CEPF FINAL PROJECT COMPLETION REPORT

Organization Legal Name:	Centar za Krš i Speleologiju (Center for Karst and Speleology)		
Project Title:	Protection of Bats in the Neretva River Catchment Area		
Date of Report:	24th August 2015		
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CEPF Region: Mediterranean Biodiversity Hotspot

Strategic Direction: Improve the conservation and protection status of 44 priority key

biodiversity areas

Grant Amount: 40780 USD

Project Dates: Started on 1st June 2013, Ended on 31st May 2015 (24 months)

Implementation Partners for this Project (please explain the level of involvement for each partner):

"Hrvatsko biospeleološko društvo" (Croatian Biospeleological Society) from Zagreb and the "Slovensko društvo za proučevanje i varstvo netopirjev" (Slovenian Society for the Study and Protection of bats) from Ljubljana offered their in kind collaboration for training and field work.

Conservation Impacts

Please explain/describe how your project has contributed to the implementation of the CEPF ecosystem profile.

The project addressed directly at least two of the investment priorities within the strategic direction 3 (Improve the conservation and protection status of 44 priority key biodiversity areas). In detail through this project we identified important bat protection hotspots which should be considered for protection (for example the large colony of R. blasii) and in parallel we improved the knowledge of bats population to be managed within the already existing protected areas. These results support the achievement of investment priority 3.1. (Establish new protected areas and promote improved management of existing protected areas by developing and implementing sustainable management plans).

Similarly, the project successfully contributed to the priority investment point 3.3. (Raise awareness of the importance of priority key biodiversity areas, including those that have irreplaceable plant and marine biodiversity) by providing an inventory of species and populations trend in three of the key biodiversity areas. This project contributed to fill an important knowledge gap and it promote and raise awareness of the importance of the protection of this region. The results of this project form an initial set of data to allow knowledge-based decision making and to establish target actions for the protection of bats in the region leaving a long lasting heritage towards the long terms goals.

Please summarize the overall results/impact of your project.

Planned Long-term Impacts - 3+ years (as stated in the approved proposal):

This project will foster a sustainable development of the region by promoting bats as a valuable natural resource to be included in existing and new protected areas management plans and other spatial planning documents as part of the wide objective to defend the outstanding biodiversity of this key area.

Actual Progress Toward Long-term Impacts at Completion:

This project fostered a sustainable development of the region by promoting bats as a valuable natural resource to be included in existing and new protected areas management plans and other spatial planning documents as part of the wide objective to defend the outstanding biodiversity of this key area. Although the "Agreement on the Conservation of Populations of European Bats, EUROBATS" has not been signed yet by the B&H Government, there are clear evidences that the bats, after project implementation, are increasingly considered a valuable resource and their needs and protection included in the regional decision making process. For example at least two large wind-farm projects (one of them within the CEPF hotspot region) required a background assessment on the impact on bat population and included the requirements for a bat monitoring plan. Another indication is provided by the fact that the Sarajevo Cantonal Ministry of Education and Sport had co-financed the organization of the Second International Bat Night and this has been organized both in Sarajevo and Banjaluka. This event is now scheduled regularly every year and it is planned to be extended also to other major cities. When looking in general terms to underground biodiversity, thanks to the reference of CEPF projects CKS were able secure a grant from the Sarajevo Cantonal Ministry of Spatial Planning and Environment for the study of the biodiversity of the underground fauna of the high mountains of the Sarajevo Canton. A multiple years agreement for the monitoring of bats in the protected areas of Sarajevo Canton have been signed between the public managing company (JU "Zaštićena prirodna područja KS) and our NGO.

Planned Short-term Impacts - 1 to 3 years (as stated in the approved proposal):

In addition to an improved perception of bats among the general public, this project will provide know-how transfer and capacity building for local environmental NGOs, public officers and scientific community and it will stimulate networking between local actors and international experts fostering future collaborations and common actions. The preliminary monitoring of bats in the key priority areas set up through this project will fill an important knowledge gap allowing already in a short period of time after project completion a more evidence-based management and act as pilot project to be maintained and updated after completion with the potential to be expanded to the whole B&H territory.

