

National Park of East Macedonia and Thrace, Greece: Exploring local perceptions of the National Park and its social impacts



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SUMMARY

Protected areas, such as National Parks, are an essential policy instrument for the protection of biodiversity and for the mitigation of climate change. However, the designation of protected areas often introduces changes to the local economy and communities by restricting certain sectors and activities, while promoting others. It is necessary to study the social impacts of protected areas in order to increase their effectiveness and public acceptability.

This report presents the first results of research on the social impacts of protected areas on local communities that the FIDELIO team conducted in the National Park of East Macedonia-Thrace (NPEMT) in Winter 2020/21. The report will analyse in parallel quantitative data collected through 281 valid questionnaires of local residents and qualitative data from 22 semi-structured interviews with key stakeholders of the NPEMT.

Key Findings

- 38.4% of the residents of the park stated that they were not aware that the area covered by the NPEMT was a protected area. Overall, many local residents were not aware of the boundaries of the park and of its zoning
- 48.8% of the respondents strongly agree with the existence of the NPEMT, out of which 10% is strongly opposed, while 25.6% partially agree with it
- The impacts of the NPEMT that are perceived by local residents are mixed (both positive and negative), with personal income and access to natural resources being impacted more negatively.
- A common perception that was observed in the residents of the NPEMT is that the managing authority of the NPEMT prevents economic development in the area, while at the same time it does not do enough to protect the natural environment and to make the area of the park more accessible to both tourists and locals
- The managing body of the NPEMT has no jurisdiction to enforce the regulations of the park. Currently there are numerous stakeholders that are involved in the governance of the NPEMT and even though there is an overlap in their responsibilities there is a lack of coordination between them. This is primarily due to the legal framework of the NPEMT, which does not grant the managing body sufficient authority or jurisdiction.
- Whilst some interviewees praised the NPEMT staff and none criticised the staff or their attitudes, the NPEMT institution was thought to be poorly set up and underfunded and that its structure, funding and powers were problematic.
- 83.3% considers conservation of nature either very or extremely important, whereas 85.2% agrees that areas for the protection of flora and fauna need to be created
- 72.6% stated that environmental destruction is a big problem in NPEMT, while only 16.3% disagreed with this statement
- The overall trust for public institutions is relatively low among the local residents of the NPEMT. 52.3% of the respondents either has not heard about the Managing Authority of the NPEMT or does not know enough about it to form an opinion on whether they trust it

1. INTRODUCTION

The latest IPBES Global Assessment Report found that around 1 million animal and plant species are currently threatened with extinction, which is “more than ever before in human history” (IPBES, 2019). There is a wide range of human activities that have been identified to have an adverse effect on natural ecosystems and biodiversity, including deforestation, excessive use of natural resources, all types of pollution (air, water, soil, noise and light) and some agricultural practices. The majority of these disturbances can be managed at a local level, therefore protected Areas, such as National Parks, are an essential policy instrument for the protection of biodiversity and for the mitigation of climate change.

The designation of protected areas results in both positive and negative social impacts on local communities, who live either within the protected area or in the areas adjacent to it. The main drivers of positive impacts are the improvement of the local environment and pollution levels, the increased provision of ecosystem services, the development of local infrastructure, or an increase in tourism. On the other hand, the negative impacts usually derive from the restrictions imposed with the designation of the National Park, which can affect the livelihood, wellbeing, and culture of the local communities. The distribution of the social impacts among the local residents of the protected areas can affect the effectiveness and acceptability of the protected areas.

According to the EU biodiversity strategy, the EU aims to protect 30% of land and 30% of water by 2030 (European Commission, 2020). Given the predicted expansion of PAs across Europe, both in quantity and size, it is important to identify all the stakeholders and the distribution of social impacts in order to decrease the negative social impacts of the protected areas.

In this report we present the first results from a survey that was conducted in the National Park of East Macedonia-Thrace (Greece) during December 2019 and January 2020. The report has also been made available on the following website: fidelio.landecon.cam.ac.uk. For further information please contact us at: fidelio@hermes.cam.ac.uk

2. ABOUT THE PARK

The National Park of East Macedonia and Thrace (NPEMT) is located in Northern Greece and it covers a total area of 929.47 km². It was established in 2008 (designation: IUCN Category II protected area), however, within its boundaries are included three large wetland nature reserves, River Nestos Delta, Lake Vistonida and Lake Ismarida, which are protected by the Ramsar Convention (1971), as well as Natura 2000 sites. NPEMT is divided into three management zones with varying levels of protection. The level of protection tends to be stricter in the areas adjacent to the three wetland nature reserves (Zone A) and is less restrictive in the areas between the wetlands and the boundaries of the park (Zones B, C and D).

The NPEMT consists of fresh water, marine, coastal and terrestrial ecosystems. The diversity of aquatic habitats is attracting a wide variety of fish and bird species and it is the unique habitat of two species of fish. Additionally, the park is part of the migratory routes of numerous species of birds, including the Dalmatian pelican, the white-tailed sea-eagle, the grey heron, flamingos and pied avocet. In terms of ecosystem services, the provisioning, regulating and supporting services underpin directly the livelihoods of the majority of its residents.

Approximately 40,000 permanent residents live in the park and its surrounding areas. A considerable number of people, who work within the area of the NPEMT, live in three urban areas adjacent to the park, Kavala, Xanthi and Komotini. The local economy relies heavily on agriculture, livestock production and fisheries, while there are also several manufacturing facilities that are located within the NPEMT. Moreover, in the last decade multiple energy infrastructure projects have been developed within the park, including the Trans Adriatic Pipeline, which crosses its northern part, and private small-scale solar PV installations that are scattered throughout the park. Finally, even though tourism is an important source of income for the local community it has not been developed to its full potential. The coastal areas of the park attract the majority of tourists, mostly from the regions of Macedonia and Thrace as well as from neighbouring countries.



