

Research report

Assessment of the social and economic impact of the LIFE Artina project's implementation

Report is available also in Croatian.

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Sažetak

U sklopu LIFE Artina projekta, a u skladu sa smjernicama za projekte financirane putem EU programa LIFE, provodi se zasebno istraživanje percepcija i stavova ciljanih skupina (prvi zadatak) te praćenje socio-ekonomskog utjecaja njegove provedbe (drugi zadatak). Istraživanje provodi Institut društvenih znanosti „Ivo Pilar“, temeljem Ugovora o pružanju usluga sklopljenog s Udrugom za prirodu, okoliš i održivi razvoj Sunce. Ovo se istraživačko izvješće odnosi na drugi projektni zadatak.

Osnovni cilj ovog projektnog zadatka je dobivanje uvida u socio-ekonomske učinke projektnih aktivnosti na gospodarstvo i stanovništvo projektnog područja, odnosno otoka Lastova. Istraživanje se temelji na miješanoj metodologiji, odnosno korišteni su različiti metodološki pristupi i izvori (kvantitativni podaci dobiveni u prethodnim fazama LIFE Artina istraživanja percepcija i stavova ciljanih skupina na Lastovu, ostali podaci dobiveni u prethodnim fazama LIFE Artina projekta, kvantificirani rezultati projektnih aktivnosti, analiza medijskih sadržaja i popratnih sadržaja (društvene mreže) koji donose vijesti o projektu LIFE Artina, izvješća projektnih partnera o održanim aktivnostima, mrežna stranica LIFE Artina projekta, podaci Državnog zavoda za statistiku za demografske pokazatelje projektnog područja, ostali dostupni podaci iz različitih službenih izvora koji pružaju uvid u socio-gospodarske pokazatelje projektnog područja).

Indikatori socio-ekonomskog doprinosa projekta na kojima se bazira ovo izvješće odnose se na vrste aktivnosti koje su provedene tijekom projekta i (procijenjeni) broj sudionika tih aktivnosti, vrste i broj različitih medijskih objava vezanih uz projekt, stavove lokalnog stanovništva Lastova o učincima projekta za lokalnu zajednicu te neizravni doprinos projektnih partnera ekonomiji Lastova.

Istraživanjem je utvrđen neizravni doprinos lokalnoj ekonomiji Lastova kroz boravak zaposlenika i volontera projektnih partnera na otoku (kroz plaćanje smještaja, troškova hrane i

ostalnih usluga), podizanje prepoznatljivosti područja kroz medijske istupe i objave, podizanje svijesti među lokalnim stanovništvom o pozitivnim socio-ekonomskim učincima projekta, podizanje svijesti o potrebi očuvanja okoliša među vrtićkom i školskom djecom, te poticaj za buduće projektne suradnje vezane uz lastovsko područje.

Abstract

The Institute of Social Sciences "Ivo Pilar" conducted the research based on the Service Agreement signed with the Association for Nature, Environment and Sustainable Development Sunce. The research is a part of the LIFE Artina project, which is carried out in accordance with the guidelines for projects financed through the EU LIFE program. This research report relates to the monitoring of the socio-economic impact of project implementation.

The main goal of this project task is to gain insight into the socio-economic effects of project activities on the economy and population of the project area, that is, the island of Lastovo. The research is based on a mixed methodology. Methodological approaches and sources that were used are: quantitative data obtained in the previous phases of the LIFE Artina survey of perceptions and attitudes of target groups in Lastovo, other data obtained in the previous phases of the LIFE Artina project, quantified results of project activities, analysis of media content and accompanying content (social networks) that bring news about the LIFE Artina project, reports of project partners on the activities held, the website of the LIFE Artina project, data from the National Bureau of Statistics for demographic indicators of the project area, other available data from various official sources that provide insight into socio-economic indicators of the project area.

The indicators of the socio-economic contribution of the project on which this report is based refer to the types of activities that were carried out during the project and the (estimated) number of participants in those activities, the types and number of different media publications related to the project, the views of the local population of Lastovo on the effects of the project for the local community and the indirect contribution of project partners to the economy of Lastovo.

The research established an indirect contribution to the local economy of Lastovo through the stay of employees and volunteers of project partners on the island (through payment of accommodation, food costs and other services), raising the profile of the area through media appearances and announcements, raising awareness among the local population about the positive socio-economic effects of the project, raising awareness of the need to preserve the environment among kindergarten and school children, and encouragement for future project collaborations related to the Lastovo area.