Actual Progress Toward Short-term Impacts at Completion:

In addition to an improved perception of bats among the general public, this project provided know-how transfer and capacity building for local environmental NGOs, public officers and scientific community and stimulated networking between local actors and international experts. The most evident impact of this project is the creation of an informal (so far) group of people interested in bat conservation from different local groups, NGOs, regions and backgrounds in Bosnia and Herzegovina. This group acts under the coordination of the CKS and was presented during the annual meeting of speleologists in Bijambare on May 2015. Among first activities is the creation of a special bulletin (with an editorial board inclusive of international experts) dedicated to bats researches and published as annex to the CKS bulletin "Naš Krš". First issue has been published, second issue is in print while third issue is under preparation. Thanks to several implemented activities such as the organization of the First International Bat Night in Bosnia and Herzegovina, the brochure and the documentary movie on bats the project achieved a positive impact on the general public awareness on the role of bats in the ecosystem and the need of

their protection. The International Bat Night became a traditional event organized every year by a larger number of NGOs and in different locations in Bosnia and Herzegovina. The provided training created a first nucleus of people with basic knowledge to perform bat monitoring activities which are now actively working in close contact with international experts to expand the database of bats population and hibernation/nursery sites not just in the CEPF hotspot region but in the whole country. Additional training are already foreseen after the conclusion of this project. The preliminary results collected during this project already include new important data on colonies and species (at least one large colony of *R. blasii* which has to be considered of national or even higher importance considering that this specie is classified as extinct in several countries in the region Italy and doubtfully Slovenia) which are located in areas requiring special attention due to ongoing projects (e.g. wind-farms). In less than two years, within the new database, are recorded data of 15 species. More than half of all known species of bats in B&H so far.

Please provide the following information where relevant:

Hectares Protected: /

Species Conserved: collected new data about 15 species over the 28 known bat species in B&H **Corridors Created:** /

Describe the success or challenges of the project toward achieving its short-term and long-term impact objectives.

We believe that the project successfully contribute to toward the achievement of short-term and long-term impacts objectives. With regards of short-term impact the project achieved results which in part even exceed our expectations as described in the project components. However, there are still important challenges to be addressed such as the difficult of movement on the field in several regions and the still relatively low number of person contributing to the bat monitoring in B&H (even more if compared to the still wide knowledge gap to be filled). With regards to long-term impact, the "Agreement on the Conservation of Populations of European Bats, EUROBATS" has not been signed yet. In our opinion, there is a general challenge in promote a change in the perception that governmental sector has about NGOs and especially small NGOs based on volunteers (often regarded only as antagonist or in general not able to provide high quality results in their activities). We believe that improving positive collaboration and respect between these sectors may unlock large human resources and enthusiasm to achieve the sustainable conservation of bats (and nature in general) especially in times where financial resources are limited.

Were there any unexpected impacts (positive or negative)?

On the positive side the finding of the large colony of R.blasii surely surpassed our more optimistic expectation in terms of results from the field activities. This finding raise the impact of this project from a local/national level to the wider international/regional level. On the other side we expected much more interest and involvement from the institutional sector. It is therefore of paramount importance to improve this aspect in future activities in order to increase the impact among decision makers of collected results.

Project Components

Project Components: Please report on results by project component. Reporting should reference specific products/deliverables from the approved project design and other relevant information.

Component 1 Planned (as stated in the approved proposal): Raise awareness

• Brochure including information on bats ecology, threats and protection needs. 250 copies will be printed and distributed to main stakeholders, schools and during public events.

- The "Bat Night" event is organized in a selected location within the key biodiversity areas. The "Bat Night" is an international event promoted by the UNEP / EUROBATS secretariat and organized every year in more than 30 countries. It has never been held in B&H.
- A 10-15 minutes documentary film on bats.

