.

Due to its out-of-date and poorly maintained infrastructure, Dubrovnik's water-supply system has enormous water losses which amount to 40%. At the beginning of 2020 the water purifier on the



River Ombla started operating, which ensured top-quality potable water for Dubrovnik. The occasional pollution of the Plat source affects the water supply in Zaton, Orašac, the villages further away from the coast and the Elaphite Islands. Dubrovnik itself has 3000 septic tanks.

The uncontrolled development of tourism puts the municipal infrastructure under pressure, especially when it comes to waste management. There are plans for the construction of a waste management center in the Dubrovnik-Neretva Region and at the moment waste is disposed of at the Grabovica landfill. A specific problem Dubrovnik is faced with is the garbage brought by sea currents from countries further south. This waste is then washed ashore. Poor waste management refers mostly to lack of waste separation at the local level and the existence of unauthorized dumps.

2.6. Tourism Development Management

Tourism in the City of Dubrovnik is in the domain of the City authorities, i.e. the Administrative Department for Tourism, the Economy and Sea in cooperation with the Dubrovnik Tourist Board. As for the part of its activities related to tourism, the Administrative department points out the following: participation in the organization of economic and tourist manifestations, encouraging and promoting tourist activities, drafting and implementing documents for the development of tourist activities at City level by cooperating with the Dubrovnik Tourist Board, hospitality businesses, hotels and other organizations, monitoring and current situation analysis in tourism and providing guidelines for improving different forms of sustainable tourism in the City; coordinating activities of all stakeholders from the tourist sector and identifying sources and new ways of funding and lending for tourist offers.

In accordance with the Law⁹ the tasks of the Tourist Board are the following: product development, private and public sector coordination, quality management and planning in tourism, information and research for creating promotional and informative materials, coordination of tourist information centers, tourist signalization system, eVisitor system, distribution (marketing activities), coordination with the regional tourist boards etc.

There are specific examples in the City of Dubrovnik which demonstrate the efforts that the institutions in charge of managing tourism are making in order to achieve the destination's sustainability. One of those efforts is the report of the Global Sustainable Tourism Council. Faced with a constant influx of tourists Dubrovnik had to make important strategic decisions about a series of critical issues related to its sustainability as a destination. Considering the uncontrolled development of tourism, and with the aim of creating a better balance and higher quality of life for the community, in 2019, the City authorities and the Dubrovnik Tourist Board cooperated to create a Global Sustainable Tourism Council Assessment, which clearly demonstrates the City's determination to propel its tourism towards a sustainable future.

⁹ <https://www.zakon.hr/z/342/Zakon-o-turisti%C4%8Dkim-zajednicama-i-promicanju-hrvatskog-turizma>



According to the GTSC, out of a total of 105 indicators, only 12 (11.4%) were estimated as *excellent*, whereas 71% were labeled as *good, but need improvement* (36%) and the remaining 35% were in the *low efficiency* category.

Indicators marked as *high risk* accounted for 8.6%.¹⁰ They are mostly in the *Management* and *Environment* categories. What has been detected as *high risk* in the context of management refers to Supervision, Crisis Situation Management and Sustainability Standards. In the context of the environment, problem areas are greenhouse gas emissions, waste-water management and environment risks.

It is interesting to note that in the *Culture* category, one that analyzes the cultural heritage and attraction protection, visitor management, visitor behaviors, intellectual property and site explanation, no high-risk indicators have been detected. Also, the *Management* category boasts the largest number of indicators marked as *excellent*. It is followed by the *Culture* category.

Furthermore, in the context of cooperation with the task force on the creation of this Action Plan and of the problems that have been detected, it is important to emphasize the standards that GSTC has marked as excellent, i.e. comparable to top-level international practices.

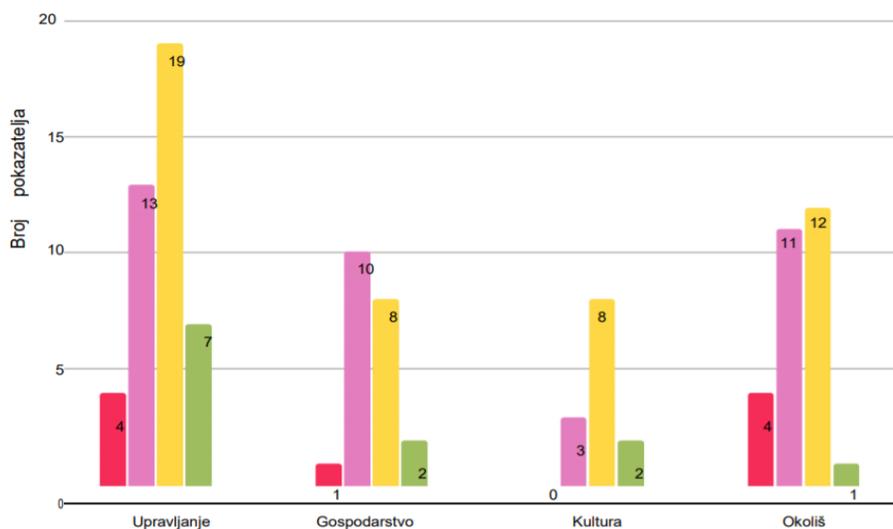
The standards in question are:

- protection of wild plants and animals
- cultural heritage protection
- local employment opportunities
- destination management organization

¹⁰ <https://www.dubrovnik.hr/projekti/gstc-predstavio-završno-izvješće-održivosti-destinacije-za-grad-dubrovnik-rezultat-izvršnih-70postu>



Graph 5. GTSC Destination Sustainability Effect by category ¹¹



Source: GTSC Destination Assessment Dubrovnik

Through interactive work with key stakeholders three priorities have been identified among the 16 risk factors which were found in the GSTC Report: Security and Protection / Traffic and Transportation Control; Support for Local Entrepreneurs; Infrastructure, Environment and Natural Resource Awareness and Waste Water. Certain projects which would address the aforementioned and other priorities have been suggested. These can be used as guidelines and the basis for the creation of a specific action plan.