About the research project

LIFE Artina project – "Seabird Conservation Network in the Adriatic" deals with problems regarding seabird conservation in the central Adriatic. The project developer is BIOM Association, and the partners are Sunce Association for Nature, Environment and Sustainable Development, the Public Institution of Lastovo Archipelago Nature Park and BirdLife Malta. The project is financed from the LIFE program, which is an instrument of the European Union intended to finance activities in the field of environmental protection, nature and climate. The goal of the LIFE program is to contribute to the implementation, updating and development of EU policies and legislation in the field of environment, nature and climate through the co-financing of projects that have European added value. The project is co-financed by the Office for NGOs, the Government of the Republic of Croatia and the Environmental Protection and Energy Efficiency Fund. The LIFE Artina project is implemented from September 1, 2018 to August 31, 2023.

The project area refers to the Lastovo Archipelago and Pučinski otoci (Pelagic islands) and represents two conservation areas important for birds (SPA) included in the LIFE Artina project: Audouin's gull, the Scopoli's shearwater and the Yelkouan Shearwater. These areas are important for the listed endangered species of seabirds, and nesting populations of birds have been detected on the Lastovo Archipelago.

Under the LIFE Artina project, and in accordance with the guidelines for projects financed through the EU LIFE program, a separate survey of the perceptions and attitudes of target groups (first task) and monitoring of the socio-economic impact of its implementation (second task) is being conducted. This project spatially covers the island of Lastovo (with the exception of a group of kindergarten and school children from the islands of Vis and Korčula who will be included in the research). In the first task, which takes place in two sections, the perceptions and attitudes of the target groups at the beginning and at the end of the implementation of the LIFE Artina project are researched, and its purpose is to measure the effect of the implemented project activities (aimed at bird conservation) on the members of the target groups, i.e. their

understanding of the project goals and possible changes in attitudes, behaviours and information about certain issues. The second task aims to assess the socio-economic impact of the implementation of the LIFE Artina project on the economy and population of the project area. This report refers to the analysis of the results of the second task.

Methods and research questions

The main goal of this project task is to gain insight into the socio-economic effects of project activities on the economy and population of the project area, that is, the island of Lastovo.

The basic research questions guiding this project are:

1. How do the residents of the target area perceive the impact of the project in relation to certain variables (employability, income, isolation, raising the profile of the area)?
2. What is the impact of the project on reducing or alleviating economic isolation?
3. Did the project activities raise the profile, i.e. raising the profile of the area/region?
4. Has the project influenced the increase/improvement of nature-based activities with the aim of developing additional sources of income (e.g. bird watching tourism)?
5. What activities were carried out under the project, which have an impact on reducing the island's social isolation?
6. Is there and ant to what extent is direct or indirect employment growth associated with the project?

In accordance with the indicated goal of this project assignment and specific research questions, a mixed methodology i.e. different methodological approaches were used:

1. Quantitative data obtained in the previous phases of LIFE Artina research on perceptions and attitudes of target groups in Lastovo
2. Other data obtained in the previous phases of the LIFE Artina project
3. Quantified results of project activities (related to the contribution of the project to the local economy: accommodation, services, etc.)

4. Analysis of media and accompanying content (social networks) that bring news about the LIFE Artina project
5. Reports of project partners on held activities, web page of the LIFE Artina project
6. Data from the National Bureau of Statistics for demographic indicators of the project area
7. Available data from various official sources that provide insight into the socio-economic indicators of the project area: Employment Office for insight into the number of employees and employment demand; The Tourist Board for data on the number of tourists and tourist offer, the Municipality of Lastovo for the planned development strategy, the Ministry of Economy of the Republic of Croatia for an overview of the number and type of registered trades, travel and maritime agencies for an overview of the traffic connections of the project area, etc.

Lastovo general data and socio-economic indicators

The island of Lastovo and its archipelago, i.e. the Lastovo archipelago, is part of the South Dalmatian group of islands. The Lastovo archipelago is a local self-government unit - the Municipality of Lastovo, which, although administratively belongs to the Dubrovnik-Neretva County, has a better transport connection with the Split-Dalmatia County, i.e. the city of Split, to which the population mainly gravitates.

In maritime traffic, the island of Lastovo uses the state port of Ubli, open to public traffic. Lastovo is connected to Split by catamaran and ferry lines, and to Dubrovnik by catamaran lines.

The Lastovo archipelago consists of 46 islands, islets and rocks, among which the largest is the main island of Lastovo (surface area of 47 km²). The Lastovo archipelago also includes the islets belonging to Lastovo, the island of Sušac, and the Lastovnjaci and Vrhovnjaci island groups.

Because of the natural wealth of flora and fauna, the Lastovo archipelago was declared a nature park in 2006.

The municipality of Lastovo includes five settlements: Lastovo, Zaklopatica, Skrivena Luka, Ubli and Pasadur. According to population data dating back to 1857, when the first modern Austro-Hungarian census was conducted, the number of inhabitants in Lastovo grew until the middle of the 20th century (table 1).

