

The Case Study of Urban Regeneration with Greening Sustainable Development of Lake Mladost in Republic of N. Macedonia

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Theme

6. Sustainable Cities: 6C. Urban regeneration of vulnerable neighborhoods

Abstract

The City Veles is located in the central part of the Republic of North Macedonia, in the middle course of the river Vardar and the main magistral Transport Corridor 10 of the Balkan Peninsula along the Moravian-Vardar valley, which gives it special importance and significance macro-location.

The city of Veles has good connections and the favorable geographical location of the main roads and magistral roads, developed the city with construction of a very large number of industries and agricultural production industries. The industries led to a major air pollution and soil pollution in the City Veles, which ultimately led to reducing the population in the city. The City of Veles as a shriking city, needs to follow the trend of new sustainable green way in order to have revitalization and modernization of the green capacities of the city and especially the lake Mladost which is becoming more popular eco-touristic location among young people.

In this scientific paper specified will be sustainable green approach towards the Lake Mladost in Veles, as a catalyst for new innovative ideas for growth-centered planning in the shrinking city Veles. The Case Study of the revitalization of the Lake Mladost, as a bio-economic defined potential for sustainable development. The main objectives of the study is increasing opportunities for entrepreneurship development and human employment, creating conditions for encouraging domestic and attracting foreign direct investments; stimulating innovative concepts, safeguarding biodiversity, improving the sustainable environment and development of eco-tourism by development of the Eco-Camp facilities following the area of the Lake Mladost in Veles. The results of this scientific paper will be analyzing the conditions, architectural design and the possibilities of the green architecture and green infrastructure of the eco-camp in lake Mladost, especially following the revitalising efforts towards making bio-economic tourism influences in revitalization of the city Veles.

1. INTRODUCTION - LOCATION OF THE CITY VELES

City Veles is located in the central part of the Republic of North Macedonia: on a strategic location at the main Magistral Transport Corridor of the Balkan Peninsula along the Moravian-Vardar valley at the middle course of the river Vardar, connecting the City Veles with the Capital City Skopje which gives it special importance and significance of the macro-location. Veles is positioned on one of the main crossroads in Macedonia, road and rail traffic systems. (Image 1)