With regard to the inclusion of citizens in the process of planning and development of tourism, and in accordance with the research on locals' attitudes towards the development of tourism in 2019, the largest number of people surveyed stated that they were neither content nor discontent. It is noticeable that a large number of people surveyed were discontent – either completely or only to a certain extent. When it comes to attitudes towards tourists and different forms of tourist activity, it was shown that interviewees for the most part (almost a half of them) tolerated tourists because of their significance for the local economy.¹²

Furthermore, the City of Dubrovnik invests funds into the integration of smart solutions into its management of the City and tourism development. It is therefore important to highlight solutions such as the application which predicts the number of visitors by using machine learning as a special branch of artificial intelligence. This app aims to estimate the number of people in the historical centre and in its contact area on a specific day.

¹¹ green = excellent (mark 2.26 to 3.00)
yellow = good, but needs improvement (mark 2.00 to 2.25)
pink = low efficiency /medium risk (mark 1.00 to 1.99)
red = no efficiency / high risk (mark 0 to 0.99)
grey = N/A (not applicable to the destination).

¹² Locals' Attitudes towards Tourism Development in Croatia in 2018. Institute for Tourism, 2019.



2.7. Key Findings

The situation analysis for the area of the City of Dubrovnik has encompassed the demographic, social, economic, cultural and environmental image of the City as well as key trends related to tourism and the perception of tourism development with regard to the citizens' quality of life. According to these findings, it can be concluded that the City of Dubrovnik is faced with an aging population and a depopulation trend, characteristic of the EU as a whole. However, according to the projections of the Croatian Bureau of Statistics there are certain indicators that say the number of inhabitants in Dubrovnik has increased by 5%. This data still needs to be confirmed in a new census.

Over the past years there has been an important trend of inhabitants moving away from the inner city area due to an increase in property prices, tourist demand for accommodation and lower quality of life near the center because of a lack of appropriate infrastructure for the local community and the fact that the economy's seasonality dictates the use of space. Dubrovnik's economy is dominated by tourism and most local businesses are related to tourist activities, either in a direct or an indirect manner. Also, the largest number of people are employed in tourism-related businesses.

When it comes to quality of life, there are distinct problems related to traffic, mobility and limitations in movement in space which not only reduce the quality of the City as a tourist destination, but also greatly affect the perception of the City by the inhabitants. For the most part, they tolerate tourism because it is an income-generator.

Overtourism, as tourism in Dubrovnik has been described, puts a lot of pressure on physical planning, natural and cultural heritage and communal infrastructure. Special importance must be given to the fact that the quality of living environment in Dubrovnik – with regard to waste-management and waste-water management – is not at a high level and improvements are necessary.

For the most part, overtourism is the result of non-structured management in tourism. When this situation reached its culmination, City authorities were encouraged to address critical issues related to the destination's sustainability in regard to citizens' quality of life. The GTSC Assessment Report was made for this reason. The Integrated Action Plan is here to complement the GTSC Report and the existing tourism strategies with a participatory process in order to adhere to a sustainable tourism model. The GTSC Report has marked the following categories as *excellent*, i.e. comparable to the best international practices: the protection of wild animals and plants, cultural heritage protection, local employment opportunities and destination management organization. While creating the Problem Tree for IAP, those were precisely the elements identified as key challenges. The Problem Tree created for the purposes of IAP defines three key challenges for sustainable tourism development. These refer to traffic and mobility, managing development and space, environment and heritage. Issues related to traffic and mobility relate mostly to inadequate infrastructure, low integration of smart