Table 1: Lastovo archipelago – number of inhabitants

Year	1900	1910	1921	1931	1948	1953	1961	1971	1981	1991	2001	2011	2021
Total	1384	1417	1558	1700	1738	1721	1449	1210	962	1221	835	792	748

Source: National Bureau of Statistics (<https://www.dzs.hr/>)

In the second half of the 20th century, the number of inhabitants of Lastovo constantly decreased due to a number of reasons, including low natural growth and emigration. However, until 1991, the decrease in the total number of inhabitants of Lastovo was less intense than was the case with other islands of the southeastern Adriatic, such as Mljet and the Elaphiti Islands (Glamuzina and Glamuzina, 2001, 250). The reason for this is the military base placed on the island by the state of that time, thus settling a certain number of military personnel and their families there. After the breakup of Yugoslavia, as a result of the military and political events that followed, the army left Lastovo, and the inter-census period between 1991 and 2001 was the period in which the largest loss of the total number of inhabitants was recorded on the island, slightly less than a third.

Today, Lastovo is increasingly turning to tourism in the economic sense. According to the data of the municipality of Lastovo's Tourist Board, a multi-year steady growth of tourist traffic was recorded (table 2), which was interrupted by the declaration of the pandemic of the COVID-19 disease caused by the SARS-CoV-2 virus. The restrictions introduced due to the pandemic only affected the tourist results in 2020 in Lastovo, after which they returned to pre-pandemic figures.

Table 2: Arrivals and overnight stays in Lastovo (2014 – 2021)

Year	2014.	2015.	2016.	2017.	2018.	2019.	2020.	2021.
Overnight stays	41.933	46.736	50.264	56.989	63.388	69.967	46.966	68.083
Arrivals	5.414	6.486	6.926	7.809	8.828	9.848	18.861	9.442

Source: Municipality of Lastovo Tourist Board (<https://tz-lastovo.hr/turisticki-ured/dokumenti-tza/>)

The most numerous guests are Croatian, followed by guests from Slovenia and Italy. Lastovo is particularly promoted in tourism with its preserved environment and authentic Mediterranean architecture.

The population also engages in agriculture, mainly viticulture and fruit growing.

Among other activities, the population is mostly engaged in fishing. The fishing industry, through processes and regulations aimed at preserving natural resources, is constantly adapting to new conditions. The declaration of Lastovo as a Nature Park in 2006 had an impact on the restrictions on previous fishing practices. In addition, part of the project activities of the LIFE Artina project was aimed directly at fishermen with the aim of reducing protected seabird bycatch, which will be discussed in more detail later in this report.

In June 2023, 73 active trades were registered in Lastovo. Most of them work in fishing, tourism and catering services, as well as construction and transportation.¹

According to the data of the Croatian Employment Service of the Dubrovnik Regional Office, unemployment in Lastovo decreases seasonally due to employment in tourism. The exception is the pandemic year 2020. In the observed period (2019 to 2022), the unemployment rate in

¹ Podaci dostupni na: <https://pretrazivac-obrta.gov.hr/pretraga> (preuzeto 15. lipnja 2023.).

Lastovo is higher than the average in the Republic of Croatia.² The data are presented in Table 3.

Table 3: Data on employment in Lastovo 2019 – 2022

Year*	Unemployed	Employed	Active	Unemployment rate
2019	47	275	322	14,6
2020	55	265	320	17,2
2021	40	260	300	13,3
2022	44	--	--	--

*The data for the 2019 - 2021 period were obtained from the annual reports of the Croatian Employment Service, Dubrovnik Regional Office. The report for the year 2022 is not available, and the information on the number of unemployed for that year was obtained from the Croatian Employment Service's Bulletin.

Social and economic contribution of the LIFE Artina project

Employment as a direct economic contribution was not among the goals of the LIFE Artina project, however, through indirect contributions to the local economy and through the implementation of various activities, education, public events, media announcements, the project as such can certainly contribute to the local community in a socio-economic sense. Types of activities and (estimated) number of participants, types and number of different media publications related to the project, views of the local population of Lastovo on the effects of the project for the local community and the indirect contribution of the project partners to the economy of Lastovo are stated in this report as different indicators of this contribution.

² In 2019, the unemployment rate in Croatia was 6.6%. In 2020, due to the impact of the coronavirus pandemic on the economy, the unemployment rate rose to 7.%, and it remained at roughly the same levels in 2021. The unemployment rate in 2022 was slightly below 7% (data available at <https://www.hzz.hr/usluge/publikacije-hzz-a/statisticke-publikacije/#godisnjak>).

Activities carried out under the LIFE Artina project

A whole series of diverse activities was carried out for different groups of stakeholders as part of the LIFE Artina project.

