

Final Evaluation Report

Your Details	
Full Name	Ilija Ćetković
Project Title	Determination of fishing effort on sharks by Montenegrin marine fisheries and multi-stakeholder informing about conservation of these endangered species
Application ID	25075-B
Grant Amount	£9975
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Date of this Report	25/04/2019

1. Indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
<p>Data collection regarding shark bycatch composition and abundance in Montenegrin fisheries</p>				<ul style="list-style-type: none"> - All 40 planned fieldwork days have been done within 4 fleet segments as it was planned - Fieldwork with big game fishing teams, pelagic longlines and trawls was performed as expected - The only problem occurred in impossibility of collecting of some data from set gillnets as there was their several different types, so CPUE data was not possible to obtain due to these differences - Nine species of sharks have been recorded as present in catches of Montenegrin fisheries (<i>P. glauca</i>, <i>I. oxyrinchus</i>, <i>A. vulpinus</i>, <i>H. griseus</i>, <i>O. centrina</i>, <i>S. canicula</i>, <i>C. plumbeus</i>, <i>M. mustelus</i> and <i>S. blainville</i>) - Definitely most abundant species was <i>S. canicula</i>, as it was caught by almost every examined gear and in great numbers in trawls (detailed biological, distribution and other data for all species have been presented in the study available on this project website) - CPUE data was calculated for the first time for sharks for the three gears in Montenegro (pelagic longlines, trawls and big game fishing)
<p>Informing national stakeholders about the conservation needs</p>				<p>This was done through:</p> <ul style="list-style-type: none"> - Organising a workshop called "Sharks in Montenegrin fisheries: problems, needs and possibilities" (21.03.2019) which was attended by the representatives of: Institute of Marine Biology, NGO Green Home, University of Montenegro, University of Belgrade, Public Enterprise for Coastal Zone Management, BIO-ICT Centre of

			<p>Excellence and Montenegrin Ecologists Society.</p> <ul style="list-style-type: none"> - Through sending the produced study to all relevant national stakeholders. - By organising face to face meetings with representatives of institutions. - By talks with local fishermen.
<p>Writing the study with collected data containing the possibilities and needs as segments of an action plan</p>			<p>- Study named "Composition and abundance of shark by-catch in Montenegrin fisheries" was developed and produced in consultations with expert Ana Katnić (NGO Environment Programme)</p> <ul style="list-style-type: none"> - The study provides comprehensive and detailed insight into the distribution of shark species in target area, their relative abundances and interactions with fishing gears, socio-economic data collected on fieldwork and supplemented by the recent data obtained from the Ministry of Agriculture and Rural Development for the year 2017. - Study also provides insight into potentials and needs observed at fieldwork and through desktop analysis of available documentation and papers
<p>Informing relevant international stakeholders about the project and its results</p>			<p>This was done through:</p> <ul style="list-style-type: none"> - Sending the produced study to regional and international stakeholders and scientists (to the General Fisheries Commission for the Mediterranean – GFCM, to the IUCN Shark Specialist Group, to the Mediterranean Science Commission - CIESM, to the RAC/SPA centre and its representatives dealing with shark conservation, to the several scientists dealing with this kind research in the region). - By attending the major conference on fisheries science in the Mediterranean named FishForum (held on 10-14th December 2018 at FAO Headquarters in Rome, Italy in GFCM/FAO organisation) and presenting a poster named "Preliminary assessment of shark by-