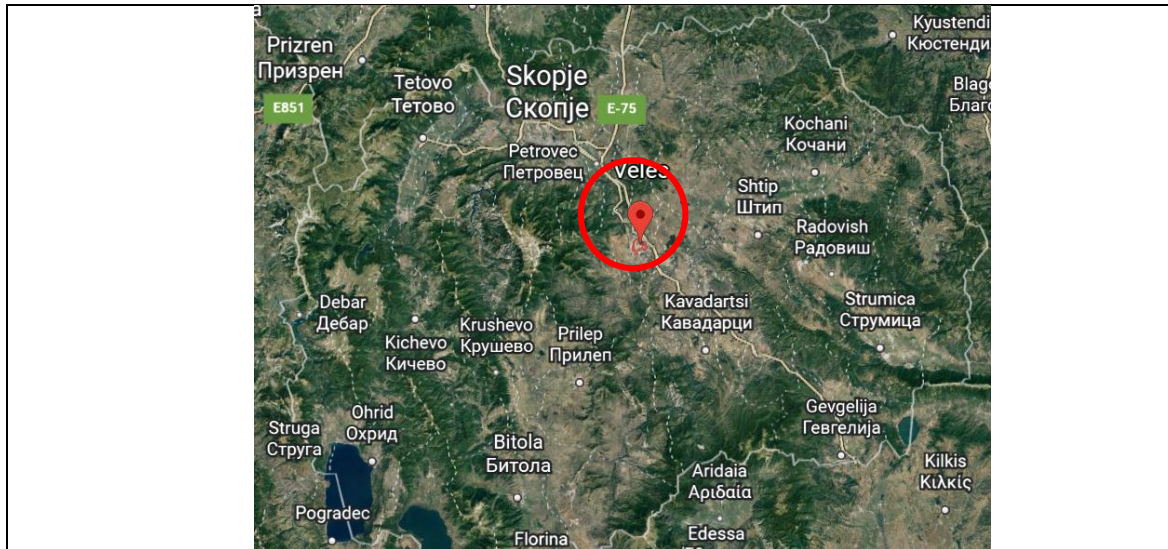


Image 1. Position of the City Veles, Source: Google Earth 2020 and Author

In the development of the City Veles, it has become a city which is rich in cultural, historical and traditional buildings infrastructure, as well as development of industrial facilities infrastructure. The most important archaeological site Stobi is located in close proximity of the city Veles, which is important for cultural tourism development of the city Veles. The geographical position of the City Veles is positioned around the banks of the biggest river Vardar in Macedonia. (Image 2)



Image 2. City Veles and the Archaeological City Stobi located in close proximity of the city Veles, Souce: www.discoveringmacedonia.com

2. INDUSTRIAL DEVELOPMENT OF CITY VELES

The good connections and favorable geographical location of the main magistral roads with city of Veles, created development of the city with opening very large number of industries and agricultural production industries in the 20th century.

City Veles became shrinking city after closing of the majority of the industries which were leading to a air pollution and soil pollution in the City Veles, which ultimately led to reducing the population of the city Veles. (Image 3) The industry was the main factor for economy in the City Veles, and now it needs a new sustainable way of increasing the economical potential of the city.

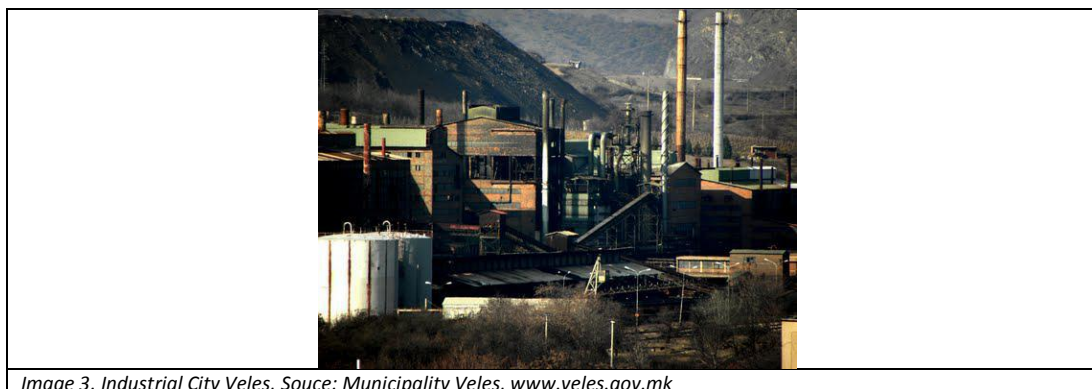


Image 3. Industrial City Veles, Source: Municipality Veles, www.veles.gov.mk

3. DEMOGRAPHY AND POPULATION OF THE CITY VELES AS A CITY

Demographic characteristics of the City Veles according to the information from the statistics from the last population census in Macedonia in 2002 year, the Municipality of Veles has 55,108 inhabitants (no database from census in 2021).

There are a total of 16,688 unemployed people in the municipality, of which 12,053 are from the city and 4,635 from village. According to the population assessment in 2012 year, there is a decrease in the population, following the rise of the migrations of young population and the lack of employment opportunities. (Image 4)