A total of 8 educational institutions participated in educational programs aimed at children (Blato Elementary School, Korčula, Vis Elementary School, Komiža Elementary School, Braća Glumac Elementary School from Lastovo, Blato Kindergarten from Korčula, Vis Kindergarten, Komiža Kindergarten, Biser Lastova Kindergarten, Lastovo Kindergarten). The training included visits and socializing of children from the islands of Korčula and Vis to Lastovo and vice versa. In April 2023, Sunce Association for Nature, Environment and Sustainable Development received the quality label for informal educational programs - SKOCKANO. Educational programs for children that were carried under the LIFE Artina project were one of the elements on the basis of which this label was awarded.

As part of the educational program, 70 workshops were held for a total of 169 children, 5 field workshops for pupils of subject classes (5th to 8th grade) for a total of 103 children, and 5 boat trips for pupils of subject classes for 136 children.

The exhibition "Future for seabirds" was organized in 5 locations: Split, Korčula, Vis, Komiža and Lastovo and was viewed by 525 children. The data are presented in Table 4.

Activities aimed at children were carried out with the aim that children experience and better understand the purpose and meaning of the project and project activities in the immediate natural environment, and to stimulate their curiosity and possible future interest in the topics of environmental protection and biodiversity conservation. The research among children, which was carried out by the Institute of Social Sciences "Ivo Pilar" in two phases (before and after participation in the activities) based on the Service Agreement concluded with the Sunce Association for Nature, Environment and Sustainable Development, showed that there is a statistically significant difference between children who participated in the activities and those who did not: after participating in the project activities children have better knowledge about seabirds; after participating in project activities, children have better knowledge about the

dangers that threaten seabirds; after participating in the project activities, children perceive the project aimed at the protection and preservation of seabirds more positively.

Table 4: Project activities for children

Activity	Name	No. of workshops	No. of children
Educational workshops	Introductory workshop	18	169
	Threats to seabirds 1	18	
	Threats to seabirds 2	18	
Field workshops	Field workshops for lower grades	5	103
Trips	Boat trip - field work	3	136
	Two -day excursion Korčula – Lastovo, two days	1	
	One-day excursion Lastovo - Korčula	1	
Exhibitions	The future for seabirds	5	525

Other activities that took place as part of the LIFE Artina project are listed in table 5. They refer to online events (webinars) and live events (public lectures, trainings, workshops, etc.). The table also lists the event dates³ and the (estimated) number of participants. A total of 25 live events have been held so far with an estimated number of more than 1,550 participants. Two more live events are planned until the end of the project. In addition, 6 online events were held with an estimated number of around 200 participants.

³ Since at the time of writing this report, some project activities are still taking place or are planned to take place in the coming months, only their names and planned time are listed.

Table 5: Activities carried out under the LIFE Artina project

Activities	Date	No. of participants	Stakeholders
LIVE EVENTS			
Presentation of the LIFE Artina project	3.5.2019.	38	public
Exhibition "The Future for Seabirds"	2.-24.8.2019.	40	public
Project presentation and questionnaires for fishermen, Komiža	17.12.2019.	20	fishermen and the public
Meeting for the purpose of cooperation with fishermen for the reception of observers	11.-13.11.2020.	13	fishermen
Meeting on measures to reduce bycatch of seabirds	8.12.2020.	5	fishermen
Meeting with fishermen on measures to reduce seabird bycatch	22.2.2021.	4	fishermen
Research and protection of seabirds	29.3.2021.	10	lecture for the public in the island of Lastovo
What secrets do Lastovo's beaches hide?	6.5.2021.	8	lecture for the public in Lastovo
Rats and seabirds	30.6.2021.	11	lecture for the public in Lastovo
Night of the albatross in Lastovo	15.7.2021.	40	public
Fishermen and seabirds	16.11.2021.	6	lecture for the public in Lastovo
Splicka scena, stand-up comedians performance in Split, part of jokes related to the project	2.6.2022.	60	project stakeholders and partners of Sunce, closed to the general public
Cooperation of the civil sector, public institutions for the management of protected areas and educational institutions on the example of the educational activities of the LIFE Artina project	8.6.2022.	500	workshop in Split for target stakeholders
EkoLife Lastovo beach cleaning campaign in Lastovo	14.6.2022.	15	employees and members of Sunce, employees of OI Lastovo Archipelago NP
Splicka scena, stand-up comedians performance in Kokolo cafe in Lastovo, part of the jokes related to the project	14.6.2022.	60	public