Figure 1: Map of the NPEMT (Jones et al. 2012)

3. BRIEF DESCRIPTION OF METHODS

The research team distributed 400 questionnaires to randomly selected households. The sampling frame included all villages within the boundaries of the NPEMT. The households were selected using two-stage cluster sampling, whereby 40 urban areas were selected randomly out of all the urban areas in the park. Then, in each selected urban area households were selected randomly using satellite imagery. The final sample represented 1% of the total population in each urban area. In total, **281** valid questionnaires were collected. Sample characteristics are presented in Table 1. The questionnaire was designed to capture the following aspects from the local residents of the NPEMT:

- Knowledge of the respondent on NPEMT and its regulations
- Personal values and acceptability of the NPEMT
- Perceived impacts of the NPEMT
- Trust in the institutions involved in the management of the NPEMT

Table 1: Sample characteristics (N=281)

Gender

Gender	%
Male	62.3
Female	37.0
Missing values	0.7

Household Income

Annual Income	%
No income	8.5
up to €10,000	46.6
€10,001 - €15,000	22.8
€15,001 - €20,000	8.2
€20,001 - €25,000	3.2
€25,001 - €30,000	1.1
€30,001 - €35,000	0.4
Missing Values	9.3

Education

Education level	%
Elementary school	29.2
Middle school	13.2
High school	23.8
Post-secondary education	8.5
Undergraduate degree	17.8
Graduate degree	6.4
Missing values	1.1

Age

Years	%
18-25	7.8
26-39	22.1
40-59	40.9
60-79	26.3
80+	2.5
Missing values	0.4

Years living in NPEMT

Years	%
0-9	6.9
10-19	7.7
20-29	17.5
30-39	12.0
40-49	20.4
Over 50 years	35.4

Additional Information

	%
Permanent residents of the NPEMT	97.5
Have lived in the NPEMT their entire lives	67.3
Work in agricultural sector	32.0

In addition, 22 interviews were undertaken across a range of stakeholder groups. Six could be classified as explicitly pro-conservation in that they worked for Park management (3), WWF, Elliniki Ornithologiki, or the Hellenic Society for the Protection of Nature. Five were related to extractive activities ie. fishermen (3, of which 1 amateur), farmer (1), hunter (1). Five were representatives from industry: fisheries service (1), industrial association (1), a chamber of commerce (1) and a farming union (2). The remainder were state governance actors: mayor (3), deputy mayor (1) and governor (2). None were unaware of the presence of the NPEMT and most appeared to have known about it for a long time. At least half of the sample were from the local area originally, whereas 5 were not, and some did not specify.

4. RESULTS

4.1. Support for the NPEMT by locals

The survey captured the importance of the NPEMT for its local residents through a series of questions. Overall, 48.8% of the respondents strongly agree with the existence of the NPEMT, while 25.6% partially agree with it. On the other hand, just 9.3% answered that they completely disagree with the existence of the NPEMT, 6.4% partly disagree and 8.5% is indifferent to its existence. Therefore, **nearly 75% of respondents supported the existence of the NPEMT at least partially**. Additionally, 85.5% of the respondents expressed strong affection towards the area covered by the NPEMT. These two metrics indicate that the area covered by the NPEMT is important to most members of the local community and that to a certain extent they agree with the institution of the National Park.

The interviewees echoed the overall support for the NPEMT. No interviewee expressed outright opposition to the NPEMT, or said that it should not exist. Only one interviewee, a local mayor, claimed to be 'indifferent' to the NPEMT and argued that nature conservation was causing the problems locally and preventing economic development. All others claimed to support the NPEMT though with a range of reservations and criticisms. Those who expressed an opinion supported the NPEMT because it was important to protect the landscape, nature, flora and fauna. The main criticism from several interviewees was that nature conservation needed to be balanced against economic development for the locals. However, based on the interviews, the impact of the NPEMT on development is not clear as some interviewees claim wrongly the NPEMT management body has planning powers, while others that it can only make recommendations. Five interviewees questioned the structure and function of the NPEMT management. Whilst some interviewees praised the NPEMT staff and none criticised the staff or their attitudes, the NPEMT institution was thought to be poorly set up and underfunded and that its structure, funding and powers were problematic. One deputy mayor said the NPEMT may not have the best system in place to protect the landscape, and both he and a conservation specialist thought the NP was stagnating.

It should be noted that **38.4% of the respondents of the survey stated that they were not aware that the area covered by the NPEMT was a protected area**. A significant part of those respondents were familiar with older designations, such as the inclusion of the wetlands in the Ramsar Convention or the Natura2000 sites, however, they were not aware of the designation of the area as a national park in 2008. This could be due to three reasons: first, the designation had not been communicated adequately to them; second, they were confused by the overlapping designations that applied in the area; or finally they did not remember it. A

paragraph on the designation of NPEMT as a protected area was included in the questionnaire for all the respondents who were not aware of it.

4.1.1. Active Support

In terms of active support for the NPEMT, 18.1% of the respondents stated that they have participated in volunteer activities that have contributed to the protection of the park during the last 5 years (2015-2020). The remaining 78.6% mentioned that they have not participated in any such activities (3.2% missing values). Of those who stated that they have engaged in volunteer activities, 62.5% said that they have participated in the cleaning of the park (trash collection at the beach or the forested areas of the park), 15.6% in tree-planting activities, and 10.4% in volunteer fire patrols. Other volunteer activities that were mentioned included bird-watching and counting (6.3%), reporting illegal activity in the park (4.2%) and helping in animal shelters (2%). Finally, it should be noted that 56.5% stated that they do not have time, money and opportunities to get involved in the protection of the NPEMT, while only 22.7% stated that they did. Just over half of the interviewees (13) commented on active support for the NP.

In the interviews with key stakeholders, opinions on options for active support were very variable. Forms of direct active support mentioned included acting as an advocate for the NP in the community (2 NPEMT staff), attending events on the NPEMT (1 NGO rep), participating on the Park Board of Directors (1 fisherman), making recommendations for rule or legislation changes (1 hunter). Others supported indirectly the NPEMT's aims through pro-conservation or pro-environmental initiatives not directly related to or run by the NPEMT such as, domestic recycling and community initiatives.