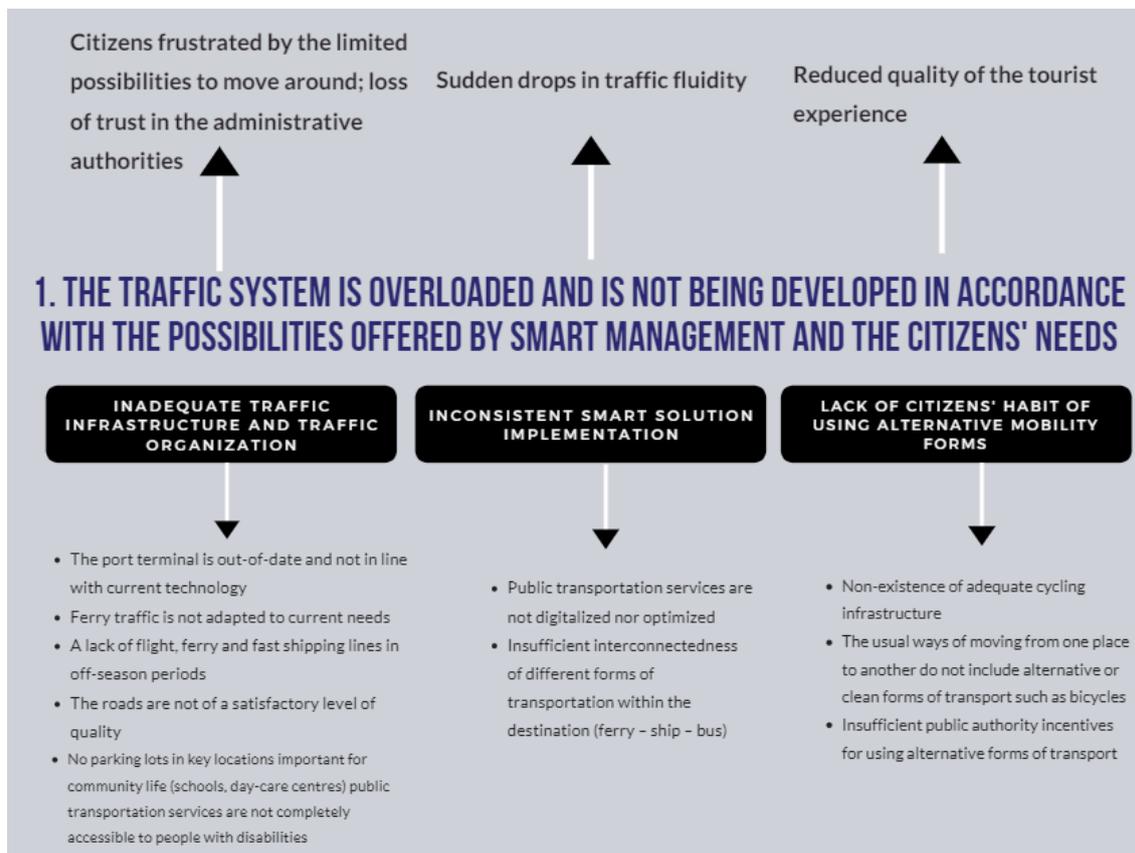


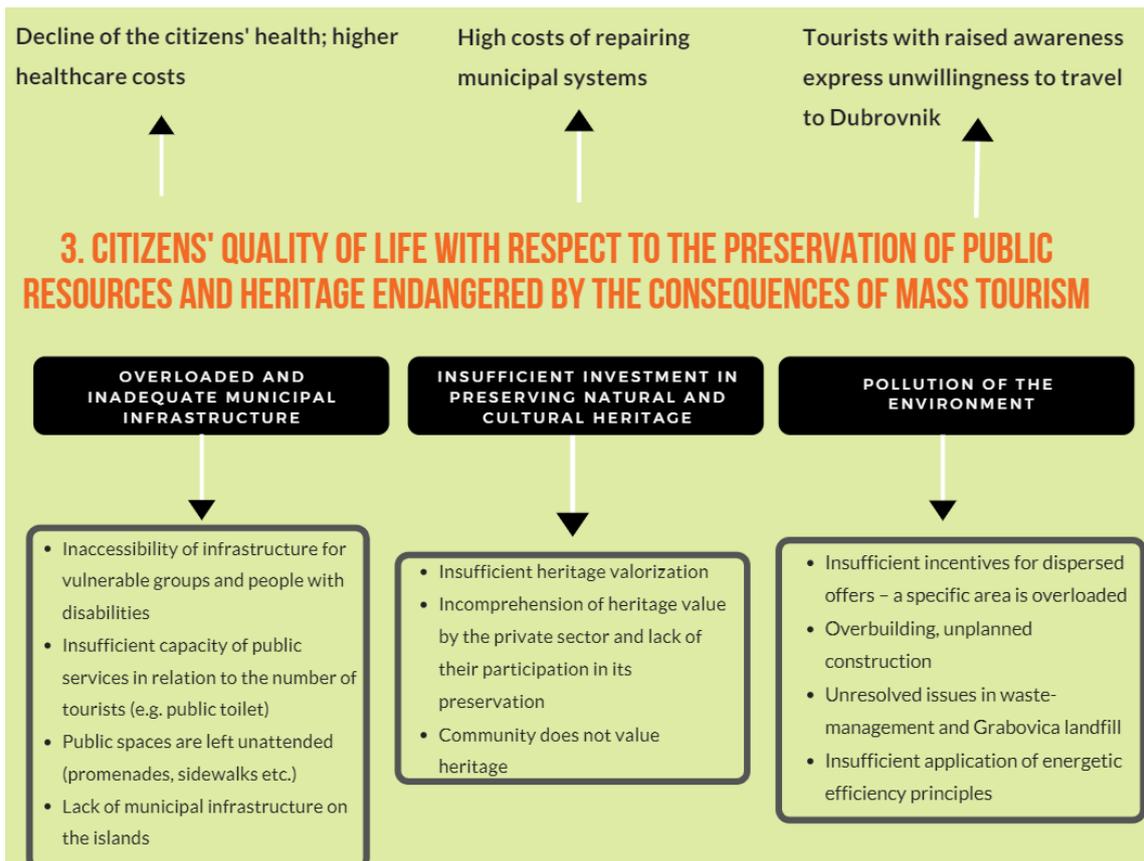
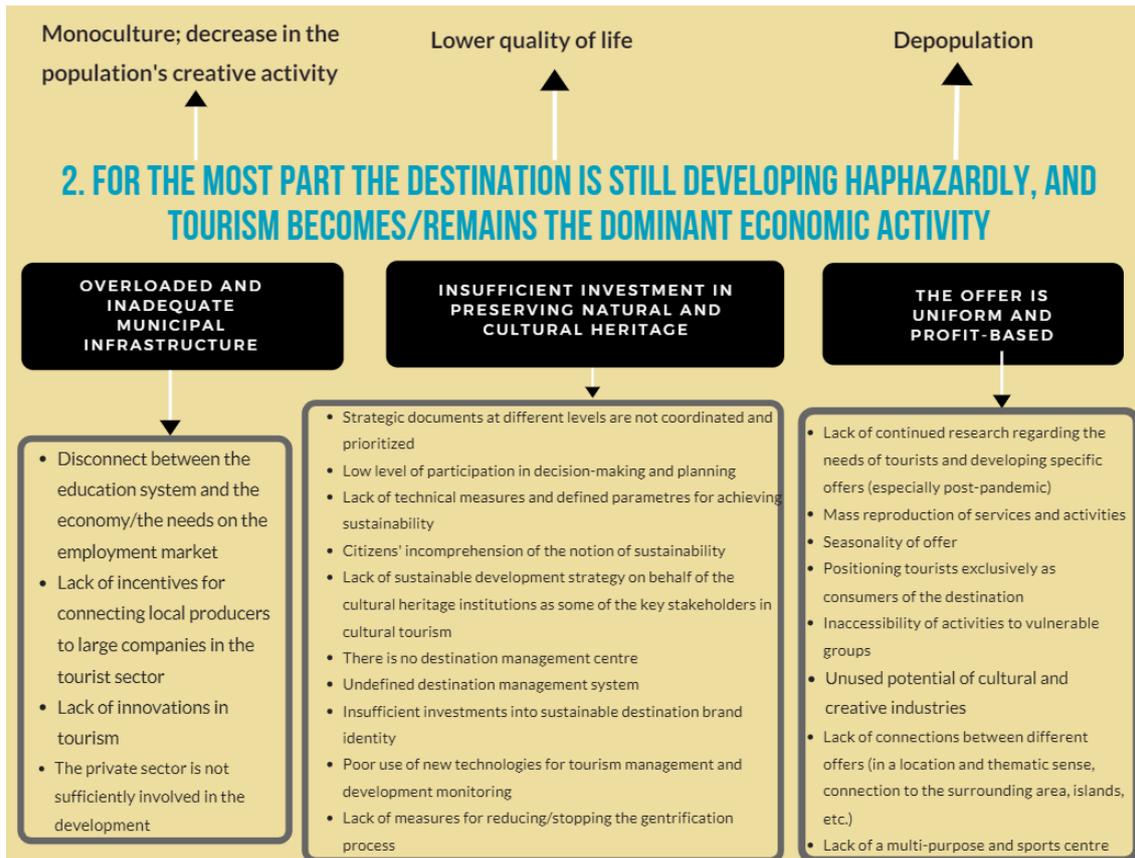
mobility solutions and alternative means of transport. When it comes to managing development in general, issues are detected around unused potential of inter sector cooperation, sustainability is perceived and used as a buzz word and tourism economy is very uniformed and profit-driven. Spatial development in terms of environmental and heritage protection are highly burdened with overtourism and have low intensity of further investments in protection and conservation.