Albatross night in Vis	1.10.2022.	30	public
Marine Task Force Meeting in Lastovo	11.-13.10.2022.	32	BirdLife partners from Europe
Cooperation of the civil sector, public institutions for the management of protected areas and educational institutions on the example of the educational activities of the LIFE Artina project	17.11.2022.	39	workshop in Split for target stakeholders
Panel discussion "Experiences and recommendations for reducing seabird bycatch"	29.11.2022.	31	public institutions, experts, associations, fishermen...
Presentation of the Teaching Base and LIFE Project, University Department of Marine Studies in Split	6.12.2022.	24	students
Field visit to PI More I krš for replication of project results	May 2023	5	employees of PI More and krs
Field visit to PI Mljet NP to replicate the results of the project	May 2023	5	employees of PI Mljet NP
Field visit to PI DNŽ to replicate the results of the project	May 2023	5	employees of DNŽ PI
LIFE Artina's final conference	9.-11.5.2023.	55	professional public from Europe (CSOs, managers of protected areas, state and public bodies, scientists)
Final public event with the presentation of the project results, as part of the Fisherman's Night	1.8.2023.	500	public
6 coastal cleaning actions - at several locations on the islands	Planned for September 2023		
Hands-on training for the implementation of educational programs for public institutions - for target stakeholders, in nature protection	Planned for September 2023		
WEBINARS			
Presentation of LIFE Artina Network of Marine Protected Areas in Croatia	12.4.2022.	14	PI for the management of marine and coastal protected areas

Caring for seabird colonies	7.3.2023.	42	PI, CSOs, MINGOR, MP, private companies, PAP/RAC, universities, primary schools, DIRH
Marine litter - how to monitor and combat the danger floating in our seas	28.3.2023.	49	PI, CSOs, MINGOR, MP, institutes, private companies, counties, LAGUR, LEADER network
<i>A bird does not belong on a hook</i>	18.4.2023.	26	PI, CSOs, MINGOR, private companies, fishing cooperative, Public Company Morsko dobro (Montenegro)
Webinar on the implementation of educational program and public events - for targeted stakeholders, from nature protection	16.5.2023.	31	PI, teachers in primary and secondary schools, kindergarten teachers, CSOs, Ministry of Economy and Sustainable Development, Ministry of Agriculture, State Inspectorate of the Republic of Croatia, private companies
Proclamation of marine protected areas for birds	6.6.2023.	35	PI, CSOs, MINGOR, private companies, PAP/RAC, DIRH

In addition to the above-mentioned activities, special mention should be made of the cleaning actions that were continuously carried out in Lastovo from 2020 to 2022. Cleaning actions of Lastovo's beaches, bays and underwater areas were perceived very positively by local stakeholders and significantly increased the visibility and acceptance of the project. Table 6 lists the number of cleaning actions carried out by year, the number of participants and the amount of waste collected.

Table 6: Cleaning actions carried out in Lastovo

Year	Number and type of actions	No. of participants	Amount of collected waste
2020	Cleaning of coves and beaches 9	112	204 bags*

2021	Cleaning of coves and beaches 8	70	370 bags
	Cleaning of coves and beaches 1	53	6 tons of large waste** and 400 bags
2022	Cleaning of coves and beaches 6	126	400 bags
	Cleaning of coves and beaches 1	34	2 tons of large waste

* Bag has a volume of 150 litres.

** Mainly rubber, plastic and construction material

Press releases

In addition to the mentioned activities that were carried out as part of the LIFE Artina project, media content related to the project is also important for the analysis of the socio-economic contribution of the project. The analysis included content that appeared in traditional media (newspapers, television, radio), digital media (online portals and websites) and social networks (Facebook, Twitter, Youtube, Instagram).

A total of 291 media contents related to the LIFE Artina project were published. The most announcements were made on social networks (147 in total), followed by digital media (120 in total) and the least in traditional media (24 in total).

The data are presented in table 7.

Table 7: Press releases related to the LIFE Artina project

Media type	No. of releases
Traditional media	
Newspaper article	17
Radio	2
Television	5
Digital media	
Other media web pages	29
Project partners' webpages	29

Official webpage	LIFE	Artina	62
Social networks			
<i>Instagram</i>			87
<i>Facebook</i>			55
<i>Twitter</i>			4
<i>Youtube</i>			1
Total			291

Survey of perceptions and attitudes about the LIFE Artina project of the island of Lastovo's local population

The survey of the perceptions and attitudes of the local population of the island of Lastovo was conducted in two phases, at the very beginning of the implementation of the LIFE Artina project and at the end of the implementation of the project activities. In both phases, the research was based on a quantitative method, i.e., a survey, and the selection of the sample was non-probabilistic, using the opportunity sampling technique. Both phases of the research, entrance and exit surveys, included target groups in Lastovo, which include employees of the tourist board and travel agencies, employees of the maritime police, employees of the municipality and local waste management companies, hotel and restaurant employees, apartment owners and other members of the local community. Entrance surveys were conducted in October and November 2019, and exit surveys in April and May 2023. A total of 225 respondents were included in the surveys (122 entrance and 103 exit surveys).

