



**LIFE
ARCPROM**



ΑΝΘΡΩΠΟΣ
ΥΟΜΟ
HUMAN

ΑΡΚΟΥΔΑ
ORSO
BEAR

1/4

LIFE18 NAT/GR/000768

Improving human-bear coexistence in 4 National Parks of South
Europe

Action D5 Follow-up surveys on the perception and behavior of the
stakeholder groups

Questionnaire data analysed

Dati del questionario analizzati

Ανάλυση δεδομένων ερωτηματολογίου

December 2024

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SUMMARY

This report includes two sections, one for Greece and another for Italy, which present the analysis of questionnaire data gathered in Action D5 (Follow-up surveys on the perception and behavior of the stakeholder groups). All details on authors, methods and results are included in the Greek section for Northern Pindos National Park, Prespa National Park, and Rodopi Mountain Range National Park, and in the Italian section for Maiella National Park.

SOMMARIO

Questo rapporto comprende due sezioni, una per la Grecia e un'altra per l'Italia, che presentano l'analisi dei dati del questionario raccolti nell'Azione D5 (indagini di follow-up sulla percezione e il comportamento dei gruppi di stakeholder). Tutti i dettagli su autori, metodi e risultati sono inclusi nella sezione greca per il Parco nazionale del Pindo settentrionale, il Parco nazionale di Prespa e il Parco nazionale della catena montuosa Rodopi, e nella sezione italiana per il Parco nazionale della Maiella.

ΠΕΡΙΛΗΨΗ

Αυτή η έκθεση περιλαμβάνει δύο ενότητες, μία για την Ελλάδα και μία για την Ιταλία, που παρουσιάζουν την ανάλυση των δεδομένων του ερωτηματολογίου που συγκεντρώθηκαν στη Δράση Δ5 (Έρευνες παρακολούθησης σχετικά με την αντίληψη και τη συμπεριφορά των ομάδων ενδιαφερομένων). Όλες οι λεπτομέρειες για τους συγγραφείς, τις μεθόδους και τα αποτελέσματα περιλαμβάνονται στην Ελληνική ενότητα για το Εθνικό Πάρκο Βόρειας Πίνδου, το Εθνικό Πάρκο Πρεσπών και το Εθνικό Πάρκο Οροσειράς Ροδόπης και στην Ιταλική ενότητα για το Εθνικό Πάρκο Maiella.



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Action D5 Follow-up surveys on the perception and behavior of the
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Questionnaire data analysed-Greek National
Parks

Dati del questionario analizzati - Parchi
nazionali greci

Ανάλυση δεδομένων ερωτηματολογίου-
Εθνικά Πάρκα στην Ελλάδα

December 2024



20 ΧΡΟΝΙΑ
ΚΑΛΛΙΣΤΩ

Authors

Dimitrios Bormpoudakis, Tasos Hovardas, Giorgos Chatzinakos. Callisto – Wildlife and Nature Conservation Society.

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SUMMARY

This report analyzes data collected as part of Action D5 of the LIFE ARCPROM project, aimed at improving human-bear coexistence in three Greek National Parks (Rodopi Mountain Range; Northern Pindos; Prespa). Using a tailored questionnaire, 904 responses were gathered between 2022-2024 from stakeholders involved in participatory meetings. The study focused on stakeholder perceptions, interactions, and the effectiveness of participatory platforms in fostering collaboration and trust. Key findings highlight mixed perceptions of bear population trends, with primary producers and beekeepers reporting increases, contrasting with stable perceptions from Natural Environment and Climate Change Agency (NECCA) and tourism-related stakeholders. Stakeholder interactions showed mixed patterns across the National Parks, with Prespa demonstrating the most increase in collaborative engagement. Trust levels remained highest for NECCA, Non-Governmental Organisations, and the Forest Service, reflecting their pivotal roles. Participatory platforms were effective in knowledge sharing and influencing attitudes, but persistent challenges like trust deficits, negotiation reluctance, and limited local action hindered broader success. Positive elements, including stakeholder knowledge and platform impact diffusion, improved over time, but collaboration difficulties remained significant in certain areas. The findings underscore the platforms' value in enhancing dialogue and collective action while aligning with broader literature on participatory processes. Addressing structural barriers, promoting inclusivity, and ensuring practical actions are essential for sustaining long-term success in human-carnivore coexistence efforts.

SOMMARIO

Questo rapporto analizza i dati raccolti nell'ambito dell'azione D5 del progetto LIFE ARCPROM, finalizzata a migliorare la coesistenza uomo-orso in tre parchi nazionali greci (Rodopi Mountain Range; Pindo settentrionale; Prespa). Utilizzando un questionario personalizzato, tra il 2022 e il 2024 sono state raccolte 904 risposte dagli stakeholder coinvolti in incontri partecipativi. Lo studio si è concentrato sulle percezioni degli stakeholder, sulle interazioni e sull'efficacia delle piattaforme partecipative nel promuovere la collaborazione e la fiducia. I risultati principali evidenziano percezioni contrastanti sull'andamento della popolazione di orsi, con i produttori primari e gli apicoltori che segnalano aumenti, in contrasto con le percezioni stabili dell'Agenzia per l'Ambiente Naturale e i Cambiamenti Climatici (NECCA) e degli stakeholder legati al turismo. Le interazioni con gli stakeholder hanno mostrato modelli misti tra i Parchi Nazionali, con Prespa che ha mostrato il maggior incremento nell'impegno collaborativo. I livelli di fiducia sono rimasti più alti per la NECCA, le Organizzazioni non governative e il Servizio forestale, a testimonianza del loro ruolo centrale. Le piattaforme partecipative sono state efficaci nella condivisione delle conoscenze e nell'influenzare gli atteggiamenti, ma le sfide persistenti come il deficit di fiducia, la riluttanza a negoziare e l'azione locale limitata hanno ostacolato un successo più ampio. Gli elementi positivi, tra cui la conoscenza degli stakeholder e la diffusione dell'impatto della piattaforma, sono migliorati nel tempo, ma le difficoltà di collaborazione sono rimaste significative in alcune aree. I risultati sottolineano il valore delle piattaforme nel promuovere il dialogo e l'azione collettiva, allineandosi alla più ampia letteratura sui processi partecipativi. Affrontare le barriere strutturali, promuovere l'inclusività e garantire azioni pratiche è essenziale per sostenere il successo a lungo termine degli sforzi per la coesistenza uomo-carnivoro.