Component 1 Actual at Completion:

With the help of the project "Protection of bats in the Neretva River Catchment Area", financed by CEPF – Critical Ecosystem Partnership Fund, the Center for karst and speleology Sarajevo has organized the European Bat Night, which was held in Čapljina, nearby hotel Mogorjelo on 24th and 25th August 2013. The European Bat Night takes place every year in more than 30 countries in Europe. The European Bat Night takes place since 1997 under the auspices of the UNEP/EUROBATS Agreement on the Conservation of Populations of European Bats in order to raise public awareness about the need and importance of bats protection. The States Parties organize the various apposite activities which seek to inform the public about the role of bats in the ecosystem, the reasons for their vulnerability and need for protection, as well as ways of how it can be achieved a harmonious coexistence between humans and bats. This is the first time for Bosnia and Herzegovina to join the other European countries in the organization of this event. Although bats are one of the most endangered mammals in the world, Bosnia and Herzegovina is the only country in the region that has not yet signed the Agreement on the Conservation of Populations of European Bats. European Bat Night, besides the public animation, should serve as another reminder to the Government of Bosnia and Herzegovina on necessity of signing the Agreement, For the European Bat Night in Capliina, Center for karst and speleology has organized lectures, film screenings, a photo exhibition and games for children. Lectures were held by the members of the Croatian Biospeleological society, MA Daniela Hamidović and biology graduate Petra Žvorc. For this occasion, the Center has printed on a 16 pages a brochure, which in popular way provides basic information about bats (available for download at http://www.centarzakrs.ba/bats/baats/Brosura sismisi web.pdf). The authors of the text are Jasmin Pašić and Jasnminko Mulaomerović, and photos are the courtesy of bat researchers from Slovenia, Serbia and Bosnia and Herzegovina. Within the project, it was made the film "Bats need friends" (12 minutes), which premiere was on this event, and in the future work of the Centre for Karst and speleology it will serve for popularization of bats and their protection. The film was distributed to local TV stations in Bosnia and Herzegovina, and some of them have already presented to its viewers (the film is available at: http://www.centarzakrs.ba/bats/video.html) During the preparations for the European Bat Night, in a concrete bridge over the Neretva River it was discovered a colony of bats Nyctalus noctula. It is the first of its kind registered in Herzegovina. Also, in nearby apartment buildings, thank to its residents it was registered a small colony of bats *Pipistrellus* sp.. For the participants of the European Bat Night it was especially interesting demonstration of capturing, determination and measurement of basic morphological characteristics of bats. For the first time, the children from Capljina were able to touch (fondle) their "first neighbors" and to break the misconception about bats as bloodthirsty animals. The children has the opportunity to participate in the game of making bats of paper (the technique of origami), and could also enjoy in sweet cakes in the shape of a bat which were made by the member of the Center. The local partner in the organization of European Bat Night was the association "Lijepa naša" from Čapljina.

Center for Karst and speleology participated to the international researcher night held on 27th September 2013. This event financed by the European Union was for the second year organized in Bosnia and Herzegovina and for the first time in Sarajevo. Our Center had the opportunity to show to a large public of all ages its research activities in karst regions, caves and in detail the results of current projects financed by CEPF on protection of bats in the Neretva region and protection of underground biodiversity in the Neretva catchment area. Our volunteers were positively surprised by the extreme curiosity shown by children when looking at bats pictures, documentary and the time spent to play with a simplified key for determination of few bat orders,

a special attraction we have created just for them. It worth to say that our brochure on bats was a success and only few copies are left.

More informations at:

http://www.centarzakrs.ba/bats/aktuelnosti/40-center-for-karst-and-speleology-participate-to-the-international-researcher-night.html

http://www.centarzakrs.ba/bats/aktuelnosti/38-in-bosnia-and-herzegovina-for-the-first-time-was-organized-the-european-bat-night.html

http://www.centarzakrs.ba/bats/aktuelnosti/37-u-bosni-i-hercegovini-prvi-put-obiljezena-manifestacija-evropska-noc-sismisa-saopcenje-za-medije.html

http://www.centarzakrs.ba/bats/aktuelnosti/36-saopcenje-za-medije-povodom-odrzavanja-manifestacije-evropska-noc-sismisa.html

http://www.centarzakrs.ba/bats/aktuelnosti/35-evropska-noc-sismisa-u-capljini.html http://www.centarzakrs.ba/bats/video/30-video-evropska-noc-sismisa-u-capljini-najava.html