By comparing the two phases of the research, we tried to get an answer to the following hypotheses: H1 target groups on the island of Lastovo have better knowledge about seabirds after the implementation of most of the project activities; H2 target groups on the island of Lastovo after the implementation of most of the project activities have better knowledge about the dangers that threaten seabirds; H3 target groups on the island of Lastovo have a more developed awareness of the importance of preserving seabirds after the implementation of most

of the project activities, and H4 after the implementation of the project activities target groups on the island of Lastovo have a greater willingness to support projects aimed at the protection and preservation of nature. The conducted tests confirmed the first three hypotheses, while the fourth was rejected, since respondents in the final phase of the project's implementation showed a statistically significant lack of interest and reduced willingness to support the project aimed at preserving seabirds.

The exit surveys also contained a question in which a number of possible effects of project activities on the local community were listed. Respondents were offered the answers not at all, very little, moderately, a lot, very much, and I do not know, in order to examine how much they agree with each offered effect. The answers are shown in table 8.

Table 8: To what extent do you personally agree that each of the listed effects of the LIFE Artina project will have an impact on the local community?

%	Not at all	Very little	Moderately	A lot	Very much	I do not know
Employment growth	8,4	12,9	12,0	3,1	0,9	8,4
Development of additional income for the local community	5,8	13,3	12,4	3,6	1,3	9,3
Imposing restrictions on the usual activities of the local population	9,3	11,6	12,9	2,2	0,9	8,9
Raising the profile of Lastovo	2,7	8,9	15,1	8,9	4,4	5,8
Increasing awareness of the need to preserve and protect the environment	2,7	9,3	11,1	9,3	9,8	3,6
Reducing the isolation of Lastovo	11,1	11,6	10,2	1,8	2,2	8,9
Activities have no real effects	11,1	8,4	11,6	3,1	1,8	9,8

Education of the local population on ways to coexist with nature	2,2	8,4	16,4	9,3	5,3	4,0
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The values of the arithmetic mean and standard deviation of the answers are shown in table 9. The table shows that respondents see the increase in awareness of the need to preserve and protect the environment among the local population, an increase in the recognizability of Lastovo and the education of the local community on ways to coexist with nature as the largest contribution of the project.

Subsequent tests revealed a statistically significant difference between respondents who participated in some of the project activities and those who did not in the following variables:

- "Raising the profile of Lastovo" ($\chi^2=14.436$, $df=5$; $p<0.1$), where respondents who participated in the project activities to a statistically significant extent believe that the recognizability of Lastovo will increase
- "Increase in the awareness of the need to preserve and protect the environment" ($\chi^2=18.808$, $df=5$; $p<0.01$), whereby the respondents who participated in the project activities to a statistically significant extent believe that awareness of the need for protection and preservation of environment will increase
- "Activities do not have any real effects" ($\chi^2=14.436$, $df=5$; $p<0.1$), where respondents who did not participate in project activities to a statistically significant extent believe that project activities have no significant effects
- "Trainings of the local population on the ways of coexistence with nature" ($\chi^2=19.262$, $df=5$; $p<0.01$), where the respondents who participated in the project activities to a statistically significant extent believe that the project will help to inform the local population on the ways of coexistence with nature

Table 9: To what extent do you personally agree that each of the listed effects of the LIFE Artina project will have an impact on the local community?

	Arithmetic mean \bar{x}	Standard deviation SD
Employment growth	3,0	1,69
Development of additional income for the local community	3,2	1,68
Imposing restrictions on the usual activities of the local population	3,0	1,72
Raising the profile of Lastovo	3,5	1,40
Increasing awareness of the need to preserve and protect the environment	3,6	1,38
Reducing the isolation of Lastovo	3,0	1,80
Activities have no real effects	3,1	1,82
Training of the local population on ways to coexist with nature	3,4	1,29

Research on the perceptions and attitudes of tourists and visitors to the island of Lastovo

Along with the local population and school children, tourists and visitors to the island were also included in the research as one of the target groups on the island of Lastovo. As for the other mentioned target groups, research among tourists and visitors is planned in two phases, at the beginning and at the end of the implementation of the project activities. Since the tourist season of 2020 (when the implementation of the entrance round of surveys was planned) was significantly disrupted by the corona virus pandemic, it was postponed to the 2021 season. Therefore, the entrance surveys were conducted from July to September 2021, and the exit surveys from June to August 2023. A total of 115 respondents were included in the entrance surveys, and 131 respondents in the exit surveys.