4.1.2. Reasons for Support

In the interviews with key stakeholders, reasons and motivations for supporting the NPEMT revolved directly or indirectly around two main themes. On the one hand, some expressed interest in protecting the last remaining fragments of habitat that had been destroyed (such as the forests - fisheries rep. with an interest in mountaineering), to protect the landscape (1 fisherman, 1 deputy mayor, 1 fishing rep.) and an interest in the ecological, aesthetic and scientific interest of the NPEMT (NPA employee, motivated by work with colleagues). On the other hand, three noted that whilst nature should be protected, there had to be a balance between nature and society and that the local community needs to be able to exploit natural resources and develop, for example stemming from a personal belief that nature and society are inter-connected (1 NPEMT staff, 1 amateur fisherman, 1 deputy mayor). A number of interviewees noted the importance of personal beliefs and personal relationships in motivating their support for the NPEMT, mostly NPEMT staff or NGO or conservation specialists. One conservationist noted that the central state entities cannot deal with the issues of an NPEMT as they are bureaucratic, dysfunctional and hard to deal with. There needs to be a local NPEMT and it employs local staff which helps and promotes local support. The NPEMT managing authority has a nice balance of technical, scientific and local staff. The one mayor who did not support the NPEMT cited his reasons as being because the NP prevented development.

In terms of reservations about the NPEMT, four interviewees expressed that it was an obstacle to local development and that legislation was too restrictive. One chamber of commerce representative felt the NP lacked infrastructure for tourists and that in Greece protection was over-interpreted and exaggerated. Additionally, a deputy mayor expressed that the NPEMT is stagnating, whereas a mayor added that it prevented local exploitation of

geothermal energy. One governor thought the NPEMT management body did not communicate with the local community to 'sell' the NPEMT to them. In his opinion, the NPEMT management body needs to balance nature protection against economic development. The regulations are acceptable but the management body must justify and promote them. Specifically, it was expressed that the NPEMT area needs balanced sustainable development, especially with regards to tourism.

4.2. Social impacts of the NPEMT

The designation of protected areas has resulted in both positive and negative social impacts on local communities. Overall, living inside or near the NPEMT has had mixed impacts on local communities. Approximately 65% of the respondents stated that the NPEMT has had no impact on personal income, on local traditions and on social relations between the local residents of the park. A large percentage of respondents perceived positive impacts of the NPEMT on environmental protection, where 57.3% reported either somewhat positive or positive impacts, and on Educational Activities, where 60.1% reported either somewhat positive or positive impacts. This can be explained by the fact that the intensive agriculture and industrial activity have had a negative effect on the natural environment in the last decades and the ability of the managing authority of the NPEMT to control or even prevent further development is perceived positively by a large proportion of the local residents. However, it is also possible that a general increase in environmental awareness and environmental protection in Greece also affected the perceptions of the respondents, beyond any impact that the managing authority of the NPEMT has had. Moreover, the impact of the NPEMT on educational activities is also appreciated by the local communities, as the managing authority of NPEMT in collaboration with the Ministry of Education and local schools are organising regular educational excursions to the park.

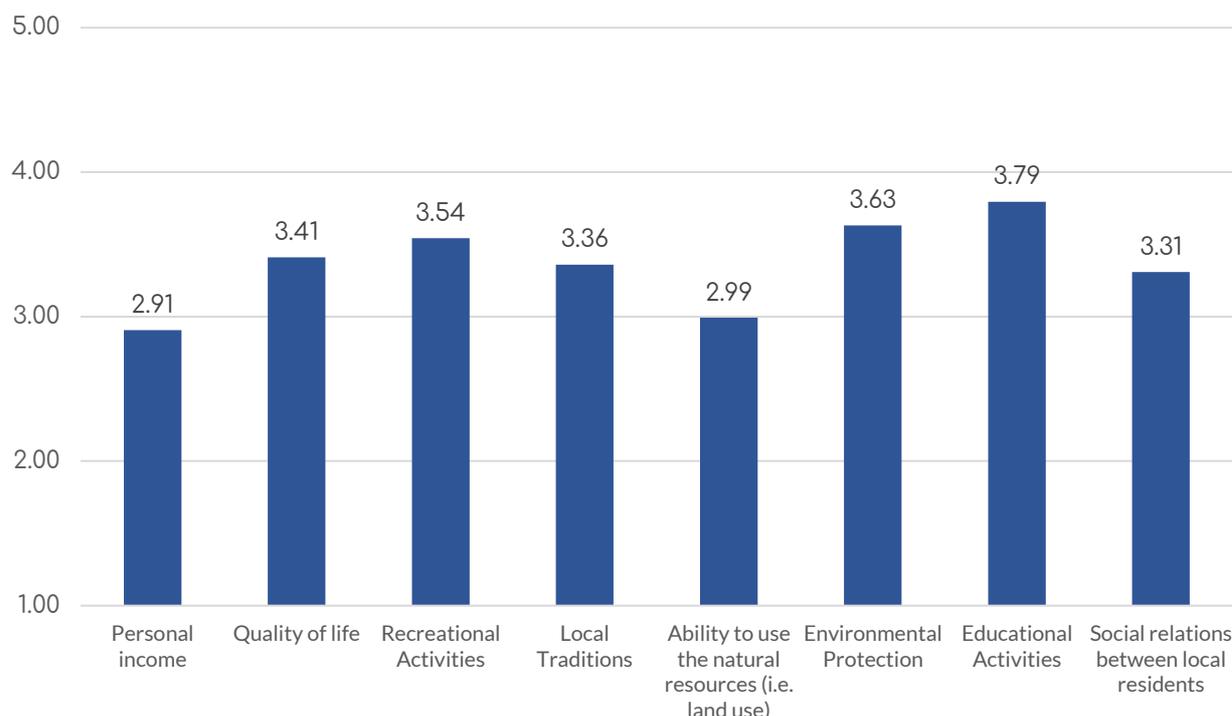
On the other hand, 23.5% of local resident reported negative impacts of the NPEMT on their ability to use natural resources in the park, and 19.6% perceive negative impacts on their personal income. Interestingly, 13.2% stated that the NPEMT has a negative impact on their quality of life, whereas 43.4% stated that it has no impact at all. **It should be noted that the overall perception that was observed in the residents of the NPEMT is that the managing authority of the NPEMT prevents economic development in the area, while at the same time it does not do enough to protect the natural environment and to make the area of the park more accessible to both tourists and locals.**

In the interviews, a representative of the farming union, whilst recognising that the general economic situation in Greece also plays a part in lack of development, felt nevertheless that the NPEMT is still a factor in suppressing the local economy in that its approval is needed for investments and permitting. On the other hand, a staff member of the managing authority of the NPEMT said that while the park had a positive impact on incomes and work, the situation is the same inside and outside the protected area. Moreover, tourism was the key area of the economy over which dissatisfaction with the role of the NPEMT in landscape development was expressed. Although employees of the NPEMT said that the NPEMT offers many opportunities and there have been success stories of small-scale tourism/ecotourism, the remaining interviewees did not feel opportunities existed or were exploited or even exploitable. One mayor said the NPEMT itself offers no benefits as it is not open to society to visit and enjoy. Indeed access appeared to be a significant issue. A deputy mayor thought the main advantage of the area was living in a nice natural landscape, but access to the landscape is not good. Yet

within the park it was not possible to develop anything, with lots of restrictions, even for recreational facilities.