Component 2 Planned (as stated in the approved proposal): Monitoring bat population

- Open training course (2-3 days with international experts as lecturers) on bat monitoring techniques. Presentations material, will form a short beginner manual on bat monitoring distributed to participant. A short report about this training course will be prepared.
- Report on the preliminary evaluation of the database status and required improvements.
- Final database containing information on bat population, nursery and roost sites. Full database will be delivered to relevant governmental organization (parks, ministries spatial planners ...). The database will be available to the general public but with limited access to information classified as sensible (i.e. exact coordinates of large colonies sites ...).
- A summary report containing the project results on bat status in the investigated areas and the identification of hot spots requiring protection. This report will be delivered together with the database to all potential stakeholders.

Component 2 Actual at Completion:

The training (hold in Buna – Trebižat on 16-18 August 2013) was designed to give the basis for the monitoring of bats to members of caving societies, societies for the protection of the environment, scholars, employees of nature parks, and employees in the cantonal and federal ministries of environment, agriculture and forestry (http://www.centarzakrs.ba/bats/aktuelnosti/34-trening-istrazivanje-i-monitoring-sismisa-16-18-8-2013-buna-trebizat.html). The theoretical part took place in the area Podvelezje Mountain (in the area where it is planned the construction of a wind farm) while the practical field exercises were conducted in the area of the rivers Bregava and Trebižat. Training was conducted by Presetnik Primoz (Slovenia) and Jasminko Mulaomerović (B&H). The theoretical part covered the types of bats in B&H, distribution, daily and seasonal activities of bats, hibernation, echolocation, diet, habitat and protection of bats. A special part has been dedicated to the protection from the perspective of legal regulations (EU standards and domestic law). In the end, discussion has been conducted for the coordination of future activities to include research and monitoring hibernating bats as well as the practical implementation of cooperation between all interested parties.

Center for Karst and Speleology Sarajevo in cooperation with the firm ContentBA from Sarajevo has developed a software solution for winter bat monitoring and monitoring of their sites (http://www.centarzakrs.ba/bats/aktuelnosti/51-aplikacija-za-monitoring-sismisa-application-for-bat-monitoring.html). This software application uses all the advantages of the "cloud computing" technology where all data are recorded and stored locally in computers and in the "cloud" as a backup. Every new item that is entered in the system automatically becomes available for review to all interested parties via the Web interface on a PC, smart phone and tablet devices, etc.

Several entries in the database were provided by old data collected by the CKS during the years before project start. Considering only the 18 months duration of the field work foreseen by the

project, 23 localities (mostly caves but also old buildings and constructions) have been visited. Several of these location have been visited multiple time to monitor trends in bat population. 15 species (more than half of the species known in B&H) have been recorded during the field visits. Of these species at least large and important colonies of *R.blasii* and *N.noctula* have been discovered.

Component 3 Planned (as stated in the approved proposal): Involving the scientific community

• Award to the best scientific work on conservation of bats in Bosnia and Herzegovina assigned by an independent international expert team. Presented works and the report from the judging commission will be prepared in the form of a deliverable.

Component 3 Actual at Completion:

Center for Karst and Speleology organized an open competition for the best scientific or professional paper (published or in manuscript) on "Bats — Research and Protection", within the framework of the project "Bats protection in the Neretva River Catchment Area", supported by CEPF - Critical Ecosystem Partnership Fund.

The competition was open from October 1, 2013 to February 15, 2015 for young researchers under the age of 35 years. 11 papers have been received, reviewed and evaluated by the international jury composed of Bojan Petov (Bulgaria), Branko Karapandža (Serbia) and Primož Presetnik (Slovenia). In addition to the first and second places that received a prize from this project (in terms of equipment for further researches), the members of the jury decided to add at their own expenses a special prize to a third work (a book with key for the determination of European bats). The authors of awarded papers have been presented during the final project workshop.