Since the two rounds of research were based on the same method and manner of sampling, the obtained data were compared according to relevant variables, in order to gain insight into the

knowledge on seabirds among tourists and the dangers that threaten them, as well as support for the project itself and willingness to participate in different project activities. Therefore, the following hypotheses were put forward: H1 Tourists and visitors to the island of Lastovo have better knowledge about seabirds after the implementation of most of the project activities; H2 Tourists and visitors to the island of Lastovo have better knowledge about the dangers that threaten seabirds after the implementation of most of the project activities; H3 Tourists and visitors to the island of Lastovo have a more developed awareness of the importance of preserving seabirds after the implementation of most of the project activities; H4 Tourists and visitors to the island of Lastovo are more willing to support projects aimed at the protection and preservation of nature after the implementation of project activities. The conducted tests revealed the following: 1) tourists and visitors to Lastovo recognize only the Audouin's seagull to a statistically significant extent ($\chi^2=16.042$, $df=2$; $p<0.001$), while for other bird species no statistically significant difference was found between the respondents at the beginning and the end project activities, which partially confirmed the first hypothesis H1; 2) a statistically significant difference was found in relation to the recognition of dangers that threaten seabirds ($\chi^2=38.255$; $df=1$; $p<0.001$) and a greater diversification in the identification of threats to seabirds in exit surveys is visible, which confirms the second hypothesis H2 ; 3) a statistically significant difference between the entrance and exit surveys was not confirmed with regard to the respondents' awareness of the need to preserve nature, which did not confirm the third hypothesis H3; 4) a statistically significant difference between the entrance and exit surveys regarding the willingness to support projects aimed at the protection and preservation of nature was not confirmed, therefore the fourth hypothesis H4 has not been confirmed.

It is important to note that tourists in both rounds of research showed an extremely high awareness of the need to preserve nature and a willingness to support projects that aim to do so. In addition, it is particularly important to point out that tourists showed a high willingness to participate in various project activities, and 89.6% of them chose one of the offered activities (cleaning actions, workshops, public events, education, etc.). Considering all of the above, the general conclusion of the research conducted among tourists and visitors, as well as recommendations for future projects, is that tourists and visitors can be more involved in project

activities since their openness and willingness to participate, as well as "green" approach to the environment can contribute not only to project goals, but also to building the identity of the tourist destination in accordance with the ideas of sustainable development.

Indirect contribution of project partners to the economy of Lastovo

One of the indicators of the economic contribution of the project to the local community is the stay of employees of project partners (except PI Lastovo archipelago NP) and volunteers in Lastovo. For the purposes of this report, a man per day stays on the island are presented. From this data, an approximate contribution to the local economy was subsequently calculated, based on the average amount of accommodation and per diems paid in the territory of the Republic of Croatia for food and services to employees during business trips. The amount of daily wages until 2023 was HRK 200, and from January 1, 2023, it was transferred to the equivalent value in euros (26.55 euros).⁴ Data on the average price of accommodation are calculated as the mean value of the price of a studio apartment in summer and winter.⁵

The data are presented in table 10. From the data shown, it can be assumed that the indirect contribution of the LIFE Artina project to the local economy of Lastovo is EUR 178,686.75, of which EUR 107,400.00 is the estimated cost of accommodation and EUR 71,286.75 is the estimated daily allowance for food and other services.

⁴ Prescribed in the OG No. 156/2022.

⁵ Mean values of studio apartments are calculated according to the prices offered on Booking.com and airbnb.com. Since the price changed during the duration of the project (2018 to 2023), the amounts that the author of this report paid during her stay in Lastovo in October 2019 were taken as a reference point.

Table10: Estimated indirect contribution to the local economy

Project partner	Man/days	Estimated average price of accommodation (EUR 40)	Per diems (EUR 26,55)
Sunce	153 + 109*	10.480,00	6.956,10
BIOM	1600	64.000,00	42.480,00
Bird Life Malta	17	680,00	451,35
PI Lastovo	806	32.240,00	21.399,30
Archipelago NP			
Total	2.685	107.400,00	71.286,75

*153 estimated number of man per days among the employees of "Sunce" who will stay in Lastovo until the end of the project. By June 2023, there were 143 man/days among the employees of "Sunce" in Lastovo. 109 is the estimated number of people/days among the "Sunce" volunteers who will stay in Lastovo until the end of the project. By June 2023, there were 58 man/days among the "Sunce" volunteers in Lastovo, and another 48 are expected by the end of the project (conducting field research among tourists).

According to the data of the project partners, there were a total of 51 employed persons on the LIFE Artina project. Of this figure, not all were employed full-time for the entire duration of the project. When the average is made for the entire duration of the project, a total of 10.13 people were employed for 8 hours a day. Individual data are shown in table 11.

Table 11: Number of full-time employees during the entire duration of the LIFE Artina project

Project partner	Number of full-time employees
Biom	6,3
Sunce	2,5
Lastovo Archipelago Nature Park	0,95
Bird Life Malta	0,38
Total	10,13

The total number of employees according to gender and age is shown in table 12. From the data presented, it can be seen that there is a higher proportion of women among the employees and that they are of younger age (average age 33).