ΠΕΡΙΛΗΨΗ

Η παρούσα έκθεση αναλύει δεδομένα που συλλέχθηκαν στο πλαίσιο της δράσης D5 του προγράμματος LIFE ARCPROM, με στόχο τη βελτίωση της συνύπαρξης ανθρώπου-αρκούδας σε τρία ελληνικά εθνικά πάρκα (Οροσειρά Ροδόπης, Βόρεια Πίνδος, Πρέσπες).

Χρησιμοποιώντας ένα προσαρμοσμένο ερωτηματολόγιο, συγκεντρώθηκαν 904 απαντήσεις μεταξύ 2022-2024 από ενδιαφερόμενους φορείς που συμμετείχαν σε συμμετοχικές συναντήσεις (Πλατφόρμες). Η μελέτη επικεντρώθηκε στις αντιλήψεις των ενδιαφερομένων, στις αλληλεπιδράσεις και στην αποτελεσματικότητα των συμμετοχικών Πλατφορμών στην προώθηση της συνεργασίας και της εμπιστοσύνης. Τα βασικά ευρήματα αναδεικνύουν τις μικτές αντιλήψεις για τις τάσεις του πληθυσμού της αρκούδας, με τους πρωτογενείς παραγωγούς και τους μελισσοκόμους να αναφέρουν αυξήσεις, σε αντίθεση με τις σταθερές αντιλήψεις του Οργανισμού Φυσικού Περιβάλλοντος και Κλιματικής Αλλαγής (NECCA) και των ενδιαφερόμενων μερών που σχετίζονται με τον τουρισμό. Οι αλληλεπιδράσεις των ενδιαφερομένων έδειξαν μικτά πρότυπα σε όλα τα εθνικά πάρκα, με τις Πρέσπες να παρουσιάζουν τη μεγαλύτερη αύξηση στη συνεργασία. Τα επίπεδα εμπιστοσύνης παρέμειναν υψηλότερα για τον Οργανισμό Φυσικού Περιβάλλοντος και Κλιματικής Αλλαγής, τις Μη Κυβερνητικές Οργανώσεις και τη Δασική Υπηρεσία, αντανακλώντας τον κομβικό τους ρόλο. Οι συμμετοχικές Πλατφόρμες ήταν αποτελεσματικές στην ανταλλαγή γνώσεων και στον επηρεασμό των στάσεων, αλλά επίμονες προκλήσεις όπως τα ελλείμματα εμπιστοσύνης, η απροθυμία διαπραγμάτευσης και η περιορισμένη τοπική δράση εμπόδισαν την ευρύτερη επιτυχία. Τα θετικά στοιχεία, συμπεριλαμβανομένης της γνώσης των ενδιαφερομένων και της διάχυσης του αντίκτυπου της πλατφόρμας, βελτιώθηκαν με την πάροδο του χρόνου, αλλά οι δυσκολίες συνεργασίας παρέμειναν σημαντικές σε ορισμένους τομείς. Τα ευρήματα υπογραμμίζουν την αξία των Πλατφορμών για την ενίσχυση του διαλόγου και της συλλογικής δράσης, ενώ ευθυγραμμίζονται με την ευρύτερη βιβλιογραφία για τις συμμετοχικές διαδικασίες. Η αντιμετώπιση των διαρθρωτικών εμποδίων, η προώθηση της συμμετοχικότητας και η εξασφάλιση πρακτικών δράσεων είναι ουσιώδεις για τη διατήρηση της μακροπρόθεσμης επιτυχίας στις προσπάθειες συνύπαρξης ανθρώπου και σαρκοφάγων.

Chapter 1: Introduction to ARCPROM's Action D5

This report presents an analysis of the questionnaire data collected as a part of Action D5 the LIFE ARCPROM (LIFE18 NAT/GR/768) project. The LIFE ARCPROM project aims at improving human-bear coexistence in three National Parks (NPs) of Greece (Prespa, Northern Pindos, Rhodope Mountain range) and one in Italy (Majella), and this report concerns Action D5 in the Greek NPs. Action D5 (Follow-up surveys on the perception and behaviour of stakeholder groups) aims to gather insights into public attitudes and stakeholder opinions concerning the brown bear (*Ursus arctos*) and the coexistence of bears with human communities in the project areas. A main goal is to capture the influence of Platform operation on stakeholder perceptions and behaviour with regard to strengths and weaknesses of the Platform itself.

Stakeholder perceptions and behaviour are decisive for the development of human-bear as well as human-human conflict in terms of bear conservation and management. Platform operation is expected to have an effect on the adoption of good practice in bear conservation and management practices. This will most probably result in decreased human-bear and decreased human-human conflict, and better working relations between key stakeholder groups. In addition, Platform operation is expected to influence stakeholder perceptions and behaviour with regard to strengths and weaknesses of the Platform itself.

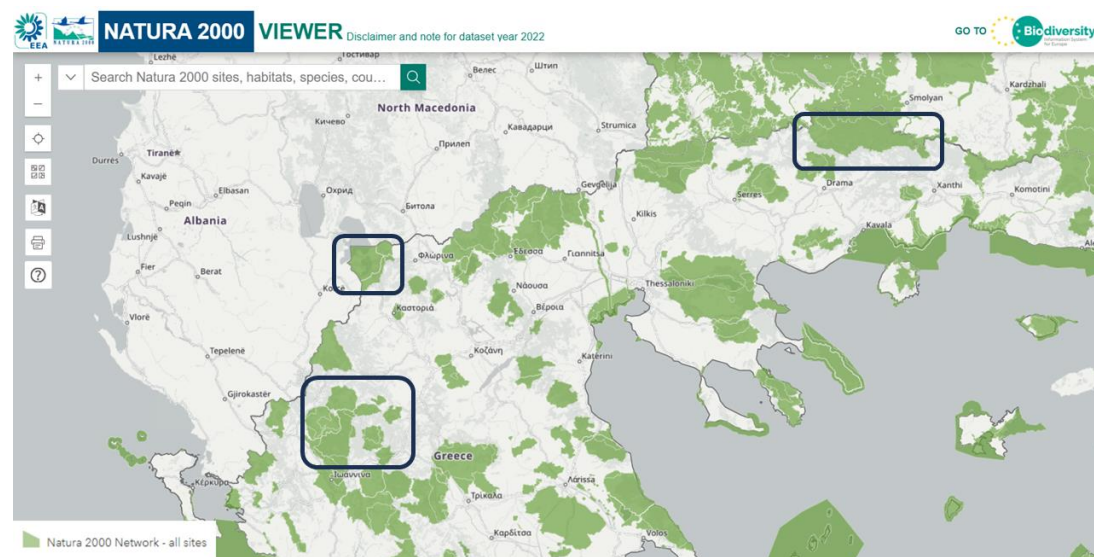


Figure 1. ARCPROM project areas in Greece. Top right: Rodopi Mountain Range NP; Top left: Prespa NP; bottom left: Northern Pindos NP. Source: European Environment Agency (EEA), NATURA 2000 Viewer.