T-03.02.15: Demographic indicators of the municipalities, 2012

	Живо-родени Live births	Умрени / Deaths		Природен прираст Natural increase	Бракови / Marriages		Република Македонија Republic of Macedonia
		вкупно total	умрени дојенчиња infant deaths		сключени registered	разведени divorced	
Република Македонија	23 568	20 134	230	3 434	13 991	1 926	Republic of Macedonia
Скопје	6 584	4 932	76	1 652	3 343	528	Skopje
Аеродром	761	594	6	167	449	73	Aerodrom
Бутел	467	338	6	129	257	41	Butel
Гази Баба	871	654	11	217	406	58	Gazi Baba
Горче Петров	422	406	9	16	244	41	Gjorce Petrov
Карпош	565	672	4	- 107	318	74	Karposh
Кисела Вода	584	668	4	- 84	306	53	Kisela Voda
Сарај	683	232	14	451	317	29	Saraj
Центар	655	574	7	81	312	59	Centar
Чаир	1 067	619	8	448	482	48	Chair
Шуто Оризари	509	175	7	334	252	52	Shuto Orizari
Арачиново	242	56	5	186	100	4	Aracinovo
Берово	110	181	1	- 71	77	9	Berovo
Битола	881	1 262	10	- 381	562	118	Bitola
Богданци	68	118	2	- 50	26	11	Bogdanci
Боговинце	348	201	1	147	280	35	Bogovinje
Босилово	155	157	-	- 2	88	10	Bosilovo
Брењаница	175	156	5	19	105	15	Brenjitsa
Валандово	117	132	2	- 15	67	11	Valandovo
Василево	172	100	2	72	77	8	Vasilovo
Велешани	23	24	-	- 1	7	-	Veleshani
Veles	637	627	7	10	359	37	Veles
Виница	189	186	1	3	140	17	Vinitsa
Врагичаница	13	24	-	- 11	11	-	Vragichitsa
Врагичанште	318	194	2	124	278	40	Vragichiste
Геѓапелија	202	261	2	- 59	110	23	Gepelija
Гостивар	743	572	7	171	707	126	Gostivar

Image 4. Demographic implications of City Veles, Source: "Population Demographic Indicators of the municipalities", State Statistical Office in Macedonia

In the municipality of Veles, has a significant increase in the migration from rural to urban areas noted in the period of industrialization. In the last ten years there has been a process

of reverse migration, especially in the elderly population. Significant increase was noted in the migration of the working young age population from Veles towards outside the borders of the Republic of North Macedonia. (Image 5)

03.03. Миграции		03.03. Migrations				
Т-03.03.3: Отселени граѓани на Република Македонија според пол, брачната состојба и возраста, по општини, 2012						
Општина на поранешно место на живеење	Вкупно Total	Пол / Sex		Брачна состојба /		
		мажи males	женски females	НЕЖЕНЕТ- НЕМАЖЕНА unmarried	ЖЕНЕТ-МАЖЕНА married	ВДОВОЦА- ВДОВИЦА widowed
Република Македонија	6 830	1 715	5 115	2 068	4 166	227
Скопје	1 724	566	1 158	281	1 251	87
Аеродром	273	99	174	30	219	8
Бутел	111	32	79	20	79	8
Гази Баба	220	71	149	25	173	10
Горче Петров	137	46	91	18	109	6
Карпош	213	88	125	37	147	13
Кисела Вода	198	65	133	28	137	15
Сарaj	88	4	84	36	48	1
Центар	195	77	118	32	127	16
Чаир	248	77	171	48	181	9
Шuto Оризари	41	7	34	7	31	1
Арачиново	35	6	29	3	28	-
Берово	95	23	72	69	15	3
Битола	269	78	191	32	210	13
Богданци	26	6	20	2	21	-
Боговине	67	7	60	53	14	-
Босилово	49	4	45	1	45	-
Брашнаца	26	5	21	14	10	-
Валандово	65	17	48	28	34	-
Василево	51	7	44	3	46	-
Велчани	-10	-3	-7	-1	-9	-
Велес	224	44	180	158	58	2
Виница	101	20	81	60	28	5
Вранештица	4	1	3	-	3	-
Врагичиште	64	3	61	60	4	-
Гевгелија	57	10	47	9	44	-
Гостивар	152	28	124	82	59	4

