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How to Involve the Local Population into Protection
of Desert Ecosystems in the Fergana Valley

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1. Introduction

The article deals with the specific socio-ecological condition of the Fergana valley and its effect on the problem of nature conservation in the region.

The Fergana Valley is an ancient natural isolate in where a unique flora and fauna with a high level of endemism was formed. We have analysed the local socio-ecological condition of the Fergana Valley and the issue of nature conservation in this area. Through this analysis, our aim was to understand how to involve the local population in the nature conservation. Our research was conducted at the territory of Namangan and Fergana provinces of the Republic of Uzbekistan.

The Fergana Valley is one of the most densely populated areas in the Central Asia and therefore is being constantly developed for agricultural needs, including the areas previously considered as not suitable for development. In the 1980s, it comprised the big sandy area called Akkum; however, as a result of the active agricultural expansion, since 1984 it has turned into thirteen separate sandy islands losing 70% of the area's volume. Though the presence of 14[1] restricted range endemics and a number of rare species with the wider range, the Uzbek part of the Fergana valley does not have protected areas with adequate level of conservation.

Protected areas are represented by natural monuments, one of these territories is KBA UZB 014 "Akkum Sands", which includes 2 state natural monuments "Yazyavan Sands" (1820.4 ha) and "Mingbulak" (1000 ha). [2]

A research expedition to the area conducted in April 2021 has shown that the dunes were being excavated and the area was being actively irrigated, which changed the endemic biodiversity of the Fergana Valley, particularly in its valuable areas.



Figure 1. Research expedition in the sandy area of Namangan province Photo: Matluba Mustaeva

In our research we explored the ways to approach the problem of sustainable use of the resources, such as the water supplies and sandy areas, the home for rare endemic species. It is a common misconception that "the preserved nature" simply refers to things that are not modified by human hands and "intrinsically functionless"[3]. In our research, we aimed at explaining the need for reducing the activities which harm the sandy areas of the Fergana valley and support those which likely to help nature conservation (eco-tourism, etc.).

The research highlights these urgent issues and aims at identifying various stakeholders involved in nature conservation. At present, economic growth is the key priority for the government and the community; however, according to international studies, nature restoration is more expensive and difficult than the

conservation measures. Our focus is to find the arguments to attract the government's and the local communities' attention to the problem of the Fergana Valley. For this we tried using the opportunities provided by the social media platforms converting the content into simple Uzbek language and delivering it through the popular online-media channels, such as Telegram.

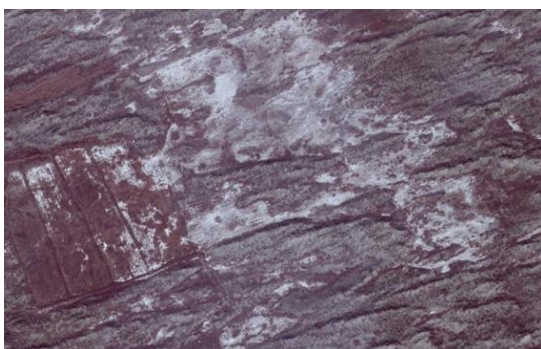


Figure 2. Satellite image of the Yazyavan sands, google maps. 2021

2. Methods

Due to limits of the study interviews, surveys and observation were used as the main methods for the research. The informal interviews were held with open questions for the following subsets of the population:

- 1) Staff involved in the activities around the Protected areas and environmental inspectors
- 2) Environmental activists
- 3) Academia

The opinions on ongoing changes happening in the sandy areas were collected. To supplement our research with essential information we conducted a questionnaire with a number of closed questions. For that purpose, the Telegram messenger which is the most widely used social media platform in the

region was used: a popular in Fergana Valley sports channel <https://t.me/championatasia> with over 55k subscribers was used to obtain a clearer picture about the interest of the youth in the problem of nature conservation and ecological content. 6,317 people participated in the survey. Among other questions, the respondents were asked whether they are aware of the environmental problem of Yazyavan sands (one of the districts in the researched area).

Observation was used while visiting the area of the research. The research expedition to the area was conducted in April 2021. We have visited the affected sandy areas in Fergana and Namangan provinces, talked to the local people, documented the changes by taking photos and video recording.

Informal interviews with the local government and activists in the area showed that the responders had a comprehension of the problem to a little extent.