Figure 2: How does the NPEMT affect the following?

Mean values, scale 1-5: 1 representing negative impact, 3 no impact, 5 positive impact



4.3. Effectiveness of NPEMT in Protecting Nature

During the interviews, when asked their opinion on whether the NP was an effective way to protect nature, of the 12 interviewees, who expressed an opinion, only two were positive. One thought it was possible to see the positive effect of restrictions on flora and fauna (1 amateur angler), and another that he could not see a better model than Greek national parks (NGO representative). The remainder had a mixed opinion (4), were partly negative (2) or wholly negative (4). Wholly negative critics said the NPEMT lacked power, resources, staff and funding to be more proactive and develop infrastructure (hunter, governor). Two thought the NPEMT did not protect nature and the landscape and that biodiversity had declined (governor, conservationist), the conservationist noting that the landscape was a socio-ecological one that needed management, and that abandonment was the major threat in the NPEMT area. In this regard, a staff member of the managing authority said the legal protection was full of loopholes, abuse and weak control, but without the NPEMT, the landscape degradation might have been worse. Two thought the NPEMT was a good way, or at least one way to protect flora and fauna in the landscape but not the best way (1 union rep, 1 fisheries service).

On the other hand, the respondents of the survey reported more positive perceptions toward the effectiveness of the NPEMT in protecting the environment compared to the interviewees. Specifically, 57.4% reported that the NPEMT had a positive impact on the protection of the environment, whereas 20.3% reported a negative impact (21.7% stated the is no impact at all).

4.4. Perceptions on regulations in the NPEMT

Based on the survey, approximately **23.2% of respondents said that they find it hard to use the NPEMT and the natural resources that it provides responsibly**, whereas 53.7% said that they find it easy. Additionally, the majority of respondents stated that they are aware of specific restrictions that apply within the boundaries of the NPEMT. Overall, 97.5% of respondents are aware of the restrictions on illegal waste disposal, 91.6% on disturbance of wildlife and nature, 91.3% on hunting restrictions. The levels of awareness were slightly lower in the case of fishing regulations, whereby 82.7% was aware the certain restrictions on fishing applied within the NPEMT, and in the case of building restrictions, where 87.4% was aware of those.

It is not clear to what extent restrictions and regulations that apply in the NPEMT are communicated to locals by the management body. Specifically, the conservation interviewees seemed to feel that the public had poor awareness of the restrictions and their benefits and misunderstood their overall impact. Regulations on the use of pesticides and fertilisers in agriculture or hunting restrictions are communicated clearly through other institutions beyond the management body of the NPEMT, such as the Ministry for Environment or Agriculture or the Forest Authority. Moreover, restrictions on waste disposal and disturbance of nature and wildlife apply in most areas in Greece regardless of their protection status, so it is expected that local residents would infer that those would apply within the NPEMT too. Based on anecdotal evidence collected during fieldwork, it appears that many residents of the NPEMT are not aware of the boundaries of each zone in the park, of the regulations that apply in each zone and of the protection status of the park. Further analysis will be performed to support this claim with evidence, but for now it should be noted that the lowest levels of awareness of local residents on restrictions of the NPEMT were observed on the regulations that have imposed by the NPEMT and do not apply beyond its borders (i.e. building restrictions in certain zones and fishing regulations).

In the interviews, planning and regulations was perceived negatively by the key stakeholders. On the one hand, two NPEMT management authority staff thought that the park was a mechanism to reconcile the many land uses in the landscape e.g. housing, agriculture, livestock farming, craft businesses, tourism, and that the NPEMT reduces lawlessness by patrolling the NP e.g. illegal construction, which is common in Greece. One NGO representative even said that whilst the disadvantages of the NP relate to restrictions, there were not many of these, and didn't think there are restrictions on building or activities in the landscape other than perhaps on polluting activities. On the other hand, the key criticism was that the planning and permitting system for building and development inhibited development and investment locally by either preventing development permits, or making the permitting process long and cumbersome. They argued for some economic activity to be allowed even in the strictest controlled areas (1 chamber of commerce, 1 governor, 3 mayors, 1 deputy mayor, 1 fisherman, 1 hunter). Finally, a number of interviewees thought the NPEMT too large in area coverage (2 chamber of commerce reps.), one thinking the outer zones should be abolished, the other noting

the at the NPEMT was too large to yield so little for local people. A NPEMT staff member maintained that the NPEMT was not a closed strictly controlled area, suggesting that the extensive size did not matter, but other commentators seemed to consider the park unrealistically large.

4.4.1. Compliance with the regulations of NPEMT

The first set of questions captured the level of acceptance of respondents for specific illegal actions. Overall, respondents reported low acceptance for illegal activity. Specifically, they reported lower acceptance for illegal disposal of waste and for disturbance of nature and wildlife (Figure 3) compared to the illegal cutting of trees and fishing illegally, where the acceptance for both was slightly higher but still relatively low (Figure 3).

The second set of questions asked the respondents to evaluate the level of compliance of their fellow residents with the regulations of the NPEMT. On a scale from 1-7, where 1 corresponds to no compliance at all and 7 to universal compliance, the average score on the level of compliance that residents of the park assigned to their fellow residents is 3.44, which is slightly negative. Specifically, 13.9% of respondents stated that no one complies with the regulations of the NPEMT (Figure 4).

Finally, the last set of questions, asked respondents to assess their own level of compliance. The vast majority (86.2%) of respondents stated that they have never broken any of the 5 regulations that were suggested to them (illegal fishing, hunting, disposal of waste, building and disturbance of nature and wildlife), during the last 12 months. Naturally, this was the expected outcome of this question, as people tend to avoid admitting wrongdoing in surveys out of fear of being punished for their actions.