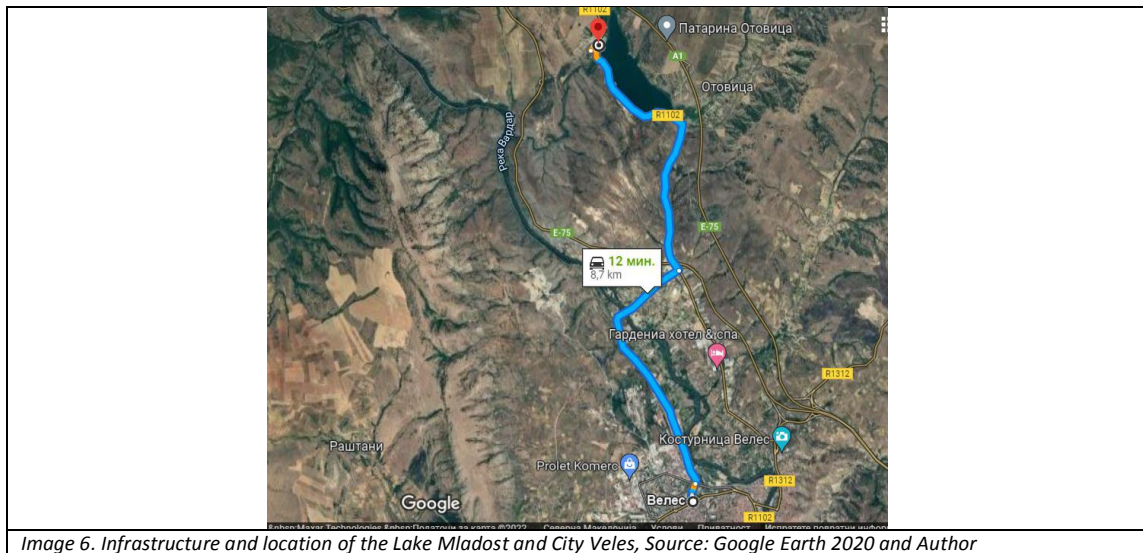
Image 5. Migrations in the City Veles, Source: "Migrations" State Statistical Office

4. GUIDELINES OF SUSTAINABLE DEVELOPMENT OF ECO-TOURISM IN THE MUNICIPALITY VELES

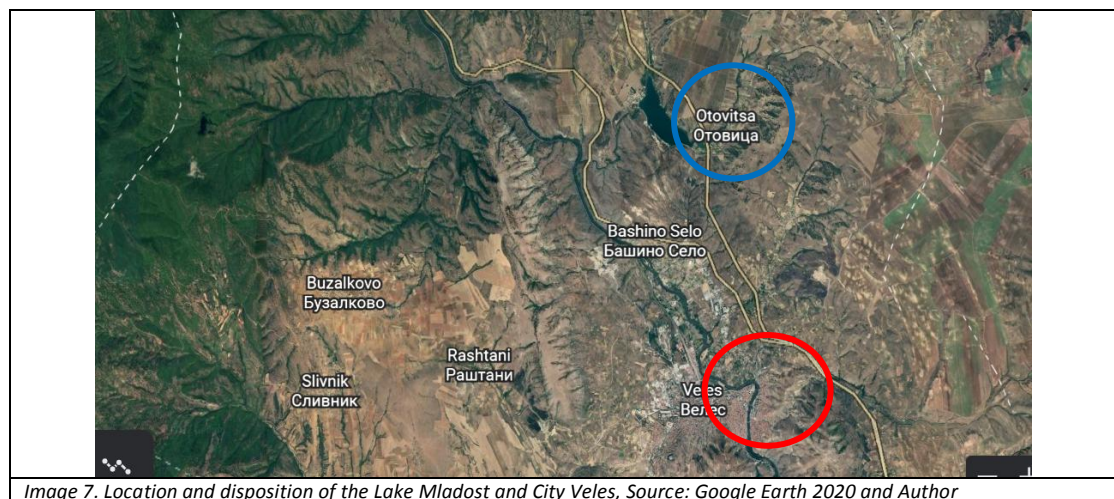
The guidelines for the City Veles to incorporate different selective forms of eco-tourism in order to promote new sustainable way of economic development include the following forms of tourism: transit tourism using the advantages of Veles as a central transit location with highway and rail transportation; priority for urbanization and designing contents for development of eco-tourism around the lake Mladost and around Motel Macedonia; improving tourism infrastructure around Lake Mladost; establishment of a tourist bureau - possibility for organized tours for the tourists to visit sacred buildings, cultural monuments and natural resources, large number of churches, monasteries, rich history, museums, natural rarities); revitalization of old traditional crafts and development of creative industries; cultural manifestations and festivals (festival of ancient drama Stobi, Vardar regatta, art colonies, international folklore festival). Economic priority measures in the City Veles should define improvement of the situation of the shrinking city as well as new models in terms of sustainable development include coordination with the following actors and stakeholders: creating coordination between the local institutions, stakeholders and citizens; defining shifting economic interest from an industrial city to a defining the new green eco-tourism potential by rehabilitating the Lake Mladost complex, improving the cultural events, and sports activities and involve the local community; creating a developing strategy and economic plans which will define entrepreneurial activities, infrastructure development and urban planning, access and management of financial resources, opportunities for research and development; strategic sustainable development by increasing the opportunities for foreign investments, favorable loans for local touristic businesses, increasing the opportunities for the young people in Veles towards creating greening strategies.