Chapter 2: Methodology

Survey instrument design

The survey instrument is a questionnaire comprising of 94 items in eight sections (Human-bear and stakeholder interaction; Working relations and trust; Consensus estimates; Likert-scale items; Strengths and weaknesses of Platform operation; Communication methods; Sample characteristics; Respondents' comments. The instrument follows the structure of an analogous instrument used in the frame of the EU Platform on Coexistence between People and Large Carnivores¹ to assess the operation of Regional Platforms in several locations in Europe². The instrument was also adapted to a digital format using Google Forms, necessary for administration and data collection. The English version of the questionnaire is included as Annex to this document. More details regarding the questionnaire can be found in the ARCPROM deliverable dedicated to the design of the survey instrument (Hovardas, 2021).

Questionnaire delivery and data preparation

The questionnaire was completed by responders mainly during and immediately after the meetings and workshops held in the three NPs between March 2022 and November 2024 within Action C1 (Stakeholder consultation and involvement) of ARCPROM (see final reports in Hovardas, 2024). Questionnaires were also completed in the few days after the completion of each Platform meeting or workshop in each NP, when the events and processes was fresh in the responders' minds.

A total of 36 meetings were held across the three Greek NPs between 2022-2024. These meetings brought together a variety of stakeholders, including local authorities, forestry services, environmental NGOs, and representatives of agricultural, livestock, beekeeping, and hunting associations. Academics, forestry officials, and staff from the management units of the NPs (Local Management Units of Natural Environment and Climate Change Agency, henceforth NECCA) also attended. It is worth noting that the Platform meetings were designed and implemented in combination with open workshops. While the Platforms provided an opportunity for more strategic and targeted planning with the participation of representatives from key stakeholders in each area, the open events and workshops expanded participation opportunities to all members of the local communities.

The questionnaire was administered mainly by Callisto with the help of NECCA. The participation in data collection was voluntary and all participants were guaranteed anonymity. The core aim of sample selection and data collection was not to provide a representative account of all local residents within the three NPs. Rather, the main intentions were to: 1. concentrate on stakeholders involved in bear conservation and management; 2. focus on stakeholders that took part in Platform meetings and workshops. Data from physical questionnaires were uploaded by the Callisto on Google Forms for ease of data handling and manipulation. An integrated pipeline for data analysis and presentation (Google Forms to MS Word) was implemented in R (version 4.3.1, R Core Team 2023), using RStudio (Allaire 2012) and RMarkdown (Allaire et al. 2023; see also Xie et al. 2018, 2020).

¹ https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive/large-carnivores/eu-large-carnivore-platform_en

² https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive/large-carnivores/eu-large-carnivore-platform/eu-regional-large-carnivore-platforms_en

Chapter 3. Sample and sample demographic characteristics

We collected 1013 questionnaires, 728 physical copies and 285 online (on the Google Forms platform). Physical copy questionnaires were digitized by the authors in the same online Google Forms platforms used for the online questionnaires. From them, after excluding questionnaires that were not fully completed, we obtained a final sample of 904 questionnaires (2022: 302; 2023: 300; and 2024: 302). 303 questionnaires were collected from Prespa NP, 295 from North Pindos NP and 306 from Rodopi Mountain Range NP.

Roughly two-thirds of the sample declared male as their preferred gender each year across the three NPs, with (Table 1), reflecting both the demographic characteristics of the areas and the skewed distribution of women in primary sector (livestock breeders and farmers), hunter and beekeeper stakeholder groups. In terms of self-identified social group, participants fall within 10 categories (Table 2).

Table 1. Responders' gender distribution in the three NPs from 2022-2024. PNTS: Prefer not to say.

| year | | F (N=316) | M (N=583) | PNTS (N=5) | Total (N=904) |
|------|-----------------------|------------|------------|------------|---------------|
| 2022 | National Park | | | | |
| | Northern Pindos | 29 (25.9%) | 64 (33.7%) | 0 | 93 (30.8%) |
| | Prespa | 53 (47.3%) | 50 (26.3%) | 0 | 103 (34.1%) |
| | Rodopi Mountain Range | 30 (26.8%) | 76 (40.0%) | 0 | 106 (35.1%) |
| 2023 | National Park | | | | |
| | Northern Pindos | 33 (37.1%) | 73 (34.6%) | 0 | 106 (35.3%) |
| | Prespa | 41 (46.1%) | 55 (26.1%) | 0 | 96 (32.0%) |
| | Rodopi Mountain Range | 15 (16.9%) | 83 (39.3%) | 0 | 98 (32.7%) |
| 2024 | National Park | | | | |
| | Northern Pindos | 44 (38.3%) | 47 (25.8%) | 5 (100.0%) | 96 (31.8%) |
| | Prespa | 46 (40.0%) | 58 (31.9%) | 0 (0.0%) | 104 (34.4%) |
| | Rodopi Mountain Range | 25 (21.7%) | 77 (42.3%) | 0 (0.0%) | 102 (33.8%) |

Table 2. Responders' stakeholder group distribution (2022-2024).

| | 2022 (N=302) | 2023 (N=300) | 2024 (N=302) | Total (N=904) |
|-----------------------------------|--------------|--------------|--------------|---------------|
| Stakeholder group | | | | |
| Bee keeper | 75 (24.8%) | 51 (17.0%) | 40 (13.2%) | 166 (18.4%) |
| Forest service | 25 (8.3%) | 6 (2.0%) | 16 (5.3%) | 47 (5.2%) |
| Hunter | 26 (8.6%) | 25 (8.3%) | 10 (3.3%) | 61 (6.7%) |
| Municipality / regional authority | 26 (8.6%) | 20 (6.7%) | 36 (11.9%) | 82 (9.1%) |
| NECCA | 25 (8.3%) | 9 (3.0%) | 27 (8.9%) | 61 (6.7%) |
| NGO employee | 18 (6.0%) | 18 (6.0%) | 11 (3.6%) | 47 (5.2%) |
| Primary sector | 41 (13.6%) | 47 (15.7%) | 28 (9.3%) | 116 (12.8%) |
| Resident-other | 22 (7.3%) | 70 (23.3%) | 70 (23.2%) | 162 (17.9%) |
| Tourism sector | 25 (8.3%) | 38 (12.7%) | 27 (8.9%) | 90 (10.0%) |
| Veterinarian / scientist | 17 (5.6%) | 13 (4.3%) | 37 (12.3%) | 67 (7.4%) |

In terms of education and income characteristics, the responders to our instrument roughly reflect the demographic characteristics of the bear conservation and management stakeholder groups and the local communities in rural, mountainous Greece.