4.4.2. Enforcement of the regulations in NPEMT

Four institutions are responsible for enforcing regulations in the NPEMT: the local police; the coast guard; the forest authority; and the management body of the park. The local police and the coast guard have the right to arrest and fine individuals who violate the regulations, whereas the forest authority only has the right to fine. The management body of the NPEMT, has the responsibility to report illegal activity to the police or coast-guard, but beyond that has no further jurisdiction to enforce regulations. Currently, the responsibilities of the four institutions are not coordinated in any way and although there is overlap between their responsibilities (such as on patrolling) there is limited collaboration between them. During interviews with employees of the managing authority of the NPEMT and of the forest authority, it was expressed that the management of the NPEMT is in limbo. On paper, the managing authority is responsible for the management of the park, however, it has been allocated limited jurisdiction and it cannot enforce regulations or act as a coordinating body for all the actors that participate in the governance of the NPEMT. Specifically, a representative of a local hunting union argued that the NPEMT is a “paper park” designated to satisfy EU targets, that the park is too large to manage and that the staff lack the specialist planning skills needed to fulfil the managing body’s planning role, especially when there are other relevant authorities more suited for this role. Some of the interviewees accepted the need for a dedicated autonomous body and associated governance framework for the NPEMT, detached from local or regional government (3 NPEMT staff, conservationist). **It was considered a problem in Greece generally that there are too many state entities with overlapping or divided responsibilities that compete with one another and do not co-ordinate or cooperate.**

In terms the perceptions of local residents on the enforcement of regulations in NPEMT, 73.3% of the respondents said that there are mechanisms of monitoring behaviour in the park (police surveillance, forest rangers) that encourage locals to follow regulations. The remaining 26.7% of respondents stated that such mechanisms do not exist in their opinion.

Figure 3: How acceptable do you find the following activities?

Mean Scores: 7-point Likert scale, 1=no one complies, 7=everyone complies)

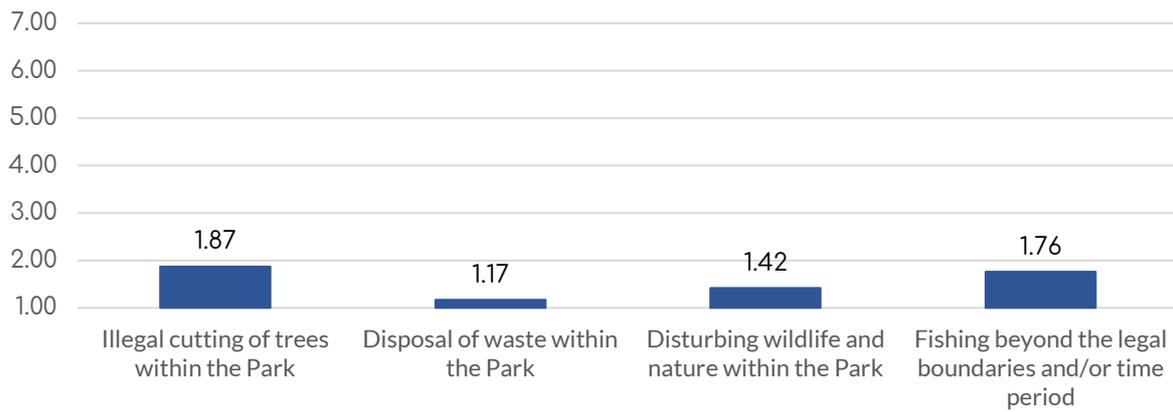
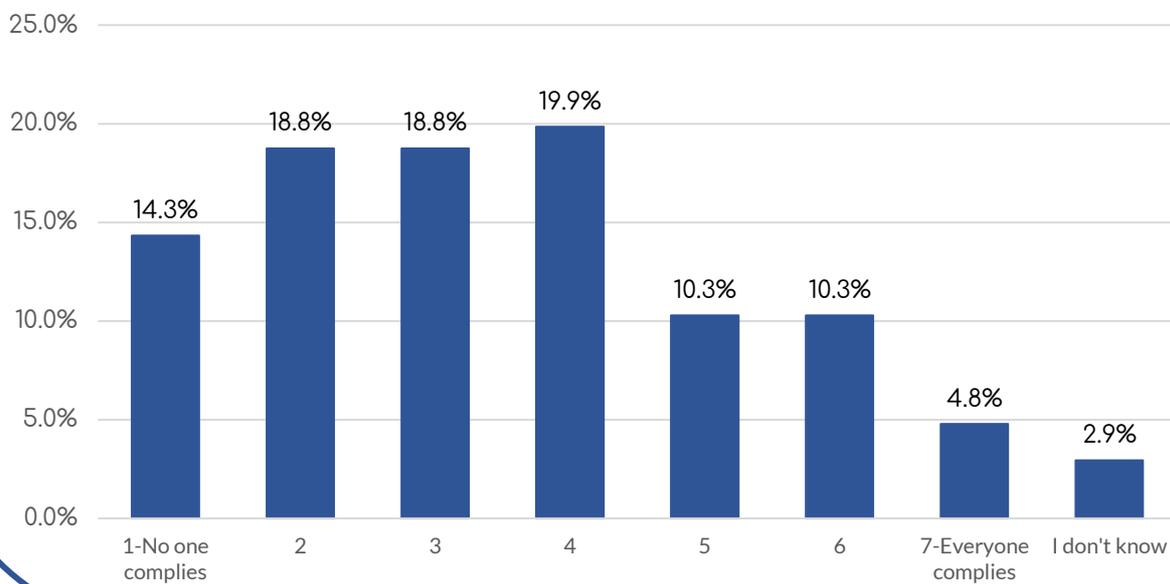


Figure 4: To what extent do the local residents comply with the current regulations of the Park?