			<p>catch in pelagic fisheries of South-eastern Adriatic (Montenegro)"</p> <ul style="list-style-type: none"> - By attending the Rufford Small Grants Conference in Silver Lake, Serbia in September 2019. - By the acceptance of a scientific paper entitled "Morphometric measures of new-born blue shark <i>Prionace glauca</i> (Linnaeus, 1758) and characteristics of its potential parturition areas in coastal waters of Montenegro (South-eastern Adriatic)", which will be published in June 2019 in the next issue of the SCI journal "Acta Adriatica". - We also participated in evaluation of implementation of Action Plan for Cartilaginous fish in the Mediterranean for the period 2014-2019 as we was invited to fill out the RAC/SPA questionnaire regarding this.
<p>Informing wider community in Montenegro</p>			<p>This was done trough:</p> <ul style="list-style-type: none"> - Publishing newspaper article in "Pobjeda" newspaper in May 2019 which was shared by many national and regional web portals, newspaper sites etc. which are detail described and available in project's June report. - Through designed project's website with photos and videos from the fieldwork (https://mnesharks.wordpress.com). - By social media of Montenegrin Ecologists Society and trough produced video clip about shark conservation facts on Montenegrin language. - Through school presentation in coastal area and sharing of produced leaflets and posters, trough T-shirts shared to the fishermen and colleagues. - Through participating in the Coast Day campaign organised by PE for Coastal Zone Management where we presented sharks as a theme for 2019.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

There was a limitation occurred in collecting data from gillnets and trammel nets. We collected the data about species distribution, but CPUE data was not possible to calculate. Depending on the target fish species, these nets have various forms and types with differences in mesh sizes, height, type of material etc.. As there is likely a difference in CPUE values for each type, we excluded its calculation for this type gears.

There was some smaller time changing among activities due to team and fishermen personal obligations and weather conditions. Also, workshop was not held in November 2018 as planned, but in March 2019 in order to have the study available for presentation and not just mostly raw data.

3. Briefly describe the three most important outcomes of your project.

1. The production of the study "Composition and abundance of shark by-catch in Montenegrin fisheries" which is the first officially produced scientific document dedicated to sharks in this area. It will be of usage for both national and international stakeholders in preparation of strategic documents and legislation regarding this theme.

2. Participating in the FishForum conference for which we was invited and granted by the organisers from FAO and GFCM. It was a major conference for fisheries sciences in the region and first of its kind organised by GFCM. The abstract of the poster presentation is published in the official conference's book of abstracts.

3. Spreading the real facts about sharks and the needs for their conservation in this part of the Adriatic Sea among fishermen, institutions and wider community trough workshops and educational materials and articles.

4. Briefly describe the involvement of local communities and how they have benefited from the project.

Local community was involved in the project through interactions with leaflets, posters, articles and other educational material which helped them to understand the real nature of sharks. Children in schools learned about these animals and were given by true facts which should help them in forming good attitudes towards these animals. Fishermen also benefited by gathering different kind information, about endangered sharks, the causes why the situation is like that, what they can do in order to improve it etc. Institutional stakeholders benefited from obtaining shark specific data related to Montenegro which will help them in the processes of protection of marine environment and species. Scientific community benefited by publishing papers and presentations on this theme which they can use in different purposes. Project team and volunteers benefited by achieving more knowledge and experience in this research which will use them in the future work.

5. Are there any plans to continue this work?

During this project, we was granted by the Waitt Foundation with a small grant in order to explore the status of rays in Montenegro. There is a plan to join this research with one dedicated to sharks, so we can cover all elasmobranchs in the future. For now, we will think briefly about the next steps in order to find out what should be done next.

6. How do you plan to share the results of your work with others?

They are already shared by sharing the study publication to the relevant stakeholders and to the scientific community as it is available on ResearchGate and Google Scholar. Produced papers will also be available on them.

7. Timescale: Over what period was the grant used? How does this compare to the anticipated or actual length of the project?

Grant was used from April 2018 to March 2019 and it was more or less as planned.