2.8. Development of Integrated Action Plan

2.8.1. Problem Tree







2.8.2. Small Scale Action

Overview of the Small-Scale Action

As one of its top priorities in paving the way toward sustainable urban development, the City of Dubrovnik has defined solving the mobility issues.

Those issues predominantly happen during tourist season and on particular routes, like the one leading from Port to the Old town. The high dense traffic happens not only because of the cruises (which disembark thousands of people who then take the buses to the Old town), but also because the main bus station and taxi stations are situated in the nearby area of the Port and many citizens commute along the same route. Mentioned jams happen almost every day, and cause not only inconvenience for the citizens and tourists, but significant air pollution and damage of infrastructure.

The name of the abovementioned area is Gruž, and it has been recognized as a crucial area in the City where sustainable development is necessary. The option of using the maritime way for transportation of passengers has been debated many times in the past, but never realized until today. On the other hand, the plan for polycentric urban development of Gruž, which has been anticipated in the City strategy 2030, offers an opportunity for introduction of the new intermodal transportation systems via those unused maritime routes, in order to unburden City road infrastructure and consequently reduce CO₂ emissions and pollution.

Goals of the Small-Scale Action

1. Sustainable management of mobility issues during tourist season
2. Reduction of negative environmental impact
3. Introduction of new service convenient for both residents and visitors
4. Promotion of innovative mobility solutions for sustainable development of the city

Stakeholders involved in the co-creation and implementation phases

1. Residents, general population

Area of Gruž is very important to residents of Dubrovnik, since it is located relatively near the west entrance to Dubrovnik and acts as the linkage between the highly populated suburban area of Mokošica (over 20.000 people) and the down-town area. Furthermore, Gruž is the area where all major transportation hubs are located, such as local and international port, main bus station, main taxi station, which make this area extremely burdened with traffic, crowds and infrastructural impact. All mentioned facts reflect the importance, convenience and usage of Gruž infrastructure and make residents our main stakeholder in proceeding with SSA. Residents will be offered a free pilot boat route from Gruž to the Old town, and their opinion about this possibility will be crucial in drawing the final conclusions. Also, within the SSA we plan to conduct the survey on the residents'



opinion on sustainable mobility improvement, which will help us in defining the best possible solution for making this highly loaded area more suitable for everyday living.