Frequencies: Percentage Values

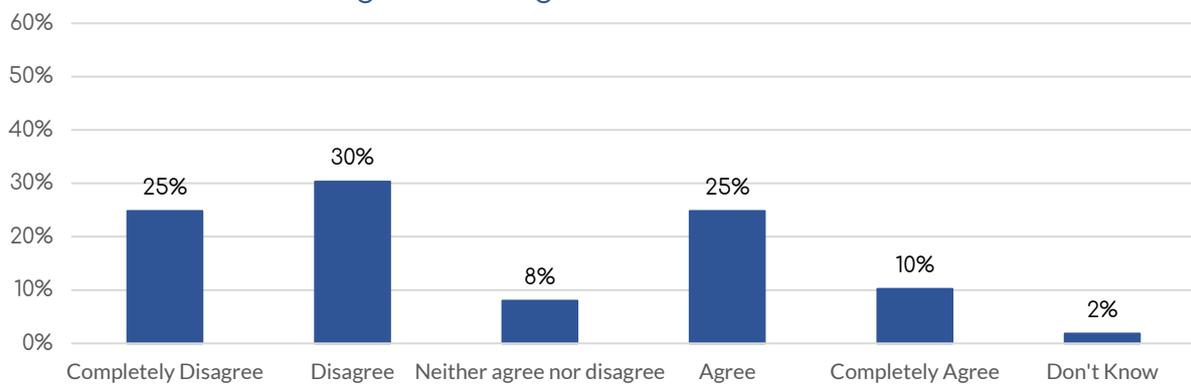


4.5. Personal values of local residents

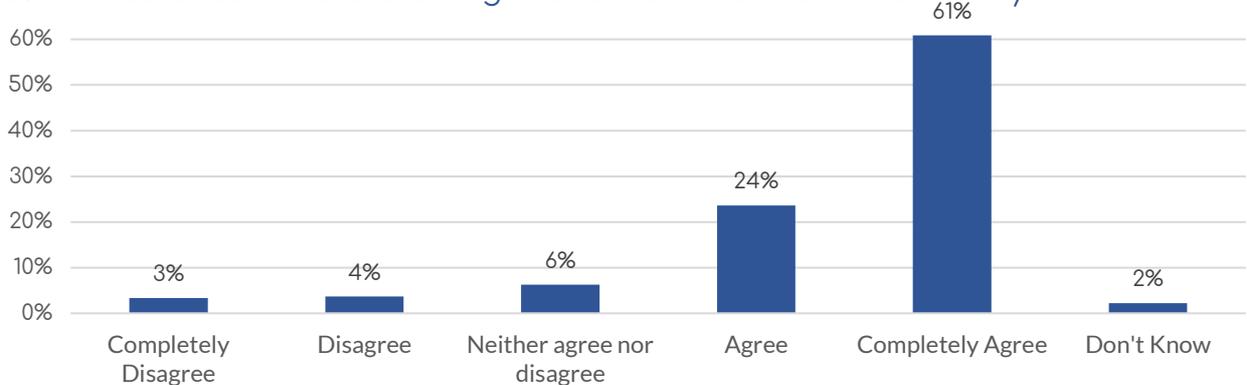
The survey captured the personal values of respondents through two sets of questions. The first section assessed the level of importance that local residents attribute to specific issues (Figure 5) and the second section captured their level of agreement with specific statements (Figure 6).

Figure 5: To what extent do you agree with the following statements
 Frequencies: Percentage Values

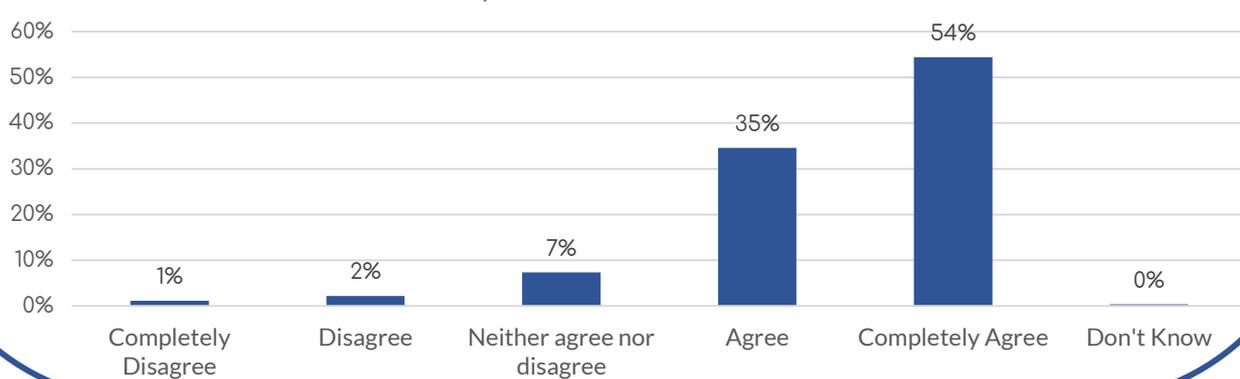
A. Humans have the right to change the environment in order to meet their needs



B. The balance of nature is fragile and it can be overturned easily



C. We need to create areas to protect flora and fauna



D. Humanity needs to prioritise the economic benefits that derive from the exploitation of the environment and then address aspects of environmental protection

