Dear Ouranios

Thank you for completing the Grant Final Reporting Form, it has been a pleasure working with you. A copy of your submission is attached.

1. You and your project (1/10)
Project Name
Phylogenetic characterization of indigenous Cyprus cattle
First Name
Ouranios
Last Name
Tzamaloukas
Organisation name
Eratosthenis Center Of Excellence
Email
ouranios.tzamaloukas@cut.ac.cy
Are you the person named above?
Yes
1.2 Did you spend the total grant amount as planned?
Yes
1.4 Overall, how did the project go and, in your view, what are the project's greatest achievements? Please specify anything you are particularly proud of, anything unexpected that happened or any challenges or issues that arose. *(Max 1000 words)*
This was the first step of a larger project that aims to support the survival of the breed on the island, promotes its products and incorporate the breed in ecological rebuilding projects through grazing and soil regeneration.
2. Partnerships (2/10)
In your application form, you told us you were going to work with the following partners to deliver your project.
Local NGO leaders, Environmental scientists and marine biologists, Volunteers, Educational institutions, Local farmers/land owners, Local government/politicians
Other Partners
There are not other partners
Partners
Type of partner
Local farmers/land owners
How many of these did you engage with?
30
Please provide a bit more information about these partners and their role in the project. *(Max 250 words)*
Firstly, without the contribution of these farmers the program would be impossible to complete. The blood samples were collected from their farms and much of the information concerning the animal management was obtained from farmers.
3. Target groups (3/10)
In your application form you told us you were going to attempt to engage with and influence the following target groups. Please skip this question if not applicable.
Local residents, Farmers, Academic institutions and universities, Local government or politicians
Other Target Groups

Target Groups
Target Group
Local residents
Please describe how the interaction with the target group went. For example, provide information about what activities took place, whether the project was well received, were people interested and engaged.
They informed about the project and the existence of the Cyprus bovine breed in general through the social media of the farmers and by word-of-mouth.
How many individuals did you engage with?
250
How did you engage with them? Tick all that apply.
- Face to Face (direct interaction, events, meetings etc.)
- Online (digital communications, webinars etc.)
How many did you engage with face-to-face?
50
How many did you engage with online?
200
Target Groups
Target Group
Farmers
Please describe how the interaction with the target group went. For example, provide information about what activities took place, whether the project was well received, were people interested and engaged.
All Cyprus bovine breed farmers were informed about the project.
How many individuals did you engage with?
30
How did you engage with them? Tick all that apply.
- Face to Face (direct interaction, events, meetings etc.)
How many did you engage with face-to-face?
30
Target Groups
Target Group
Local government or politicians
Please describe how the interaction with the target group went. For example, provide information about what activities took place, whether the project was well received, were people interested and engaged.
At least ten people from the local ministry, the minister of agriculture himself and other local stakeholders have been informed about the project, benefits of environment and society, through arrange meetings.
How many individuals did you engage with?
10
How did you engage with them? Tick all that apply.
- Face to Face (direct interaction, events, meetings etc.)
How many did you engage with face-to-face?
10
4. Social and other media reach (4/10)
Instagram
Facebook
Twitter
Twitter Links
Twitter Links

LinkedIn
Twitter Links
TikTok
Twitter Links
Other platforms
Please comment on how your social media coverage went. *(Max 500 words)*
4.2 Did your project receive any other media coverage?
No
5. Deliverables (5/10) Deliverables
Deliverable on original application?
Yes
Deliverable
D1. Map of cattle blood sampling across Cyprus
Deliverable Description
Create a map with location of the farms that the sampling of cattle blood took place
Overall, how satisfied are you that this deliverable has been met?
Very satisfied
Please explain your answer and provide links or upload any supporting documents, images, or other materials. *(Max 500 words)*
As you could notice in the attached file below, the sampling took place across the country, both mountainous and lowland regions, to cover as much as possible the variability existed within the breed. Moreover, in order to examine the scientific questions of the study, the target of our blood sampling for the Cyprus Cattle Breed was set to be the 10% of the total population which is a large number for those studies.
Deliverables
Deliverable on original application?
Yes
Deliverable
D3. Allele database creation
Deliverable Description
Creation and maintenance of a database with the alleles that will be identified during optimization
Overall, how satisfied are you that this deliverable has been met?
Very satisfied
Please explain your answer and provide links or upload any supporting documents, images, or other materials. *(Max 500 words)*
Using the ABI PRISM 310 Genetic Analyzer, the sizes of the alleles for each of the 18 microsatellite loci were recorded for the total of collected samples. Subsequently, Tables 1-4 present the names for each genetic locus, the chromosomal position where they are located, the repeat sequence that is amplified, the size range of the amplicon length, the number of alleles for the 18 genetic loci (TGLA227, BM2113, TGLA53, ETH10, SPS115, SPS113, RM067, TGLA126, TGLA122, INRA023, BM1818, CSRM60, MGTG4B, CSSM66, ILST006, ETH3, ETH225, and BM1824) that were amplified, and the mean number of alleles per locus for animals of the commercial Holstein-Friesian and the indigenous Cyprus Bovine breed.
Deliverables
Deliverable on original application?
Yes
Deliverable
D4. Optimized protocols for Cyprus Cattle Breed genetic analysis

Deliverable Description

Optimized protocols for genetic analysis of Cyprus Cattle Breed will be written for any future user

Overall, how satisfied are you that this deliverable has been met?