Table 3. Responders' education characteristics (2022-2024).

| | 2022 (N=302) | 2023 (N=300) | 2024 (N=302) | Total (N=904) |
|------------------|--------------|--------------|--------------|---------------|
| Education | | | | |
| PNTS | 7 | 12 | 10 | 29 |
| Up to Secondary | 64 (21.7%) | 81 (28.1%) | 72 (24.7%) | 217 (24.8%) |
| Graduate | 101 (34.2%) | 90 (31.2%) | 111 (38.0%) | 302 (34.5%) |
| Vocational | 73 (24.7%) | 58 (20.1%) | 32 (11.0%) | 163 (18.6%) |
| Post-graduate | 57 (19.3%) | 59 (20.5%) | 77 (26.4%) | 193 (22.1%) |

Table 4. Responders' income characteristics (2022-2024).

| | 2022 (N=302) | 2023 (N=300) | 2024 (N=302) | Total (N=904) |
|---------------|--------------|--------------|--------------|---------------|
| Income | | | | |
| <Average | 50 (16.6%) | 55 (18.3%) | 32 (10.6%) | 137 (15.2%) |
| Average | 212 (70.2%) | 206 (68.7%) | 230 (76.2%) | 648 (71.7%) |
| >Average | 40 (13.2%) | 39 (13.0%) | 40 (13.2%) | 119 (13.2%) |

Overall, the survey responders' characteristics reflect the demographics of the three NPs and aligns with the goal of capturing the opinions of key stakeholders in bear conservation and management. Responders were evenly distributed across the three NPs and included diverse stakeholder groups such as bee keepers, residents, primary sector representatives, and local authorities, with an emphasis on engaging those directly involved in bear-related issues. The educational background of responders ranged widely, consistent with the diverse expertise required for conservation efforts (Table 3). Income levels were predominantly average (71.7%), reflecting the economic realities of the region (Table 4).

Chapter 4: Results

Perceived human-bear interaction and perceived stakeholder interaction

Section 1 of the questionnaire includes three items on perceived human-bear interaction (bear population increased, stable or decreased) and perceived stakeholder interaction modalities (negotiation, conflict, cooperation). The items for stakeholder interaction referred to what is perceived by respondents within Platforms and in the wider region, hopefully revealing if the Platforms can promote stakeholder collaboration and joint action as compared to the region.

Overall, more than 50% of respondents across the three NPs feel that bear numbers are stable, while there is an increasing trend in respondents that feel that bear numbers are increasing (Fig 2). The patterns of bear experience across the NPs individually are different. In Northern Pindos NP and Rodopi Mountain Range NP the trends are parallel to the overall trend across the three NPs. In Prespa NP the pattern diverges from the overall trend: more respondents feel that bear numbers are increasing, especially in the 2023 sub-sample. Notably, very few respondents believe that bear numbers are decreasing across the three NPs.

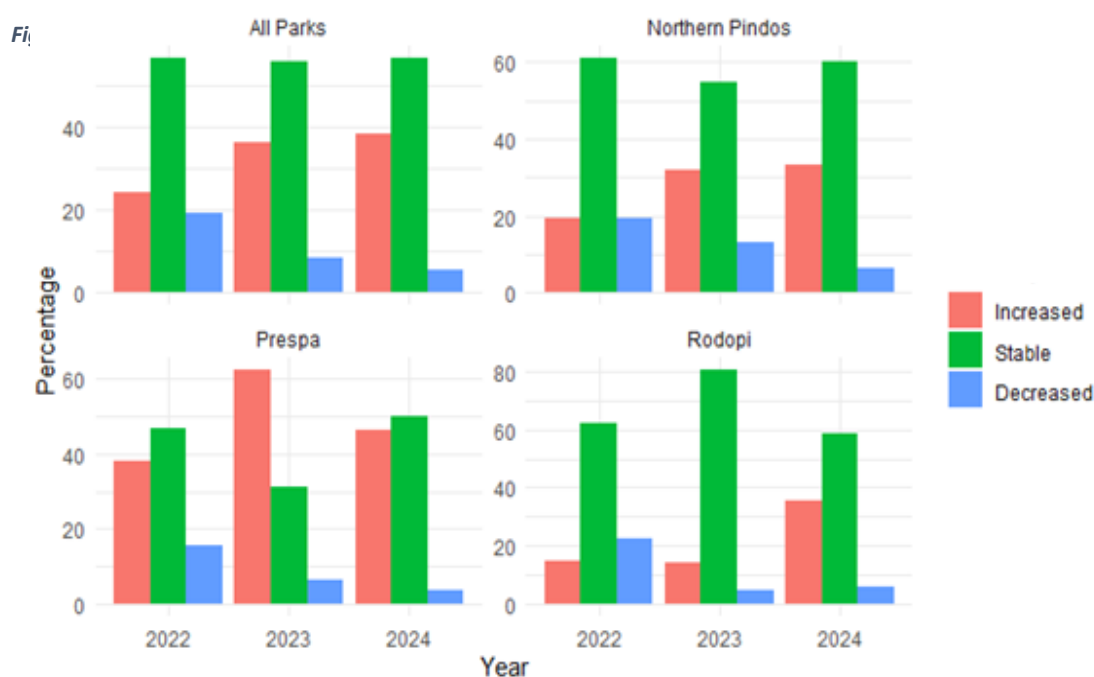


Figure 2. Perceived human-bear interaction by National Park (2022-2024)

If we tabulate perceived bear-human conflict per selected stakeholder groups across all parks, we can see that this perception differs between six selected stakeholder groups (Fig. 3). Primary sector producers (livestock breeders and farmers), primarily, and secondarily, bee keepers, veterinarians / scientists, and NECCA employees appear to believe that bear numbers are increasing. Indeed, for the three first groups this perception presented an increasing temporal trend across years (Fig. 4). Other residents and tourism sector employees and entrepreneurs, on the other hand, believed that human-bear conflict remained more or less the same. These findings indicate that perception of human-bear conflict differs considerably between the selected stakeholder groups and that conflict increase is linked to these groups who suffer damages from bears.