Figure 3. Group of environmental activists on an informal interview with the city government official. Photo: Matluba Mustaeva

Another method was a pilot release of the Telegram channel with content in Uzbek language, regularly shared in other bigger local channels.

3. Results

The analysis of the informal interviews with the local people from Fergana Valley showed the following:

- 1) Informal interviews with staff involved in the activities around the Protected areas and environmental inspectors showed a high level of involvement and wearisomeness with the subject. As well as the negative attitude towards commercialising the protected areas (fish farming) “It is like selling the pieces of art out of the museum” said one of them.
- 2) Environmental activists noted the significant change in terms of flora and fauna species of the area. They also stressed that environmental inspectors need independence from the local government.

- 3) Academia representatives (we have had an informal interviews in [Kokand Regional Studies Museum](#)) in Quqon showed their strong interest in creating better mechanisms of protecting the sandy areas, which they believe would serve keeping the climatic balance on the region.

The questionnaire was with a number of closed questions and it engaged 6,317 people. The respondents were asked if they heard about the ecological problems of Yazyavan sands (they were provided with [an article](#) about the state of sandy areas before the poll):

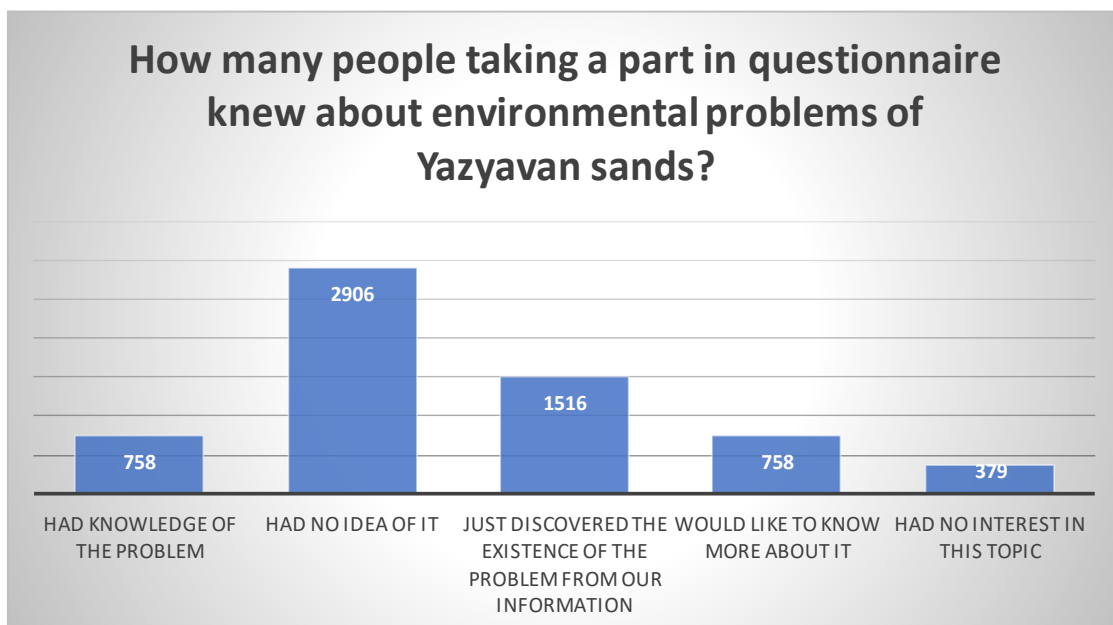


Figure 4. Chart showing the Poll results in the Telegram group

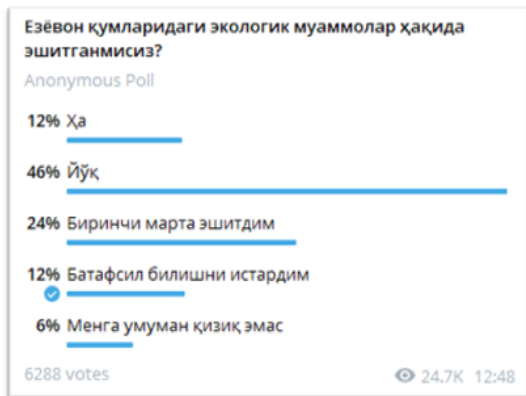


Figure 5. Screenshot with the poll results from Telegram.