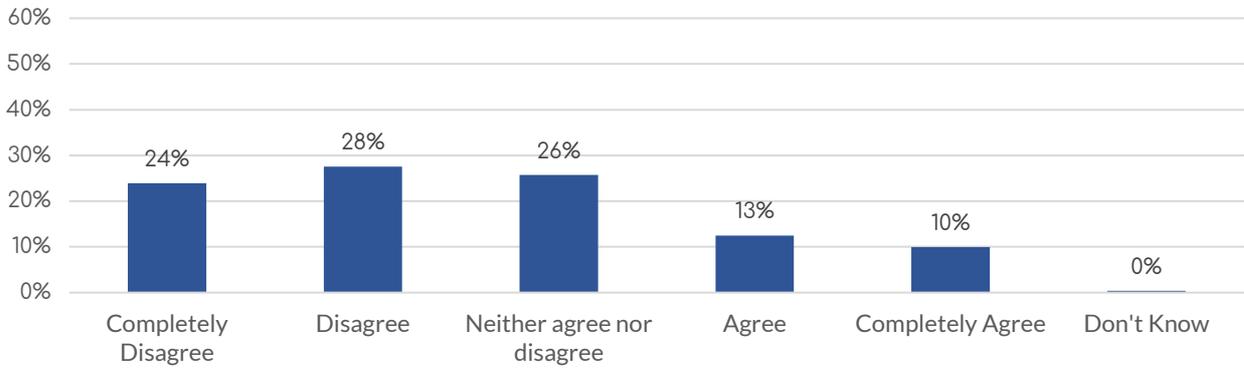
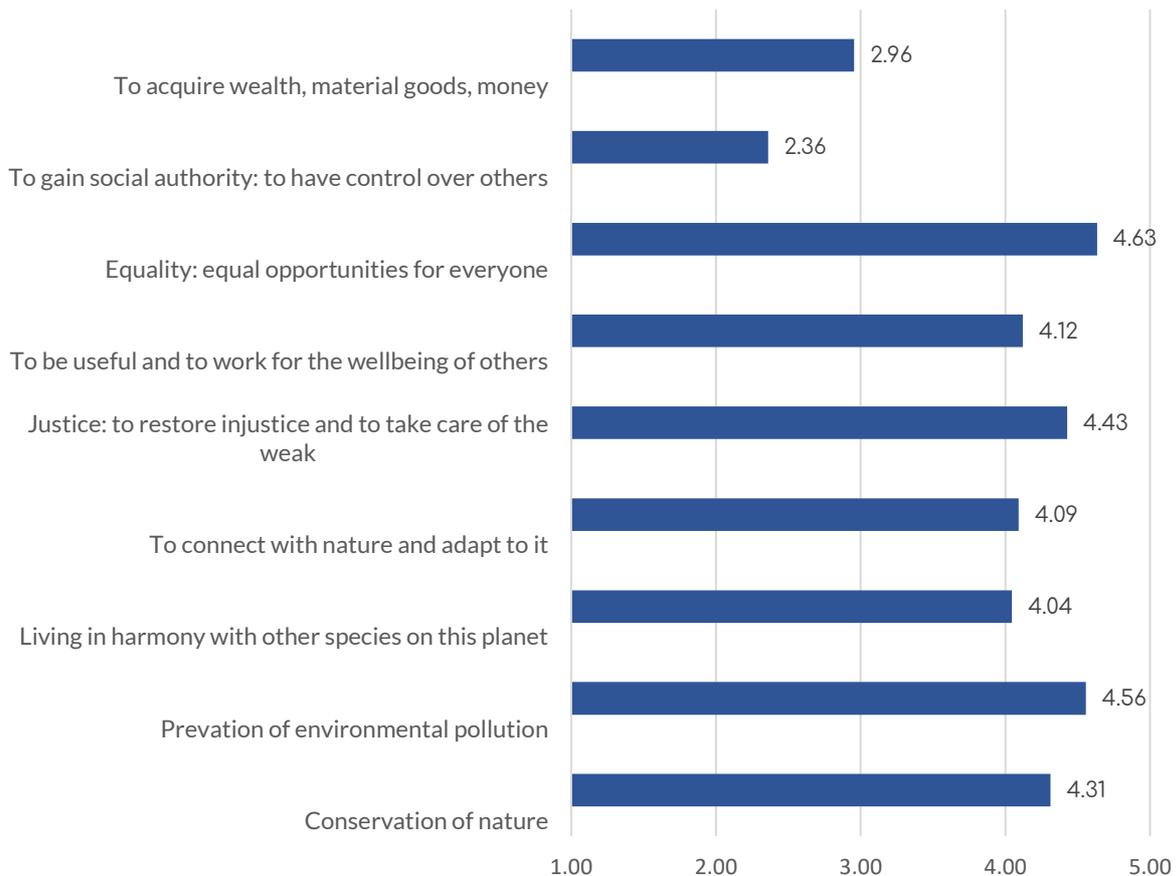


Figure 6: How do you rate the importance of the following values
 Mean Scores: 5-point Likert scale, 1=unimportant, 5=extremely important)



Based on the assessment of the values of local residents it appears that they support overwhelmingly the protection of nature (Figure 5C & Figure 6) and that they believe that the balance in nature can be overturned easily (Figure 5B). It is important to mention that a large part of the local community relies on agriculture for their livelihoods and they rely on a stable climate and nutrient cycles. Interestingly, the perceptions on the balance of economic development and environmental protection vary significantly, but they are still skewed away from economic development (Figure 5D).

4.6. Level of trust in institutions

Finally, respondents were asked how much they trust a number of institutions involved directly or indirectly in the management of the NPEMT. This was measured on a 5-point Likert scale with 1 representing low level of trust and 5 the highest. First, 52.3% of the respondents either has not heard about the Managing Authority of the NPEMT or does not know enough about it to form an opinion of whether they trust it. The management authorities of national parks in Greece are the primary institutions responsible for the management of their respective parks and they are legally obliged to manage the parks in accordance with national legislation. This is an interesting finding, especially when combined with the fact that 38.4% of the residents of the park are unaware of the fact that the area covered by the NPEMT is a protected area. Of the respondents who know about the managing authority of the NPEMT, 52.7% stated that they trust it a little or not at all, whereas 20.5% stated that they trust it either a lot or completely. Figure 4 presents the trust level for six institutions and organisations.

Overall, the level of trust for institutions and organisations was relatively low, especially if compared to our respective measurements in other European protected areas. The lowest level of trust was reported for Non-Governmental Organisations (NGO), such WWF, which according to our interaction with locals was justified by the overall aversion of some Greeks towards the involvement of NGOs in supporting refugees during the Syrian refugee crisis. This increased the alienation of local residents who live in poverty, but have not received support from NGOs. Therefore, the lack of trust reported here is not necessarily targeted at NGOs that are involved in the management and research of protected areas. As shown in Figure 7, the level of trust in the remaining institutions is also low.