5. GREEN STRATEGIES FOR SUSTAINABLE DEVELOPMENT AND INFRASTRUCTURE OF LAKE MLADOST IN MUNICIPALITY VELES

Lake Mladost is located next to the artificial reservoir lake, north of the city of Veles, on a public land owned by the Republic of North Macedonia. It has very good traffic connections through asphalt local road with a distance of 8 km from the City Veles, road which goes along the shore of the lake, and continues to the Skopje-Veles highway. There is also developed infrastructure with drinking water, sewage system, electrical infrastructure and telephone network, that connects the motel complex and the restaurant complex. (Image 6)



The lake Mladost was built in 1963 year. It is located at an altitude of 250 m. It covers an area of 52 ha, with 12,000,000 m³ water. The City of Veles needs to follow the trend of new sustainable green way in order to have revitalization and re-modernization of the green capacities of the city and especially the lake Mladost which is becoming more popular sustainable eco-touristic location among young people. (Image 7)



6. SMART LAKE MLADOST – FIRST INNOVATIVE ATTRACTION IN REPUBLIC OF NORTH MACEDONIA AS A CONCEPT FOR SUSTAINABLE NATURAL REGENERATION

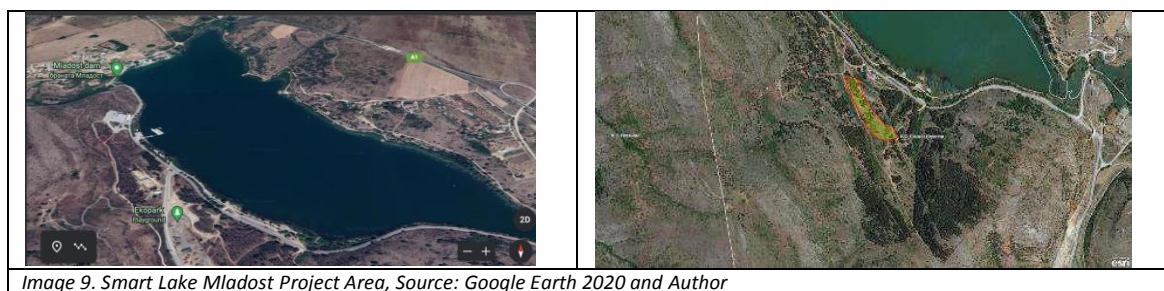
Smart Make Mladost is a concept for sustainable natural regeneration in order to improve the touristic development. The Municipality of Veles and the Centre for development of Vardar Region developed the project called “Smart Lake Mladost - first innovative tourist

attraction in Macedonia", with eco-camp zone and adventure park for children with an area of 1500 m² and 7 prefabricated wooden houses. (Image 8)



The area of the Smart Lake Mladost project activities will be organized in the following functional zones: temporary accommodation hotels, camps, sports and recreation, urban area for ecological green park located in a close proximity to the lake Mladost.