2. **Visitors, tourists**

As mentioned above, since all main transportation hubs are located in Gruž, visitors of the city are also impacted by the traffic jams and problems which appear (especially) during the tourist season. This being said, we want to include them in our pilot SSA by offering an alternative means of transportation to get to the number one tourist attraction - Old City. Since the free route will be offered to everyone interested, we plan to get the feedback form the users of the pilot boat route and see how visitors feel about this different transportation scheme and does it ease their stay in Dubrovnik.

3. **Institutions- City of Dubrovnik and institutions; companies**

City of Dubrovnik government and all companies or institutions are directly or indirectly tackled and involved in decision making on traffic, mobility and sustainable development of Dubrovnik. This is why the *Respect the City* project was initiated by the City, gathered all important stakeholders and applied a participative approach in making an action plan and future activities. There were many discussions on the possibility of using the maritime routes for public transportation, even some private attempts, but there was never a dedicated, functional route realized. During our SSA pilot action, City and relevant institutions will be involved through survey, for the purpose of integrating the SSA in our IAP.

4. **Tourism service providers**

Like in many Mediterranean countries, tourism relies on micro, small and medium enterprises, which provide all sorts of services for the visitors. In our case, we will survey the tourism service providers about the possibility of introducing a maritime route from Gruž to the Old town, see how they feel about it, and hear whether they find it interesting and appealing, but also useful in the sense of transformation of the modality transportation and introduction of new maritime vehicle.

Milestones and Timeline

1. Development of the research tools and methods (July 2021); Surveying of the residents and visitors, analysis of the results (August, September 2021)
2. Launch of the new pilot route; testing and promotion (August, September 2021)
3. Analysis of the pilot period and integration with Action plan (September, October 2021)



Results of the pilot action

The pilot action in Dubrovnik started on July 27th as planned - on Fridays and Saturdays until September 4th 2021. The external boat service was engaged in order to operate on the route Old Town port - Port Gruž - Old Town port, twice a week with a scheduled departure at 7:30AM, returning from Gruž at 9:30 AM. One additional evening ride was introduced - on August 7th intentionally, due to two cultural/social events happening in Gruž. For our SSA, two conventional/diesel boats were used and the main intention was to investigate whether there is interest from citizens and visitors to use the maritime route on the very frequent and busy direction Old town - Gruž and vice versa instead of conservative road transport, but also to see how the whole idea would fit into *Respect the City* programme and would we benefit from activating and integrating maritime transportation in regular public transportation system. Overall, more than 200 people used the 14 back-to-back rides, 47% of which were foreigners. Furthermore, the survey was conducted among the users of the boat (150 passengers filled the survey) during the entire course of SSA.

The general review of SSA in Dubrovnik is that the maritime route was extremely well accepted among both visitors and citizens. The direction from the old town to Gruž was less used than the returning one, whilst the operating hours were unacceptable to the part of interested users, and they wished the boat would run more frequently and in the afternoon hours. Based on all the data coming from SSA, it is observable that the maritime route, operated by a faster, electric vehicle would definitely be consumed by visitors and citizens, especially during busy and loaded summer months. Not only would this route help in unburdening already packed roads and (once environmentally friendly vehicles are acquired) reducing carbon footprint on nature, but the experience of the sea ride and comfort would make it attractive and efficient.

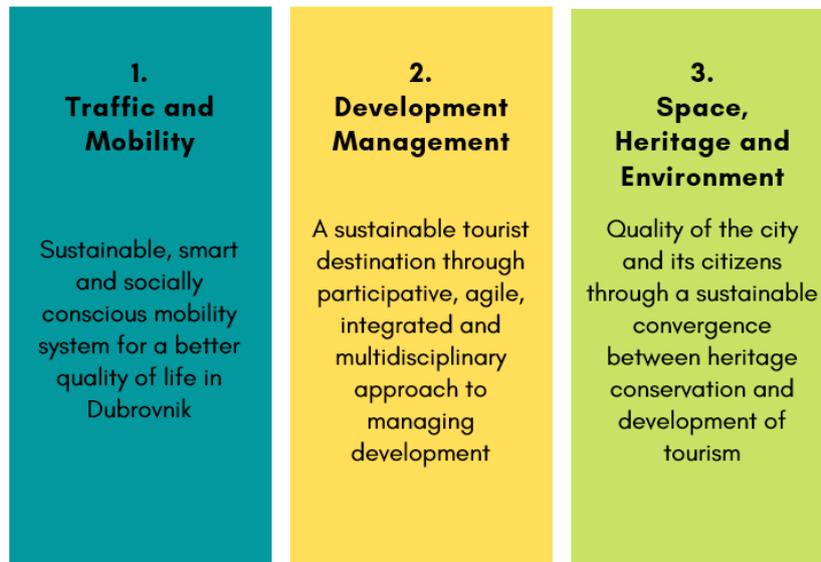


STRATEGY

3.1. VISION

A city comfortable to live in, responsible to all its citizens, a city developing in a sustainable way, using modern digital technologies in an innovative and creative economy, efficient infrastructure, urban mobility and responsible tourism. A city proud of its history, focused on a safe and responsible future. Dubrovnik is a city that accepts everyone and excludes no one. A city of equal opportunities, a city that has utmost respect for every guest, but at the same time a city with a focus on every one of its citizens, regardless of the part of the city they live in.