Table 12: Employees of the LIFE Artina project according to project partners, gender and age

Project partner	Biom	23
	Sunce	14
	Lastovo	
	Archipelago	
	Nature Park	6
	Bird Life Malta	6
Gender	M	22
	F	27
Age	20-29	17
	30-39	22
	40-49	7
	50-59	3
Age	Mod	27
	\bar{x}	33

A total of 45 volunteers from Croatia and the world participated in the project. From the data presented in table 13, it can be seen that they are young people, of an average age of 25, and that there are significantly more women among the volunteers. The volunteers spent a total of 5,148 volunteer hours in volunteer work (each volunteer averaged 114.4 hours), and they stayed in Lastovo for a total of 739 days (each volunteer averaged 19 days).

Table 13: Volunteers on the LIFE Artina project according to gender and age, volunteer hours and time in Lastovo

Gender	M	13
	F	32
Age	20-29	40
	30-39	5

Age	Mod	23
	\bar{x}	25
Volunteer work	5148	\bar{x} : 114,4
Days spent in Lastovo	739	\bar{x} : 19

In addition to the data presented, introduction of new collaborations, creation of bases for future projects through collaboration and awareness of problems (e.g. in the fisheries, education, waste management sector) and identification of new areas on the Adriatic important for conservation biodiversity significant contribution to the socio-economic development of the island can also be. As an example of future cooperation, we can name the LIFE TETIDE project, which will deal with the topic of biosecurity related to seabirds in the area of the Lastovo Archipelago Nature Park and research into the feasibility of eradicating rats on offshore islands.

Final remarks

Despite the fact that a direct socio-economic contribution was not one of the goals of the LIFE Artina project, this report nevertheless tries to determine its indirect positive effect.

The indicators of the socio-economic contribution of the project on which this research is based refer to the types of activities that were carried out during the project and the (estimated) number of participants in those activities, the types and number of different media publications related to the project, the views of the local population of Lastovo on the effects of the project for the local community and the indirect contribution of project partners to the economy of Lastovo.

In total, 70 workshops were conducted for a total of 169 children, 5 field workshops for pupils of subject classes (5th to 8th grade) for a total of 103 children, and 5 boat trips for pupils of subject classes for a total of 136 children. The exhibition "Future for seabirds" was organized in 5 locations: Split, Korčula, Vis, Komiža and Lastovo and was seen by 525 children. Exit

surveys showed that after participating in project activities (workshops), elementary school children have better knowledge about seabirds and the dangers that threaten them, and that they perceive the project aimed at protecting and preserving seabirds more positively.

During the project, 25 public live events (lectures, performances, exhibitions, trainings, workshops, etc.) and 6 online events were held. Two more public events are planned to take place until the conclusion of the project. The estimated number of participants in these activities is over 1,750 people. In addition, 23 beach and cove cleaning actions were carried out in Lastovo, as well as 2 underwater cleaning actions. More than 300 volunteers participated in beach and cove cleaning, with 64 divers and about 25 volunteers participating in underwater cleaning operations. A total of 1,374 bags with a volume of 150 litres of waste and 8 tons of large waste from the seabed (tires, plastic and construction material) were collected.

A total of 291 contents related to the LIFE Artina project were published in the media. The most announcements were made on social networks (147 in total), followed by digital media (120 in total) and the least in traditional media (24 in total). By the end of the project more announcements in the media are expected.

The data obtained from the survey of the local population show that the respondents see an increase in awareness of the need to preserve and protect the environment among the local population, a growth in recognizability of Lastovo and the training of the local community on ways to coexist with nature, as the greatest contribution of the project as. It has been also found that after the implementation of most of the project activities, the local population has better knowledge about seabirds, has better knowledge about the dangers that threaten seabirds, and has a more developed awareness of the importance of preserving seabirds. At the same time, a statistically significant difference was found in many variables between respondents who participated in project activities and those who did not. For this report, it is significant that statistically significant differences were found between these two groups of respondents in agreement with the following statements: the project has a positive effect on raising the profile of Lastovo, the project has a positive effect on increasing awareness of the need to preserve and protect the environment, the project has a positive effect on the informing of the local

population on the ways of coexistence with nature and disagreement with the claim that project activities have no real effects.

The project partners had a total of 51 employed persons on the LIFE Artina project, of which 10 persons were employed full-time during the entire duration of the project. In addition to the employees, 45 volunteers participated in the project activities and spent 5148 volunteer hours in Lastovo. Women predominated both among the employees and among the volunteers, of younger age - average age is 33 among the employees, and 25 among the volunteers. It was estimated that a total of 2,685 man/days were spent on Lastovo (not counting the employees of PI Lastovo archipelago NP). Considering this, an average contribution of 178,686.75 euros was calculated as an indirect contribution to the local economy.

In addition to the above indicators, the contribution of the project is also the creation of potential new project ideas and collaborations, one of which has already been realized (the LIFE TETIDE project that will last from 2023 to 2028).

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