Figure 3. Perceived human-bear interaction for selected stakeholder groups (2022-2024).

For perceived stakeholder interaction, analysis showed a statistically significant difference ($X^2 = 9.88, p = 0.04$) across the years 2022, 2023, and 2024 (Table 5). Conflict increased after 2022, while cooperation remained relatively stable. Negotiation decreased from 2022 and remained stable thereafter. Despite this latter trend, negotiation is the code with the highest frequency for all years examined.

Table 5. Perceived stakeholder interaction (2022-2024)

| | 2022 | 2023 | 2024 |
|-------------|-------|-------|-------|
| Conflict | 21.85 | 28.67 | 31.79 |
| Cooperation | 32.45 | 34.33 | 31.79 |
| Negotiation | 45.70 | 37.00 | 37.42 |

If we disaggregate the data set on perceived stakeholder interaction by NP (Fig. 4), we can observe different patterns between parks. Notably, in Prespa NP we notice a steady increase in perceived cooperation between stakeholders across years. Northern Pindos NP presented highest percentages for negotiation across years, while in Rodopi Mountain Range NP we observed a contradictory trend with both stakeholder conflict and negotiation increasing during the last year.

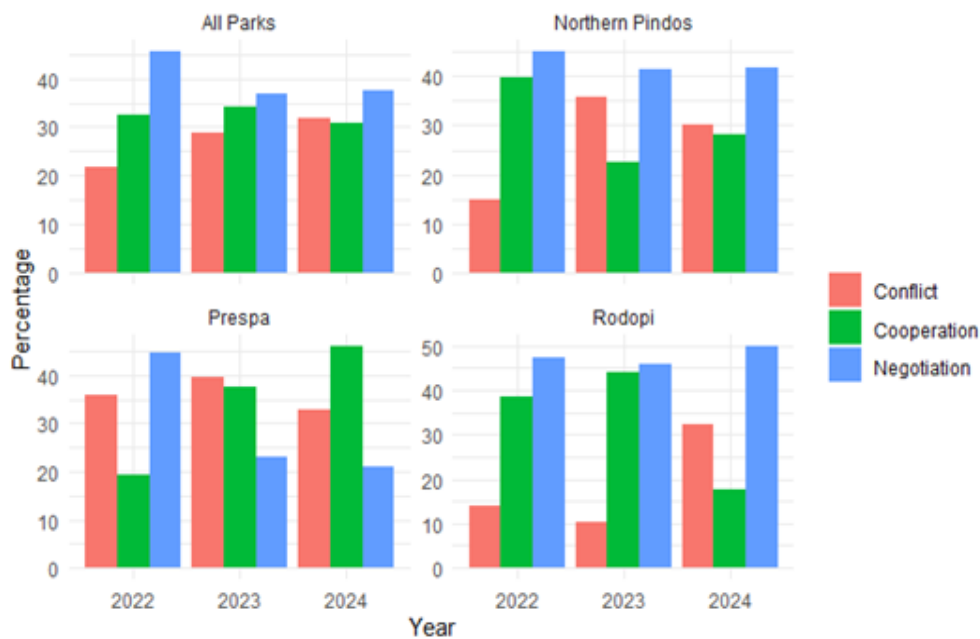


Figure 4. Perceived stakeholder interaction modalities in the three National Parks.

Chi-squared tests for all three years indicated significant differences in the distribution of interaction types across stakeholder groups (Table 6). For primary sector producers, stakeholder interaction is perceived quite contradictorily, as either conflict or negotiation, with conflict prevailing in time. Other residents perceive stakeholder interaction predominantly as cooperation. Bee keepers, NECCA employees and participants engaged in the tourist sector presented mixed trends split between cooperation and negotiation. Our results did not reveal changes in stakeholder interaction mode for age and income variables within each year, with the exception of age in 2024, where the interaction modes showed significant variation across age groups (Chi-squared = 51.35, $p = 0.001$). Younger age groups (<30 and 31–40) exhibited a higher prevalence of both conflict and negotiation, while older age groups (>60) demonstrated a higher proportion of cooperation.

Table 6. Stakeholder interaction modalities disaggregated by stakeholder group.

| Year | Interaction modality | Bee keeper | NECCA | Primary sector | Resident-other | Tourism sector | Chi-square test |
|------|----------------------|------------|-------|----------------|----------------|----------------|--------------------------------|
| 2022 | Conflict | 18.67 | 28.00 | 31.71 | 31.82 | 24.00 | $\chi = 19.28$, $p = 0.03$ |
| | Cooperation | 42.67 | 20.00 | 24.39 | 45.45 | 40.00 | |
| | Negotiation | 38.67 | 52.00 | 43.90 | 22.73 | 36.00 | |
| 2023 | Conflict | 19.61 | 11.00 | 44.68 | 30.00 | 26.32 | $\chi = 24.45$, $p = 0.01$ |
| | Cooperation | 35.29 | 55.56 | 14.89 | 47.14 | 28.95 | |
| | Negotiation | 45.10 | 33.44 | 40.43 | 22.86 | 44.74 | |
| 2024 | Conflict | 35.00 | 29.63 | 46.43 | 27.14 | 25.93 | $\chi = 34.31$, $p = 0.00$ |
| | Cooperation | 22.50 | 11.11 | 17.86 | 44.29 | 48.15 | |
| | Negotiation | 42.50 | 59.26 | 35.71 | 28.57 | 25.93 | |

Stakeholder cooperation and trust

In Section 2 of the questionnaire, respondents were requested to indicate stakeholder groups with whom they believed they could work well and whom they trusted. Table 7 shows a breakdown of preferred stakeholders to work with over the years (Table 7). Primary sector producers followed by NECCA employees were consistently the most preferred stakeholder groups to work with. Environmental non-governmental organizations (ENGOS) followed with increasing percentages in time. The next groups were the Forest Service and veterinarians/scientists. Municipal/ regional authorities remained relatively stable across all years with percentages around 40%. Entrepreneurs/employees in the tourism sector, tourists/visitors, the local media, and especially, rural developmental agencies and Chambers of Commerce presented an increase in their percentages in the last year (2024), highlighting potential shifts in collaboration priorities as the LIFE ARCPROM project concluded.