This area is a publicly owned property, that is not a protected area neither its nominated for protection in accordance with the Law on Nature Protection. The area is not a part of archaeological zone nor contains any physical cultural heritage, so according to the urban plan this area can be planned as a smart eco-camp zone. (Image 9)



The Urban project of the Smart Lake Mladost includes the following activities towards the sustainable development: development of housing settlement, commercial facilities, restaurants and sports and recreation area; reconstruction of existing infrastructure with new natural materials; marking of natural pedestrian and cycling routes; planning elements that use alternative sources of energy: photo-voltaic panels, solar collectors; setting up SMART equipment with maximum energy savings, with SMART charging monitoring device and digital management system; green sustainable use of materials for the eco - houses built with environmentally-friendly wooded materials that will correspond ideally to the surroundings of the place. (Image 9)



Image 9. Activities towards Sustainable development of the Lake Mladost, Souce: Municipality Veles, www.veles.gov.mk

The greening strategies of the project “Smart Lake Mladost” are environmentally-friendly and sustainable environment with the respect of the existing natural values of the recreation center. The coastline of the lake Mladost is a frequent destination for campers and fishermen. The surroundings of the lake have forests and greenery, which contributes to its status as a pleasant place for rest and recreation in the nature. As mobility of the Smart Lake Mladost project it is developed green infrastructure for cycling and hiking activities. (Image 10)



Image 10. Cycling Mobility Activities towards Sustainable development of the Lake Mladost, Souce: Municipality Veles, www.veles.gov.mk

Sustainable greening strategies around the Lake Mladost include development of green hotels and restaurants that implement sustainable policies and practices, as well as the green project landscape. Such example is the Romantic hotel around Lake Mladost that implements sustainable ecological polices with respect to the natural environment of the lake Mladost.



Souce: Hotel Romantik, Lake Mladost, www.hotelromantik.com.mk

The natural regeneration of the Smart Lake Mladost project is designed with respect of the natural resources, the biodiversity, flora and fauna of the natural aspects of the location around the lake Mladost.

The benefits of the greening and natural regeneration of the urban strategies include several sustainable goals: ecological, social and economical benefits. Ecological benefits are: temperature modification –heating/cooling of buildings, air quality improvements - pollution absorption and oxygen production, carbon dioxide storage, stormwater - filtration and absorption of water. Social benefits are the following: social aspects on well-being of residents, and providing a connection with nature and biodiversity. Economic benefits are:

increase in real estate values, improvement of the appearance and economic value, reduction in cooling costs, regulation of sunlight distribution in houses of cities, reduction in health service costs and improvement in the livability in cities.

CONCLUSION

This scientific paper specifies the sustainable green approach towards the development of Lake Mladost in Veles, as a catalyst for new innovative ideas for growth-centered planning in the shrinking city Veles. The Case Study of the revitalization of the Lake Mladost is analyzed as a bio-economic defined potential for sustainable development. The results of this scientific paper will be analyzing the conditions, architectural design and the possibilities of the green architecture and green infrastructure of the eco-camp in lake Mladost, especially following the revitalising efforts towards making bio-economic tourism influences in revitalization of the city Veles. The main objectives of the study of the Case Study in Lake Mladost and City Veles as a potential for sustainable development of the shrinking city is: increasing opportunities for entrepreneurial development and human employment, creating conditions for encouraging domestic and attracting foreign direct investments; stimulating innovative concepts, safeguarding ecology and biodiversity, improving the sustainable environment and development of eco-tourism by development of the Eco-Camp facilities following the area of the Lake Mladost in Veles.

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