Very satisfied

Please explain your answer and provide links or upload any supporting documents, images, or other materials. *(Max 500 words)*

DNA was isolated from blood samples, optimising the number of reagents used and the centrifugation time. At the same time, isolation of leukocytes from whole blood was performed, while NanoDrop was used for DNA quantification. The samples were then diluted and used for PCR analysis with the Thermo Scientific Bovine Genotypes Panel 3.1, according to protocols presented below. Agarose gel electrophoresis was performed to visualize the amplified DNA fragments. The PCR products were then subjected to electrophoresis with ABI PRISM 310 Genetic Analyzer. GeneMapper™ program was used to determine the sizes of alleles per genetic locus.

Deliverables

Deliverable on original application?

Yes

Deliverable

D2. Storage of genetic material (DNA)

Deliverable Description

DNA is isolated from animal blood. Blood samples are collected across the country.

Overall, how satisfied are you that this deliverable has been met?

Very satisfied

Please explain your answer and provide links or upload any supporting documents, images, or other materials. *(Max 500 words)*

All the collected samples have given a genetic material, a unique biobank, from the indigenous Cyprus Cattle Breed, representing the 10% of the total population of this breed. DNA is isolated from animal blood and safely stored in our lab.

The DNA bank is available for further studies within the framework of the current or other projects aiming at the conservation of the indigenous Cyprus cattle breed.

6. Longer term environmental impacts of your work (6/10)

You didn't mention any environmental indicators on your application form. Do you have any to add now?

No

Environmental Indicators 7. Additional Indicators - please skip this page if not applicable (7/10)

On your application, you gave us the following wetland indicators: (please skip if not applicable)

Did your project fulfil these wetland indicators?

Please explain your answer and provide any supporting information, data or links:

On your application, you gave us the following species indicators (please skip if not applicable)**:**

Cyprus Cattle Breed

Did your project fulfil these species indicators?

Please explain your answer and provide any supporting information, data or links:

8. Unintended Consequences (8/10)

8.1 Did your project lead to any unintended negative environmental consequences?

No

9. Longer term social and economic outcomes of your work (9/10)

On your application, you selected the following social, economic and cultural outcomes:

Encouraging people to have a greater appreciation of the natural world and its value

Did your project fulfil these social, economic and cultural outcomes?

Yes

Please explain your answer and provide any supporting information, data or links:

Due to this project and the dissemination of out activities, the stakeholders such as farmers, policy makers, research institutes and consumers alike have a greater appreciation for the benefits of the survival of Cyprus Bovine Breed.

Other social, economic and cultural outcomes

On your application, you gave us the following other social, economic and cultural outcome indicators (please skip if not applicable)**:**

The outcome that has to do with the knowledge regarding the Cyprus Cattle Breed is a significant one.

Did your project fulfil these other social, economic and cultural outcomes?

Yes

Please explain your answer and provide any supporting information, data or links:

The farmers will now appreciate the possible economic benefits from keeping Cyprus Bovine Breed and encourage them to continue breeding, increasing or at least conserving the numbers of these animals.

Policy makers were persuaded to increase the subsidy for rare breeds and this was an additional incentive as well. We have to mention that this outcome resulted by out involvement with this project and our discussions with the relevant ministry.

On your application, you selected the following people indicators:

Increased public awareness/understanding of a specific environmental issue (for example invasive species, plastics, biodiversity), Increased belief in the potential to change economic norms and incentives to shift to more environmentally sustainable production and consumption patterns

Other people indicators

Did your project fulfil these people indicators?

Yes

Please explain your answer and provide any supporting information, data or links:

Due to this project and the involvement of the university, the farmers and their societies understood the value of the local breeds and the likely benefits of these animals in the future for the economy, sustainability, environment and conservation alike.

(10/10)

10.1 Is there any follow on work you are planning which could deepen the impact, or ensure the change created by this project is long-lasting?

Yes

10.2 Is there potential for this project to be replicated in other local areas?

No

10.3 Is there potential to replicate this further regionally, nationally or internationally?

No

Please provide more detail if you answered 'Yes' to any of the 3 questions above.

(Max 500 words)

This study is a part of a project which aims to evaluate the quality aspects of meat and meat products except to record genetic information about the local breed.

10.4 What more could we do to improve the long lasting impact of your work?

You could contribute on promotion and dissemination of the current project, as well as assist to find further funding to conclude the larger project of Cyprus Bovine Breed conservation.

10.5 Would you be willing to collaborate with us to create a case study of this project to share with our donors and wider stakeholders?

Yes