8. Budget: Provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Additional expenses	250	250		Half was used for the preparation of material for the workshop and another half where needed.
Fuel for the meetings	150	109	-41	
Design and printing of the study (100)	900	996	+96	Study was bigger than we expected (41 pages)
Salary for the expert for the assistance in study preparing	750	751	+1	
Food and drink for the participants	375	462	+87	More than we expected
Projector for the presentations	500	505	+5	
Fuel for the participants of the workshop	500	272	-229	Less participants came than we expected (15 was present)
Renting the space for	400	317	-83	It was less than we expected

the workshop				
Fuel for school presentations	200	109	-91	
Producing of short video clip about shark facts in Montenegro and the project	400	493	+93	More than we expected
T-shirts (100)	800	821	+21	
Educational posters (100)	350	427	-77	Because of a better material
Educational leaflets (2000)	450	438	+12	
Fishing equipment for 10 days of big game fishing fieldwork	150	163	-13	
GPS for data collecting	300	331	-31	
Sardines for 10 days of big game fishing fieldwork	300	317	-17	
Fuel for fieldwork	800	765	+35	
Daily allowance for fieldwork	2400	2450	-50	
Total	9975	9976	+1	

9. Looking ahead, what do you feel are the important next steps?

Now, when solid dataset for Montenegro has been collected and the situation is assessed at local level, there is a need to join more regional initiatives and projects which will be a next task for the project team. Also, we plan to continue the data collecting and will tend to cover rays as another group of cartilaginous fish for which data is still poor in this area. This will be done through applying for one bigger or maybe two small grants in the next period as it was explained before.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the Foundation receive any publicity during the course of your work?

The Rufford Foundation logo was used on every produced material, on: t-shirts, posters, leaflets, study and scratch pads and folders prepared for the workshop. Also it was on the poster presentations on two conferences that we attended. The Rufford Foundation received publicity by its mentioning in newspaper and online articles on many websites. It received publicity and will continue receiving it among researchers and scientists through acknowledgements sections of the study, article in the SCI journal "Acta Adriatica", paper prepared for the FAO/GFCM FishForum conference and by their online versions on ResearchGate and Google Scholar.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

Evald Beli Alivodic and **Mirko Dragovic** were the two local fishermen who joined our research, participated in data collection and communication with other members of fishermen community. We used their fishing equipment and boats for the previous project and the 10 days of big game fieldwork of this one.

Marko Nikolic is an employee of the Institute of Marine Biology who helped us in data collection and analyses process. He was participating in study writing through giving comments and revisions as well as for the two scientific papers where he is a co-author. He presented the project and its results at the Rufford Small Grants Conference at Silver Lake in Serbia in September 2018.

Stefan Ralevic had the same role as Marko and was also collecting the data in the field. He was collecting the questionnaire data among fishermen community. He is also a co-author of the produced papers for which he was giving revisions and helped in preparation of their data.

Expert consultant **Ana Katnic** from the NGO Environment Programme was of great help while study methodological approach was prepared and in data presentation and processing. Her advices were significantly contributed to the study actual look and design.

We own thanks to the:

- members of Montenegrin Ecologists Society, **Sladjana Gvozdencic**, **Vuk Ikovic** and **Mihailo Jovicevic** who helped us by giving comments and revisions during the study writing process. Mihailo significantly helped us for the design of the study with his knowledge in the Adobe InDesign programme.

- members of laboratory for ichthyology and marine fisheries **Ana Pesic** and **Aleksandar Joksimovic** who helped us by revision of the scientific papers and by reporting the shark catches they occurred.

- to the Directorate for Fisheries in the Ministry of Agriculture and Rural Development whose employees shared their socio-economic data for the year 2017 with us.

12. Any other comments?

We want to thank to The Rufford Foundation for supporting us in this research.



Left: Workshop Sharks in Montenegrin fisheries problems, needs and possibilities. Right: Children in elementary school learning about sharks.



Left: Trammel net fishing in the area of Budva. Right: Local fisherman while cleaning a specimen of a smoothhound in Petrovac.



Left: Longnose spurdog (*Squalus blainville*) caught while fieldwork with a trawl. Right: Common smoothhound (*Mustelus mustelus*) caught close to Ada Bojana.



Measuring bluntnose sixgill shark (*Hexanchus griseus*) caught near Buljarica.