Observation method was used while visiting the area of the research. The research expedition to the area was conducted in April 2021. We came across the restrictions for access. The checkpoints in the area were justified by the presence of the water reservoir nearby.

Additionally, the fish farms changing the hydrologic condition of the area and affecting the endemics, ponds made it difficult to move between the dunes. The air humidity was noticeably higher from the residential areas.

“After emptying, the pits were filled with water and given to the entrepreneurs for starting a fish farm. For the same purpose, a number of pits were dug. Sand dunes are isolated islands now. Establishment of fish farms violates their hydrological regime” writes the ecological journalist Natalia Shulepina about the current state of the sands. [4]

We visited the area for 3 days and the expedition’s results showed that the current status was not sufficient for sandy areas of Fergana Valley to remain conserved.

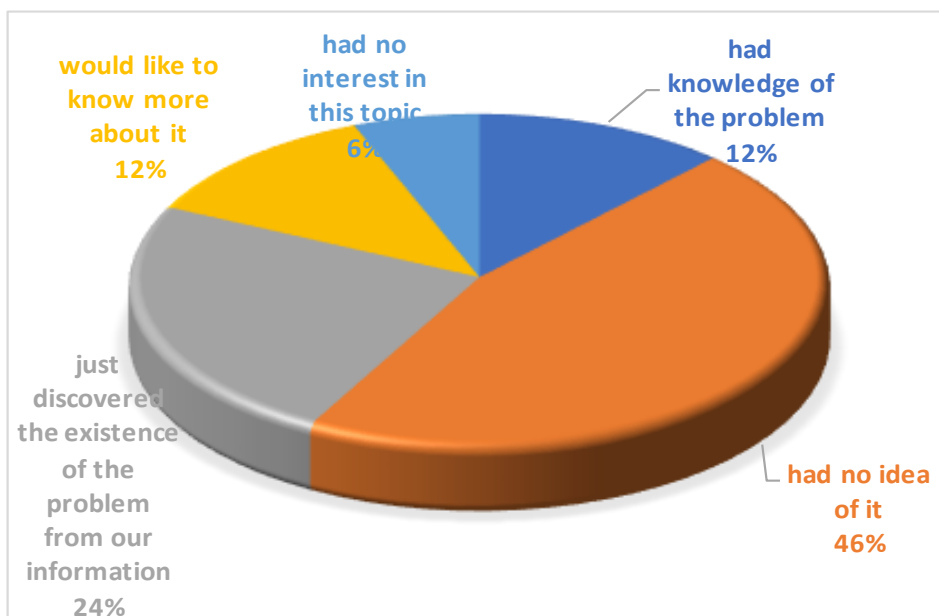


Figure 6. A pie chart with the Poll results illustrating the ratio of interested, informed or indifferent people taken part in it.



Figure 7. Excavated sand dunes in Yazyan district. Photo: Matluba Mustaeva



Figure 10. Overly irrigated sandy areas in Fergana Valley. Photo: Matluba Mustaeva



Figure 8. Protected sandy area territory prepared for a fish pond. Photo: Matluba Mustaeva



Figure 9. Excavated sands in Yazyan district. Photo: Matluba Mustaeva

Experimental methods with the pilot release of a Telegram channel <https://t.me/wildlifeuzb> aimed to reach an Uzbek language speaking auditorium with the ecological content showed that it was possible to raise the engagement among social media users in the local communities by adapting the content in a simple form and sharing posts amongst the popular, bigger channels. We increased the number of subscribers in <https://t.me/wildlifeuzb> from 12 to over 700 through regular post-shares during the last five-month period.