3.2. Specific Objectives and Measures



Key challenge to be tackled is meeting both the citizens' needs for a more citizen-centered approach to development and the city's need for a transformation to a more sustainable and responsible tourist destination. Execution of the Action Plan is expected to bring about the following results:

1. Sustainable, smart, socially conscious mobility system in Dubrovnik with optimized traffic flow based on adequate traffic infrastructure and improved/smart traffic management which meets the needs of both citizens and tourists
2. Transformation to a sustainable tourism destination which manages its development using a participative, agile, integrated and multidisciplinary approach and strongly relies on intersectoral cooperation
3. Improved quality of life of citizens, through preservation of public resources and natural and cultural heritage and sustainable and responsible development of tourism



3.3. Action Plan

Objective 1: Traffic and Mobility

Introduction of a sustainable, smart and socially conscious mobility system for a more livable and sustainable future, and resolving challenge of traffic system being overloaded and not being developed in accordance with the possibilities offered by smart management and the citizens' needs, specifically focusing on resolving three burning challenges detected by ULG members:

1. *Inadequate traffic infrastructure and traffic organization*
2. *Inconsistent smart solution implementation*
3. *Lack of citizens habit of using alternative mobility forms*

1.1 - Improvement of traffic infrastructure and traffic organization	
Action 1.1.1	Maritime traffic management - coordination between cruise ships - port - public administration service providers
Action 1.1.2.	Traffic management within the city center (Contact zone) supported by traffic cameras and scanners
Action 1.1.3.	Management of road traffic - limiting tourist busses from entering within Old Town (City center / Contact) area while supporting tourist use of public transport mechanisms
Action 1.1.4.	Introducing new public transport bus line - Gruž - Lapad
Action 1.1.5.	Digital Bot - Robot Assistant App
Action 1.1.6.	Introducing smart traffic lights with implemented sound signals for individuals with disabilities
Leading organization	City of Dubrovnik
Implementing organization	DURA, Dubrovnik Port, Libertas Dubrovnik Ltd. (city companies) Faculty of Transport and Traffic Sciences
Timescale	All activities until 2025
Indicators	Action 1.1.1. - New maritime traffic management system in place Action 1.1.2. - smart AI-based solutions introduced for managing traffic inside the city center Action 1.1.3. - New road traffic management system – scheduled tourist buses inside City center, increase in public transport usage Action 1.1.4. - bus line Gruž - Lapad introduced Action 1.1.5. - 1 Digital Bot Assistant App released and available for city



	<p>visitors</p> <p>Action 1.1.6. - Smart traffic lights with implemented sound signals for individuals with disabilities implemented within all traffic lights in City of Dubrovnik</p>
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1.2 - Implementation of integrated smart solutions within public transport sector	
Action 1.2.1.	<p>Upgrading local public transport service by introducing:</p> <ol style="list-style-type: none"> 1. Bus station audio and visual announcements 2. Ticket online sale platform 3. Touchless ticket payment 4. Introducing more bus line options 5. Installation of display panels that provide information on bus network and timetables 6. Braille display panel implemented that provide information on bus network and timetables 7. Upgrade accessibility of bus stations
Action 1.2.2.	<p>Smart Ticketing System integrating public transport and parking within the city area Purchase of electric buses for public transport</p>
Action 1.2.3.	<p>Purchase of electric buses for public transport</p>
Leading organization	City of Dubrovnik
Implementing organization	City of Dubrovnik Libertas Dubrovnik Ltd., DURA (City companies)
Timescale	<p>Activities 1 & 2 - until 2025.</p> <p>Activity 3 - long term until final completion, until 2030.</p>
Indicators	<p>Action 1.2.1 - local public transport service upgraded: bus stations audio and visual announcements, online ticket sale platform and touchless ticket payment available, new bus lines added, display panels with information on bus network and timetables installed inside the buses and on frequent bus stations, upgrading accessibility of bus stations in regard to lightening sidewalk at the bus entrance, re-placing bins and benches to a more appropriate position, and similar.</p> <p>Action 1.2.2 - Public transport, parking within city area and 'Park 'n' Ride' are all integrated within 1 Ticketing system/platform and is available as added service within DU Card and/or separately as one integrated card for a 24 and/or 48 and/or 72 HR service.</p> <p>Action 1.2.3 - electric buses added to the public transport bus fleet</p>



1.3. - Promotion of benefits of alternative mobility usage	
Action 1.3.1.	Awareness campaign to promote benefits of public transport usage
Leading organization	City of Dubrovnik
Implementing organization	Libertas Dubrovnik Ltd., DURA (city company) External PR service company
Timescale	Until 2025.
Indicators	Action 1.3.1. - Per 1 awareness campaign launched and conducted in 2023, 2024 and 2025.

Objective 2: Development management

Transform the city into a sustainable tourist destination through participative, agile, integrated and multidisciplinary approach to managing development and reliance on greater intersectoral cooperation, specifically focusing on resolving three burning challenges detected by ULG members:

1. *Unused intersectoral cooperation potential*
2. *Sustainability does not enjoy genuine support and understanding among all stakeholders at the operational level*
3. *The offer is uniform and profit-based*

2.1. - Strengthening cooperation between education system, citizens, and local authorities	
Action 2.1.1.	Improve cooperation of local authorities and education system to enhance responsiveness to labor market needs and continue cooperation in forming The Regional Centre of Competence in Hospitality and Tourism in Dubrovnik
Action 2.1.2.	Participatory budgeting model as a response to tourism-related challenges - citizens minimizing tourism effects and enhancing quality of life
Leading organization	City of Dubrovnik
Implementing organization	City of Dubrovnik, University of Dubrovnik
Timescale	Until 2025.