Figure 7: Level of trust in institutions and organisations

Frequencies: Percentage Values

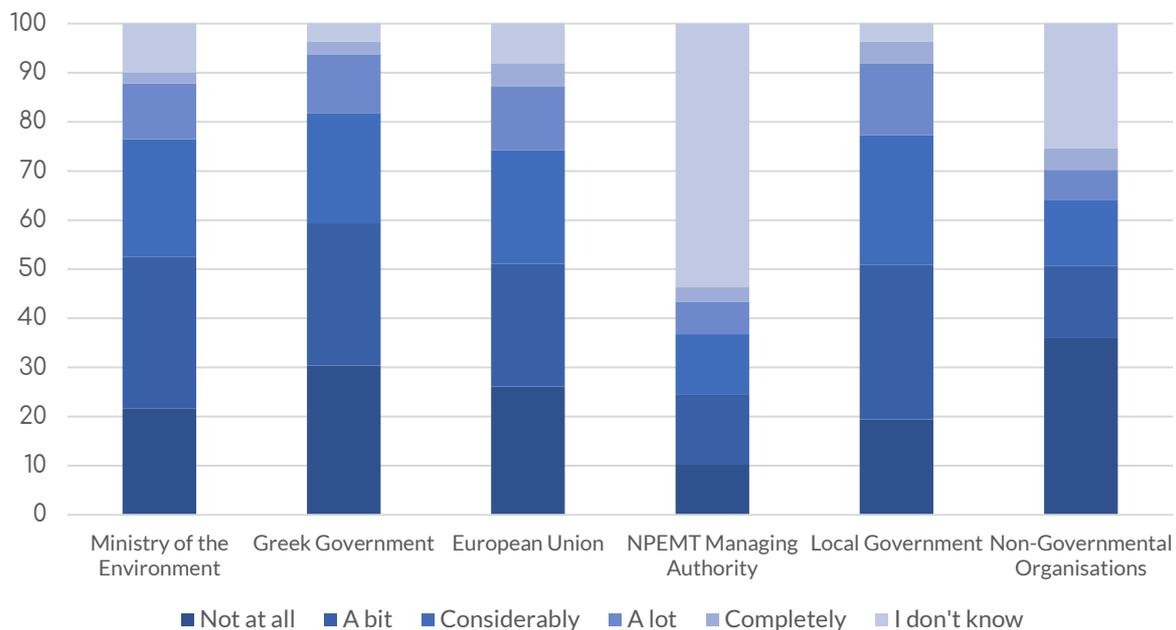
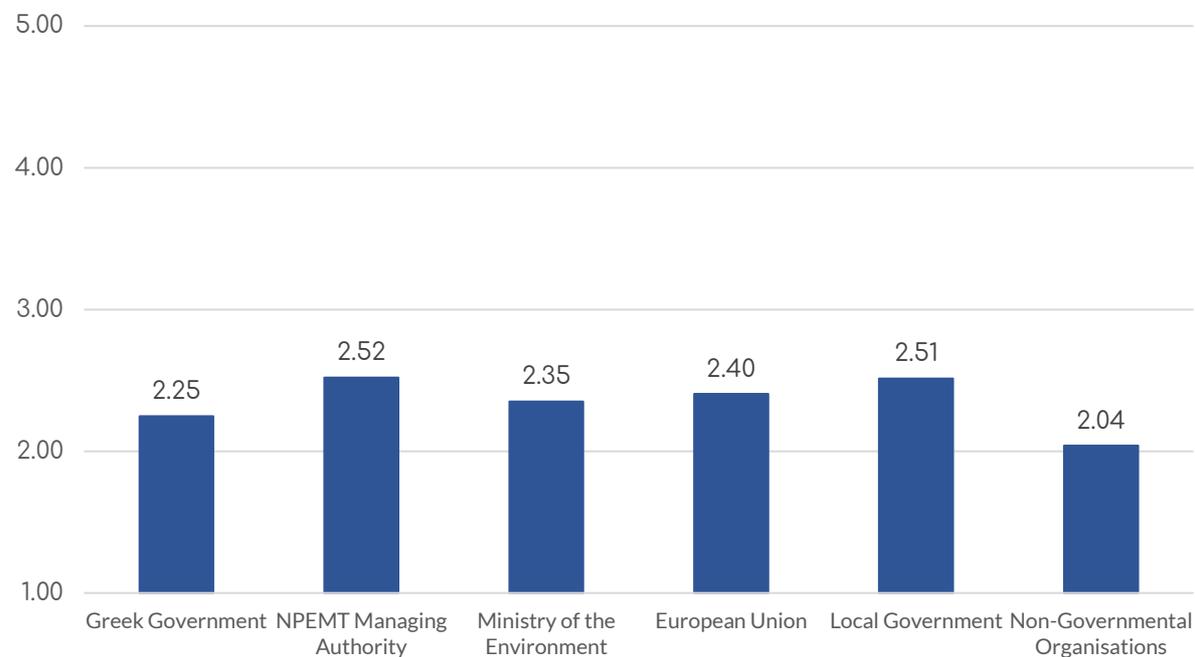


Figure 8: Level of trust in institutions and organisations

Mean Scores: 5-point Likert scale, 1=low level of trust, 5=highest level of trust)



5. CONCLUSIONS

The present study aimed to provide a detailed exploration of: a) The level of acceptance of the NPEMT by the local communities; b) Perceived impacts of the NPEMT on local communities; c) The personal values of the members of the local communities, and d) Trust in institutions involved in the management of the NPEMT.

Key findings are the following:

1. Based on the survey, the local residents of the NPEMT overall support the existence of the park. The majority of them believes that the balance of nature can be disturbed and supports the creation of protected areas for the protection of flora and fauna. However, based on the negative impacts that they are perceiving and on the low level of trust towards the managing authority of the NPEMT, it appears that there is discontent either with the mission of the park or the way in which it is executed.
2. Local residents lack awareness of the boundaries and the zoning of the NPEMT as well as on the managing authority of the park. In the survey most respondents acknowledged the presence of control mechanisms (such as patrolling and surveillance) that encourage responsible behaviour and they expressed that the majority of their fellow residents in the area does not comply with the regulations of the park.
3. Nearly a quarter of respondents expressed that they find it hard to use the resources of the NPEMT responsibly given the current regulations. Combined with the finding that the park has had a negative impact on the income of many locals residents and on their ability to use natural resources, it appears that there are significant equity issues that need to be addressed.
4. A number of interviewees thought the NPEMT is too large in area coverage and that it does not provide sufficient benefits to local communities to justify its restrictions.

The next steps involve analysing the relationship between the personal values of locals, the social impacts on local communities and the acceptance of the NPEMT. Specifically, this will be done by exploring the effect of certain demographic parameters on the perceptions of people as well as by identifying geospatial patterns within the area of the park. In total the FIDELIO research team aims to collect data from 20 protected areas in Europe.

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FIDELIO Research Project

FIDELIO is a research project funded by the European Research Council (project no 802605). The project aims to explore why some Protected Areas are more effective than others setting at its core the unravelling of complexities in socio-ecological systems of Protected Areas and the important role of social impacts of these conservation policies. During the project, a large amount of qualitative and quantitative social data is being collected in 20 European Protected Areas including the NPEMT. All reports of the project are available at: www.fidelio.landecon.cam.ac.uk



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