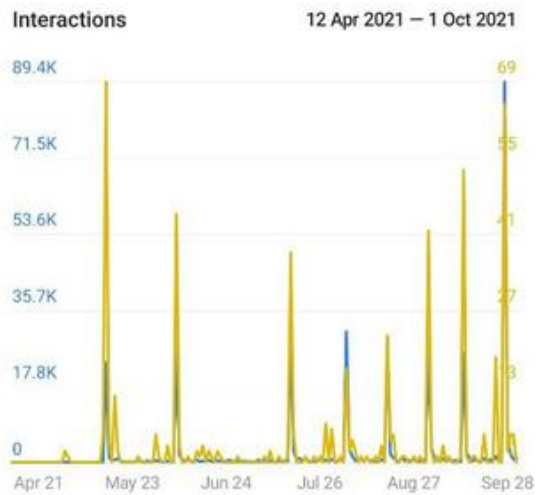


Figure 11. Screenshot from Telegram stats page, showing the correlation peaks in the interactions with post shares in <https://t.me/championatnews>

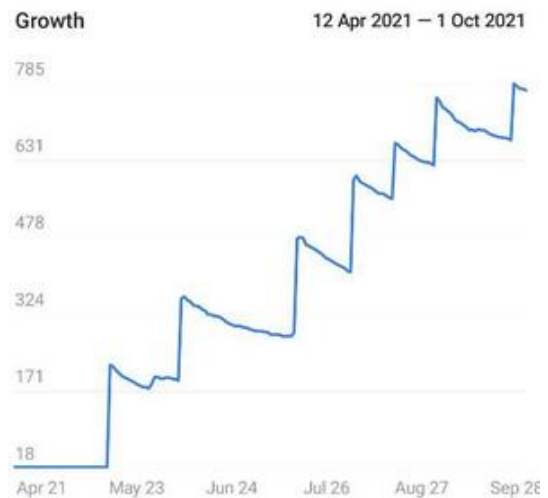


Figure 13. Subscription growth in Telegram channel <https://t.me/wildlifeuzb>



Figure 12. Screenshot from Telegram stats page, showing the correlation peaks in subscriptions with post shares in <https://t.me/championatnews>

4. Discussion

As it can be seen from the results of the poll, a very minor share of people has information about the issues in nature conservation in the Fergana Valley. Lack of attention from the local communities partially explained by the lack of governance in the area. The local authorities often focus their attention on the economic aspect and do not always weigh the risks for the environment. The municipality of the Fergana Valley rents out the sandy areas for a 49-year lease to the entrepreneurs and farmers for fish farm development, but the harm to the environment is not assessed properly. Additionally, the local environmental activists and ecological inspectors stress the need for more independence from the local authorities and should not be appointed by them.

The informal interviews with the local government and the activists in the area showed that the respondents had a comprehension of the problem to a little extent.

We also propose to look at the bigger picture: the overconsumption of water in the certain districts of the Fergana Valley from the waters of Sir Darya River can be directly connected to desertification of the other areas, which can be found downstream.

5. Conclusions

After five months of research, we came to certain conclusions on how we could raise the awareness of nature conservation in the sandy areas of Fergana among the local communities. Firstly, we want to stress the need to use the most popular social media platforms to reach the audience. It is important to create enough content for the Uzbek speaking population, using the simple language. It is also important to create and maintain Telegram platforms and maybe a YouTube channel and provide regular updates about the endemic species and the way they are being affected by the crisis.

Also, we would imagine involving hobby channels, influencers and bloggers to make the ecological content appealing and popular. It is important to use the expertise of the scientific working groups from the Research Institute of Zoology under Academy of Science of Uzbekistan and international working groups and to present the research results in a popular scientific format to reach a bigger group of people and raise the awareness among them.

It could also be useful to use the local cultural and religious background of the Fergana Valley inhabitants in promoting the messages on importance of nature conservation (the majority of people in Fergana Valley are very traditional and religious).

It is important to give a voice to the environmental activists and highlight their need for working in an establishment that is free from the local municipality's control, and not appointed by them.



Figure 14. *Rustamov Frog Eze Gecko*
Photo: Matluba Mustaeva



Figure 15 Yazyavan sandy soil Photo: Matluba Mustaeva



Figure 17. Night expedition working group on Yazyavan sands Photo: Matluba Mustaeva

It is also expected that regular round tables and meetings with the local authorities could help them understand the problem better and will help prioritise nature conservation when it comes to the decisions like developing fish farming in the region.

In order to save the rarest and most endangered species, we need to work [5] on habitat restoration, increase the connectivity between the habitat and the population.



Figure 16. Expedition working group on the field Photo: Matluba Mustaeva

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- [1] Nataliya Shulepina; 2020 «Who is in charge for Yazyavan sands?»
<https://livingasia.online/2020/05/13/kto-v-otvete-za-yazyavanskie-peski-uzbekistana/>
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