Indicators	<p>Action 2.1.1:</p> <ul style="list-style-type: none"> - strengthened cooperation of local authorities and educational institutions; - continuation of providing scholarships, with a focus on crafts sector - approx. 70 yearly - supporting internship programmes for students in Dubrovnik <p>Action 2.1.2:</p> <ul style="list-style-type: none"> - Participatory model created that is funded from tourism income and is focused on minimizing tourism challenges on citizens quality of life; implemented once a year
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2.2. Stakeholders co-create and cooperate at operational level	
Action 2.2.1.	Development of a Web Platform that presents Dubrovnik and its surrounding area as one 'tourist destination' - <i>"Around Dubrovnik"</i>
Action 2.2.2.	Improvement and coordination of County tourist boards in creating a joint travel package - 'Dubrovnik and its surrounding area' as a unified offer
Action 2.2.3.	Creation of Destination Management Center to enhance synergy between public and private destination management
Action 2.2.4.	Development of a 'Digital Twin' - a Digital Dubrovnik platform collecting and providing real time information for citizens and visitors
Action 2.2.5.	Investment in new public spaces for citizens; audio and Braille displays implemented for individuals with disabilities
Action 2.2.6	Renewing and revitalizing existing infrastructure in open public spaces in Dubrovnik, with a focus on Old Town
Action 2.2.7	Development of an Integrated City Events calendar, comprehending all existing media platforms managed by local institutions
Leading organization	City of Dubrovnik
Implementing organization	City of Dubrovnik, Dubrovnik Tourist Board, local tourist boards from Dubrovnik - Neretva County, DURA
Timescale	All activities until 2025; activity 2.2.5. continuously until 2030.
Indicators	Action 2.2.1 - new web platform is launched and is co-created and co-managed by private and sector simultaneously. Action 2.2.2 – new joint travel packages created with other local tourist



	<p>boards from the County</p> <p>Action 2.2.3 - Destination Management Center established</p> <p>Action 2.2.4 - 'Digital Twin' platform is created that collects/provides real time information to citizens and visitors, including real time traffic information on Dubrovnik-Airport relation</p> <p>Activity 2.2.5. - new public spaces created for citizens; public space areas refurbished and enhanced; audio and Braille displays implemented in all public areas for individuals with disabilities</p> <p>Action 2.2.6. - existing infrastructure in open public spaces in Dubrovnik is renewed and revitalized in cooperation with citizens, phase I focused on Old Town Dubrovnik</p> <p>Action 2.2.7 - integrated City Events Calendar created</p>
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2.3. - Tourism offer is sustainable and diversified	
Action 2.3.1	<p>Education of entrepreneurs in tourism in</p> <ol style="list-style-type: none"> 1. traditional souvenirs making 2. sustainable tourism 3. tourist needs and expectations
Action 2.3.2	Connecting local producers and service providers
Action 2.3.3	<p>Creation, expansion and/or improvement of bicycle and pedestrian infrastructure / lungo mare:</p> <ol style="list-style-type: none"> a. pedestrian infrastructure connecting Hotel Kompas and Orsan b. pedestrian & cycling track Rijeka Dubrovačka - Kantafig c. pedestrian & cycling track lungo mare Dubrovnik - Konavle d. cycling track in Gornja sela and islands of Šipan, Lopud, Koločep e. pedestrian infrastructure - Old Watercourse route – Nuncijata f. pedestrian infrastructure – Park Gradac - Čingrija
Action 2.3.4	Creation of waterpolo museum
Action 2.3.5	Construction of new multifunctional arena
Action 2.3.6	Hop-on-hop-off city tour „Around Dubrovnik“
Action 2.3.7	Building the infrastructure for a cable car Gruž - Srđ
Action 2.3.8	Digitalization of cultural heritage (VR tours in museums, QR codes on city



	information panels, audio and Braille displays implemented, I Beacon project)
Leading organization	City of Dubrovnik
Implementing organization	City of Dubrovnik, Dubrovnik Museums, DURA
Timescale	Activities 2.3.1.; 2.3.2.; 2.3.4., 2.3.5., 2.3.6., 2.3.7 - until 2025. Activities 2.3.3. - until 2030.
Indicators	<p>Action 2.3.1 - Training sessions, workshops and lectures organized for entrepreneurs in tourism sector on following topics - creation of traditional souvenirs, visitor needs & expectations on sustainable tourism</p> <p>Action 2.3.2 - Encouraged collaboration between local producers and service providers by organizing at least one relevant event per year</p> <p>Action 2.3.3 - Created, expanded and/or improved expansion and/or improvement of bicycle and pedestrian infrastructure / lungo mare:</p> <ol style="list-style-type: none"> a. pedestrian infrastructure connecting Hotel Kompas and Orsan b. pedestrian & cycling track Rijeka Dubrovačka - Kantafig c. pedestrian & cycling track lungo mare Dubrovnik - Konavle d. cycling track in Gornja sela and islands of Šipan, Lopud, Koločep e. pedestrian infrastructure - Old Watercourse route – Nuncijata f. pedestrian infrastructure – Park Gradac - Čingrija <p>Action 2.3.4. - Waterpolo museum JUG opened</p> <p>Action 2.3.5. - Multifunctional arena/sports center built</p> <p>Action 2.3.6. - Hop-on-hop-off city tour „Around Dubrovnik“ introduced</p> <p>Action 2.3.7. - Infrastructure for a cable car Gruž – Srđ is built</p> <p>Action 2.3.8. - Digitalization of cultural heritage is implemented:</p> <ol style="list-style-type: none"> a. VR tours in museums b. QR codes on all city information panels c. Audio and Braille displays implemented in all cultural and public areas for individuals with disabilities d. I Beacon project implemented