Table 7. Preferred stakeholder group in terms of Platform collaboration year across the three NPs.

| Preferred stakeholders | 2022 | 2023 | 2024 |
|--|-------------|-------------|-------------|
| Primary sector | 78.48% | 66.00% | 65.56% |
| Forest service | 55.63% | 46.33% | 46.03% |
| NECCA | 67.22% | 60.67% | 66.89% |
| Municipal-regional authorities | 40.40% | 39.00% | 42.72% |
| Vet / other scientist | 46.36% | 44.00% | 54.97% |
| ENGOS | 55.3% | 55.67% | 64.57% |
| Tourism sector (entrepreneurs/employees) | 18.54% | 17.67% | 21.19% |
| Tourists-visitors | 16.89% | 16.33% | 23.18% |
| Local media | 13.25% | 14.67% | 16.89% |
| Rural development agencies | 2.65% | 3.33% | 14.24% |
| Chambers of Commerce | 1.99% | 0.00% | 6.95% |

If we further disaggregate the data by NP (Fig. 5), we can see that in each NP, a different pattern emerges illustrating the differences in socio-cultural backgrounds in the three NPs. For instance, primary sector producers were pronounced in Rodopi Mountain Range NP, while entrepreneurs and employees in the tourist sector and tourists/visitors were more frequently referred to by participants in Northern Pindos NP. In Prespa NP, where the targeted human population was relatively more confined as in other NPs, Municipal/Regional authorities featured with increased percentages. In terms of stakeholder cooperation as disaggregated by stakeholder group, we can observe an ingroup favouritism for primary sector producers, which however decreased in time (Fig. 6). Other groups like beekeepers and veterinarians/other scientists also seemed to prefer primary sector producers to work with. In this case this preference also seemed to decrease with time. Other residents and entrepreneurs/employees in the tourism sector exemplified from the start a more balanced preference of working with other groups.

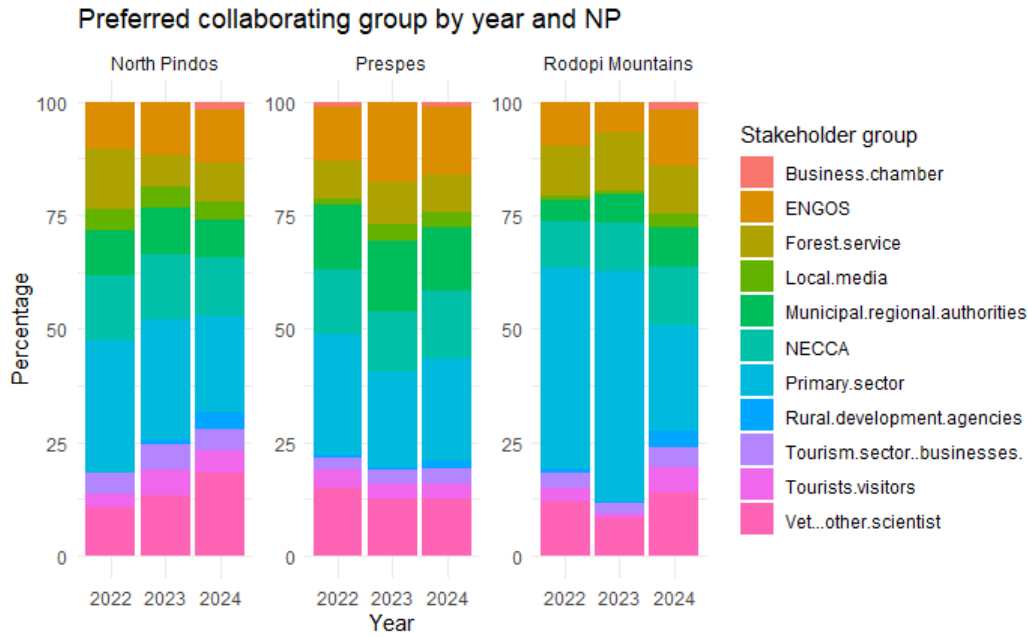


Figure 5. Preferred stakeholder group by National Park.

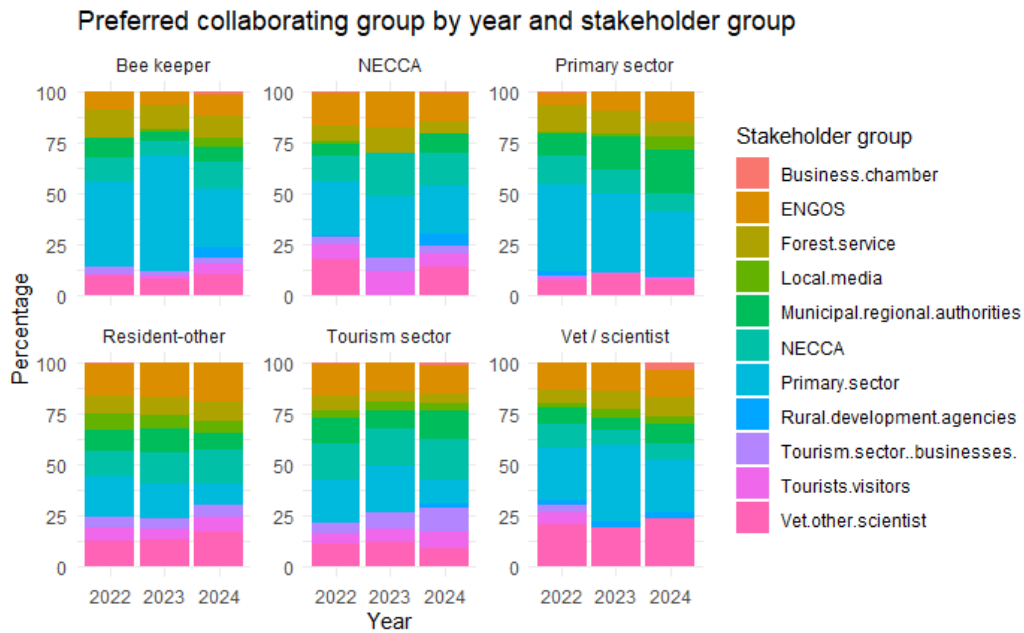


Figure 6. Preferred stakeholder group disaggregated by selected stakeholder groups.