Component 4 Planned (as stated in the approved proposal): Project results dissemination

- A workshop will be organized at project beginning. The main aim is to invite and involve
 in the project activities since early stage potentially interested parties from government
 representatives, schools and universities and scientific community, parks and other
 NGOs. Note of meeting will be created.
- A second workshop will be organized at the end of the project in order to present achievements and discuss follow up activities with beneficiaries and stakeholders. This workshop will be open for presentations from third parties related to the protection of bats. All contribution will be summarized in the form of short proceedings.

Component 4 Actual at Completion:

First workshop has been hold in Citluk on 28th June 2013 with more than 40 participants. During the event also other CEPF projects or potential projects in the area have been presented. More information at:

http://www.centarzakrs.ba/bats/aktuelnosti/33-radionica-cepf-the-mediterranean-basin-biodiversity-hotspot-ongoing-and-potential-small-and-large-grants-in-bih.html

The final workshop within the project "The protection of bats in the Neretva river catchment area" was held in March 28th 2015 in Blagaj. The workshop was attended by some 40 participants from academic community, protected areas and non-governmental sectors. Unfortunately no participant from the governmental sector was recorded. Dr. Jasminko Mulaomerović, project coordinator presented the results of the project. Invited lectures held Primož Presetnik from the Center for cartography of flora and fauna in Ljubljana on the topic "The importance of bats" and Branko Karapandža of MM Consulting from Belgrade, who spoke about the legislation of Bosnia and Herzegovina (including entities laws) and the protection of bats, especially in terms of accelerating demand for the construction of major infrastructure facilities, especially wind power

parks. In the discussion after the lecture, they also talked about the continuation of activities, in particular on possible practical steps to protect bats in this area, but in the whole of Bosnia and Herzegovina. The winners of the competition for the best scientific or professional work on "Bats - Research and Protection" were presented during the workshop. The presence of two leading experts in the region to detect bats with bat detector was the opportunity for the analysis of recordings made by some of the participants. It turned out, as many times before, that in Bosnia and Herzegovina can expect the unexpected results (eg. *Tadarida teniotis* in Sarajevo). More information at:

http://www.centarzakrs.ba/bats/aktuelnosti/58-finalna-radionica-u-okviru-projekta-zastita-sismisa-u-donjem-toku-rijeke-neretve.html

Were any components unrealized? If so, how has this affected the overall impact of the project?

All components were fully and successfully realized

Please describe and submit (electronically if possible) any tools, products, or methodologies that resulted from this project or contributed to the results.

- Brochure on bat protection (http://www.centarzakrs.ba/bats/baats/Brosura_sismisi_web.pdf)
- Documentary film Bats need friends (http://www.centarzakrs.ba/bats/video.html)
- Application/database for monitoring of bats (http://www.centarzakrs.ba/bats/aktuelnosti/51-aplikacija-za-monitoring-sismisa-application-for-bat-monitoring.html)
- Final report on bat population in the Neretva River catchment area.

Lessons Learned

Describe any lessons learned during the design and implementation of the project, as well as any related to organizational development and capacity building. Consider lessons that would inform projects designed or implemented by your organization or others, as well as lessons that might be considered by the global conservation community.

Project Design Process: (aspects of the project design that contributed to its success/shortcomings)

 This project represents the largest and more complex activity that our NGO designed so far. This process represented a challenge from as early as the proposal stage. Through the design of these set of activities, budget and performance targets (thanks to the patient help from CEPF team) we improved our capacities and increase the know-how of our organization.

Project Implementation: (aspects of the project execution that contributed to its success/shortcomings)

• We recognized from the early project design that volunteers can provide a value added in the conservation of bat species allowing our NGO to realize an ambitious project with a relatively limited budget. However, we also recognized that volunteer's involvement cannot fully predicted and managed. We were aware that this could lead to the risk of fail to meet the project implementation schedule and that some activities may be delayed because less appealing for volunteers. For this reason we decided to include one person employed part time to support our NGOs volunteers. This person was able to buffer volunteer's activity fluctuations and to push ahead activities where less or no volunteers were found. We believe that this combination of volunteers and paid staff was a key point for the implementation success of the project whose planned activities did not encountered any major delay. • In general the whole implementation of this project can be considered for our NGO a lesson learnt. Assisted continuously by CEPF staff we succeed to fulfill project requirements in terms of performance and financial reporting which was completely new for us. This is a very important capacity building activity and developed know-how which, we hope, will allow us to unlock new sources of funding for our future activities.