Objective 3: Space, Heritage and Environment

Improve overall quality of life of Dubrovnik citizens through a sustainable convergence between heritage conservation and development of tourism and resolution of challenges imposed by mass tourism, specifically focusing on resolving three burning challenges detected by ULG members:



1. *Overloaded and inadequate municipal infrastructure*
2. *Insufficient investment in preserving natural and cultural heritage*
3. *Pollution of the environment*

3.1. Communal infrastructure enhanced and made more accessible	
Action 3.1.1	Additional parking lots near public service providers (kindergartens, medical centers and similar)
Action 3.1.2	Construction of accessible public toilets (emphasis on islands and support to individuals with disabilities)
Action 3.1.3	Re-defining urban city areas and development of urban development plan for historic center
Action 3.1.4	Acquisition of drones for emergency deliveries and other emergencies (e.g. For Croatian mountain rescue services use, prevention of fires, etc.) within Elaphiti islands
Leading organization	City of Dubrovnik
Implementing organization	City of Dubrovnik
Timescale	Until 2030.
Indicators	<p>Action 1 - number of parking spaces near public service providers (kindergartens, medical centers) increased by 25%</p> <p>Action 2 - Public toilets accessible to people with disabilities, number of accessible toilets on islands increased</p> <p>Action 3 – urban city areas are re-defined and urban development plan for historic center is developed</p> <p>Action 4 – up to 5 drones for emergency deliveries and other emergencies within islands acquired</p>

3.2. - Investment in preserving natural and cultural heritage	
Action 3.2.1	Enhanced urban greening by increasing number of green areas in Dubrovnik; and creation of urban greening plan for Dubrovnik and Lokrum area
Action 3.2.2	Creation of green space cadaster including both private and public spaces



Action 3.2.3	Refurbishment of Gradac Park
Action 3.2.4	Digitization of museum archive
Leading organization	City of Dubrovnik
Implementing organization	City of Dubrovnik Vrtlar Ltd. (city company) Dubrovnik Museums
Timescale	Until 2025.
Indicators	Action 3.2.1 - Urban greening projects designed and implemented; urban greening plan for Dubrovnik and Lokrum adopted Action 3.2.2 - Green space cadaster that comprises of both public and private spaces created Action 3.2.3 - Gradac Park refurbished Action 3.2.4 - City museum archive digitalised

3.3. - Decreasing pollution of the environment	
Action 3.3.1	Continuation of replacement of conventional street lights with LED lights
Action 3.3.2	Increasing the number of street waste containers and smart BigBelly bins
Action 3.3.3	Organization of community clean-up campaigns (both on land and sea)
Action 3.3.4	Installation of environmental sensors (humidity, light, noise, heat and air pollution sensors, etc.)
Action 3.3.5.	Defining and implementing activities contributing prevention of landfills (eg. educational campaigns)
Leading organization	City of Dubrovnik
Implementing organization	City of Dubrovnik DURA, Čistoća Ltd. (city companies)
Timescale	Until 2025.
Indicators	Action 1 - all conventional street lights replaced with LED lights Action 2 - number of street waste containers and smart BigBelly bins increased by 50% Action 3 - community clean-up campaigns organized on a yearly basis on different land & sea areas Action 4 - Environmental sensors installed in all green City areas Action 5 – Activities contributing prevention of landfills defined and



	implemented
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3.4. Implementation and Monitoring

3.4.1. Responsibility for Implementation and Monitoring

The city of Dubrovnik in its self-governmental remit has the tasks of local importance that directly address the needs of citizens. Tourism is in the domain of the city's Department for Tourism, Economy and Sea. The administrative department cooperates with the Dubrovnik Tourist Board to set a common approach to tourism management and development. It will be their direct responsibility to implement the Integrated Action Plan for Dubrovnik. The actions stated in the Integrated Action Plan will be prioritized, scheduled and executed in the coming period with own financial resources and/or through EU grants. Majority of the actions will necessitate other stakeholders' participation or support and their engagement will be coordinated by the Department for Tourism, the Economy and Sea. Engagement of relevant city companies will be essential in execution of the majority of actions. The implementation of the actions will therefore become part of the day-to-day work of the local government officers.

The City of Dubrovnik Development Agency DURA will be the institution responsible for monitoring and control of the implementation process. Outcomes of monitoring and controlling, including recommendations on adjustments, will be analyzed and evaluated to ensure actions are meeting set objectives and delivering the expected benefits.

3.4.2. Reporting

As the institution responsible for monitoring, the City of Dubrovnik Development Agency DURA will perform yearly reviews of implementation of the Integrated Action Plan to reflect on the progress made over the course of the preceding year. It will evaluate the effectiveness of implemented solutions against agreed performance indicators and provide City decision makers with essential feedback to allow them to, where appropriate, modify the Plan to better meet its stated objectives within the planned schedule. The progress will be communicated to the ULG members on a continuous basis and their further cooperation and engagement is planned and expected.



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