In terms of trust, Table 8 shows participant responses for various stakeholders across years. NECCA employees featured consistently with the highest percentages for this item, which are almost identical with preferences to with this group (see Table 7). These findings exemplify the crucial contribution of NECCA not only within the frame of LIFE ARCPROM actions but also for stakeholder constructive interaction in the project areas, overall. Primary sector producers and environmental non-governmental organizations followed with relatively increased percentages, showcasing the potential for trust building among groups who may elsewhere stand in tension due to the increase of bear numbers and human-bear conflict. Percentages for the Forest Service, other scientists and veterinarians increased in time, which revealed the contribution of stakeholder groups which can provide crucial scientific knowledge for

stakeholder collaboration and joint action. The relatively lower percentages for other stakeholder groups obviously reflect less frequent collaboration with other stakeholder groups (i.e. opportunities for building trust)

A more detailed comparison between preferred collaborating groups (Table 7) and most trusted groups (Table 8) may reveal notable aspects for intergroup dynamics. Primary sector producers dominated as the preferred group for collaboration, while it also remained one of the most trusted groups, albeit with slightly less percentages in the trust item. NECCA and ENGOS feature prominently in both collaboration and trust, reflecting their dual role as both reliable and effective partners. However, groups like veterinarians/ other scientists showed higher trust levels compared to their collaboration preferences, suggesting that while they are highly trusted, they may not play as central a role in stakeholder collaboration. In contrast, groups such as Chambers of Commerce and Rural development agencies exhibited quite low percentages for both collaboration and trust, highlighting their peripheral role in stakeholder interaction.

Table 8. Trusted stakeholder group in terms of Platform collaboration per year. All numbers are percentages.

| Stakeholder group | 2022 | 2023 | 2024 |
|----------------------------|--------|--------|--------|
| Primary sector | 60.67% | 61.20% | 48.81% |
| ENGOS | 51.67% | 56.86% | 60.75% |
| NECCA | 65.33% | 62.21% | 63.48% |
| Forest service | 40.00% | 41.81% | 45.73% |
| Other scientists | 31.67% | 33.44% | 43.34% |
| Veterinarians | 23.67% | 16.39% | 27.65% |
| Municipal authorities | 17.67% | 21.74% | 16.72% |
| Tourism sector | 8.67% | 10.70% | 12.97% |
| Rural development agencies | 4.33% | 2.34% | 4.78% |
| Local media | 6.33% | 6.35% | 7.51% |
| Chamber of Commerce | 2.00% | 1.00% | 1.71% |

In all parks, Primary sector producers, NECCA, and environmental non-governmental organizations consistently represent the largest proportions of trusted stakeholders, emphasizing their instrumental role in bear conservation and management (Fig. 7). As we have already noted for working relations, Municipal/regional authorities had relatively higher percentages in Prespa NP, while primary sector producers had relatively higher percentages in Rodopi Mountain Range NP. In these cases, we can infer that trust building followed closely working relations. Over time, there was a gradual increase in the diversity of trusted stakeholders. These trends highlight both stability in core stakeholder trust and a subtle shift towards more inclusive and diversified stakeholder engagement across the regions.

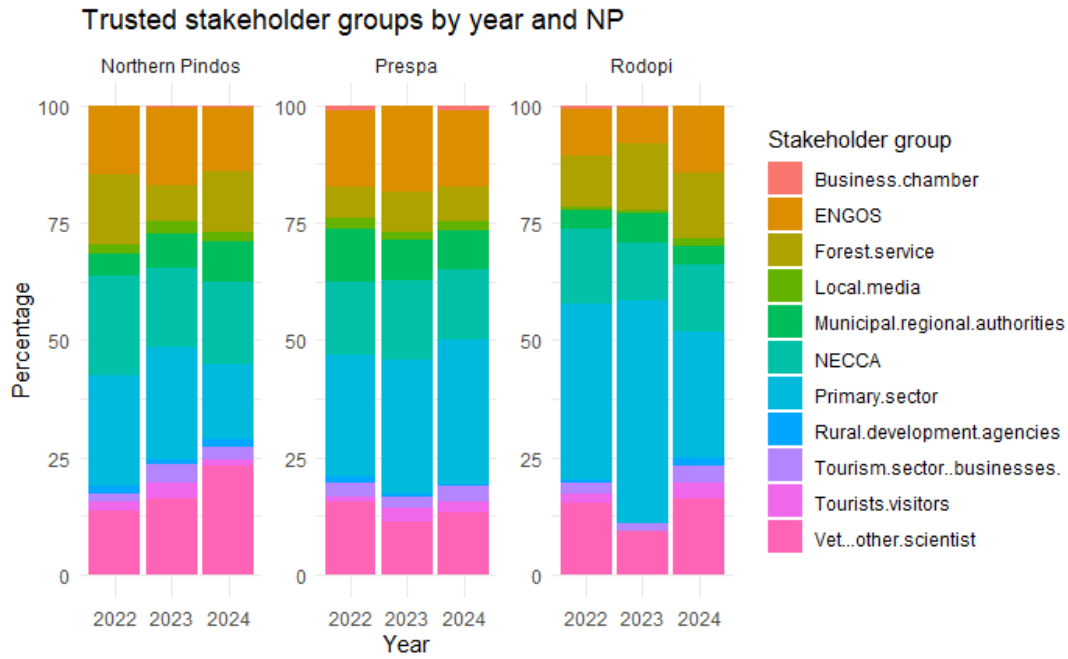


Figure 7. Trust for stakeholder groups by National Park.

Ingroup favoritism for primary sector producers was validated once more for trust, as it was for working relations (Fig. 8). Beekeepers also tended to trust primary producers more than other groups. Overall, primary sector producers and NECCA consistently dominated trust across all groups (Fig. 8), most probably reflecting their central roles in collaborative efforts. Groups such as Veterinarian / other scientist and Tourism sector show a notable preference for working with experts like Veterinarian / other and environmental organizations like ENGOS, indicating a more specialized focus. Meanwhile, groups like other residents as well as entrepreneurs and employees in the tourism sector displayed a more balanced breakdown of trust for a variety of stakeholders. Finally, groups like Chambers of Commerce and Rural development agencies showed relatively decreased percentages of trust, revealing once again their peripheral role and contribution. These patterns for trust suggest that while some stakeholder groups are central for bear conservation and management, others have more targeted or limited roles in collaborative dynamics. The latter finding does not mean that peripheral roles should be undermined or undervalued, however. Future initiatives in the project areas need to strive for configuring the optimal stakeholder synthesis for each different item to be addressed.