Other lessons learned relevant to conservation community:

- During the organization of project activities we always strived to use the time and resources for multiple purposes. Field exercises organized during the 2 days training, were performed in locations where we actually needed data for our database. During the first International Bat Night, time was also spent to investigate the surrounding are in search for bats. The final workshop evening was opportunity to discuss with international experts on the interpretation of signals recorded by bat detectors. This approach paid off. During the training was collected data of a large number of species (making the 2 days the most intensive data collection period in the project). The most important discovery (the colony of R.blasii was also done during training field activities. During the international bat night 2 important colonies were discovered (N.noctula and P.pipistrellus) while during the evening of the final workshop the echolocation signal of T.teniotis (a bat only detected couple of time in B&H) was discovered within old sound records. So, always expect the un-expectable.
- We are also happy to see that this project, and more in general our NGO became soon a
 gravitational center for a group of interested person in bat conservation from several
 cities and groups around B&H. The project received a very good feedback from the
 public during the International Bat Night Event and a positive judgment from
 international experts. This however is partially contrasted by the low level of
 involvement, interest and responsiveness from the institutional (governmental) sector.
 This last issue will require to be resolved to unlock all positive potentiality of a
 collaboration between non-governmental and governmental sectors.

Additional Funding

Provide details of any additional funding that supported this project and any funding secured for the project, organization, or the region, as a result of the CEPF investment in this project.

Donor	Type of Funding*	Amount	Notes
Kanton Sarajevo, Ministarstvo za obrazovanje, nauku i mlade	B	1800 BAM	Co-financing of the second edition of the International Bat Night (2014)
Kanton Sarajevo, Ministarstvo prostornog uređenja i zaštite okoliša	В	3080 BAM	Co-Financing of the study for the biodiversity of the underground fauna of the high mountains in Canton Sarajevo
Javna ustanova Zaštićena prirodna područja Kantona Sarajevo	В	1500 BAM	Yearly monitoring of bats in the protected area of Bijambare (2015)

^{*}Additional funding should be reported using the following categories:

- A Project co-financing (Other donors or your organization contribute to the direct costs of this project)
- **B** Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF funded project.)
- C Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)

Sustainability/Replicability

Summarize the success or challenge in achieving planned sustainability or replicability of project components or results.

The activities foreseen in the project were specifically aimed to create a sustainable effect for future conservation of bats. The database, managed and filled by volunteers, is now updated and expanded with little needs of funding (although availability of additional funding may enable to increase quality, extension in the territory and coverage in time). The database is now operative and already extended with data collected in localities outside the CEPF project region also thanks to the set of equipment purchased during this project.

Raising awareness on bats conservation (and the references and experience gained implementing the CEPF Projects) also positively increased our capacity to attract more funding from the public sector. Events like the "Bat night" have been already repeated including other cities and obtained co-financing from Ministry.

Summarize any unplanned sustainability or replicability achieved.

The fact to receive immediately financial support for the second edition of the "Bat Night" event and signature of agreement for the monitoring of bats in the Bijambare protected area surpass our most positive expectations. Also the formation of an informal group of people interested in Bat conservation over the whole B&H territory which already succeed in the publication of results represent an achievement that was not expected in so short time.

Safeguard Policy Assessment

Provide a summary of the implementation of any required action toward the environmental and social safeguard policies within the project.

Not Applicable

Additional Comments/Recommendations

CEPF is by our opinion one of the rare project funding that support small NGOs to make their big step towards more complex projects and larger grant schemes. Most of other granting opportunity set up criteria much more stringent locking more NGO to relatively small grants without the opportunity to gain first experience, technical and financial references for applying with larger projects. We hope that CEPF will continue on this road helping and educating local conservation NGO to achieve long-term sustainability.

Information Sharing and CEPF Policy

CEPF is committed to transparent operations and to helping civil society groups share experiences, lessons learned, and results. Final project completion reports are made available on our Web site, www.cepf.net, and publicized in our newsletter and other communications.

Please include your full contact details below:

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