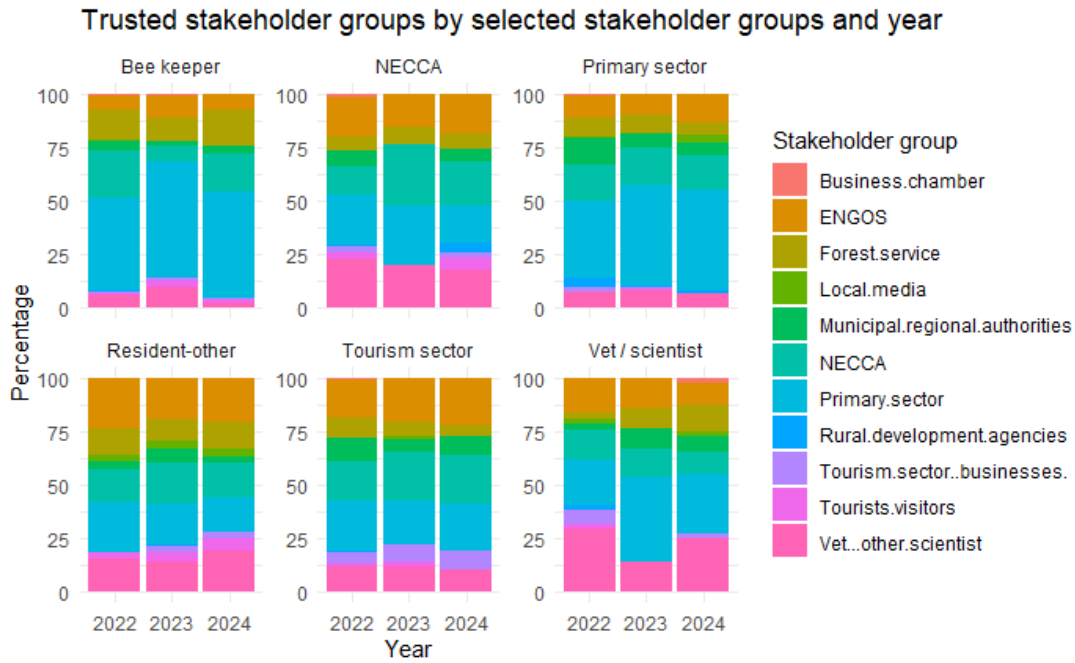


Figure 8. Trust for stakeholder groups by selected stakeholder groups.

Platform effectiveness

The following questions aimed to assess the effectiveness of participatory platforms in fostering trust, influencing attitudes, and enhancing social cohesion among stakeholders. They evaluate whether participants are perceived to honor agreements, whether their stance toward wildlife (specifically the bear) may shift, and whether their positioning towards other social groups may improve. Overall, these questions seek to determine the platform's impact on collaboration, mutual understanding, and behavioral change.

Fig. 9 illustrates the percentage of "Agree" and "Disagree" responses across three factors – honoring agreements, attitude change towards bears, and attitude change towards other stakeholders – within the participatory platforms in Northern Pindos, Prespa, and Rodopi Mountain Range NPs. Agreement percentages for honoring agreements are high across all parks, with Prespa and Northern Pindos reaching 70%-80% and Rodopi Mountain Range reaching slightly lower at 60%-70%. For attitude change towards bears and other stakeholders, agreement percentages are more moderate, ranging between 50%-70% for Northern Pindos and Prespa, and slightly lower (~50%-60%) in Rodopi Mountain Range. All these findings are quite encouraging for the dynamics of participatory processes in LIFE ARCPROM, indicating a commitment to these processes and their potential for initiating change for both the focal species as well as stakeholder groups engaged. Agreement levels remained relatively consistent across the years for all factors and parks, with no significant temporal variation. Participants in Rodopi Mountain Range NP revealed most reservations for agreement-honoring and change in terms of bear attitudes, while participants in Prespa NP showed most reservations for change in terms of intergroup attitudes.

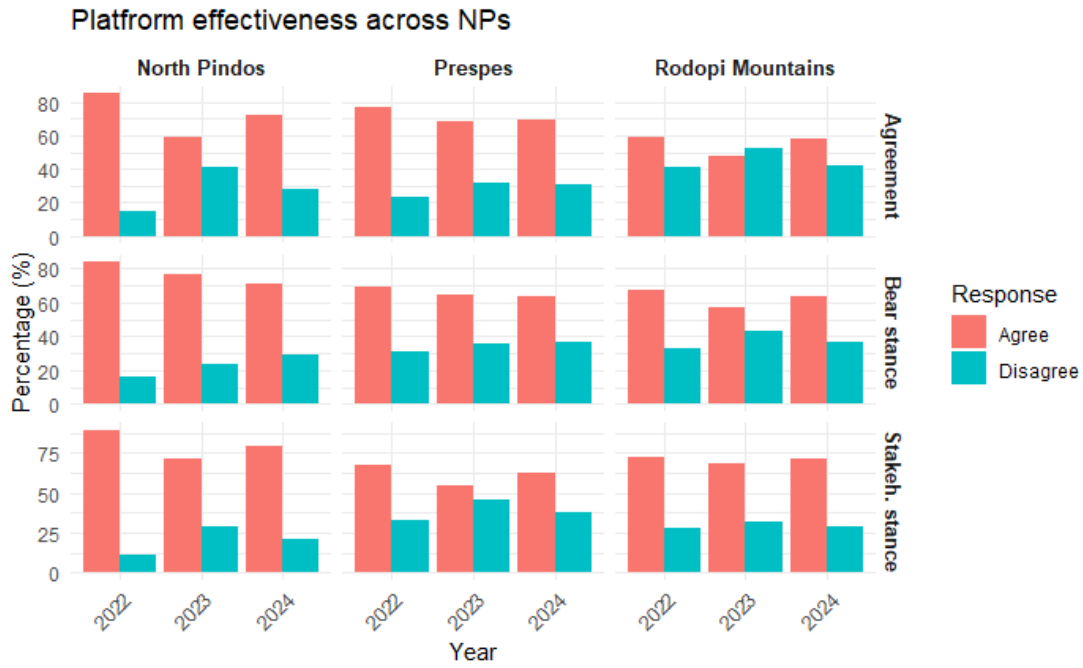


Figure 9. Percentage of "Agree" and "Disagree" responses across three factors – honouring agreements (Agreement row), attitude change towards bears (Bear stance row), and attitude change towards other stakeholders (Stakeh. stance row) – in the three National Parks.

By plotting items against stakeholder groups (Fig. 10), we can see that primary producers expressed the highest reservation across items, with beekeepers and other residents being the most optimistic. We should underline that across all items, there seems to be an increase of agreement in the last year (2024) for primary sector producers and NECCA employees. This finding may be quite crucial for showcasing the dynamics of participatory processes and their potential for two core stakeholder groups for bear conservation and management.

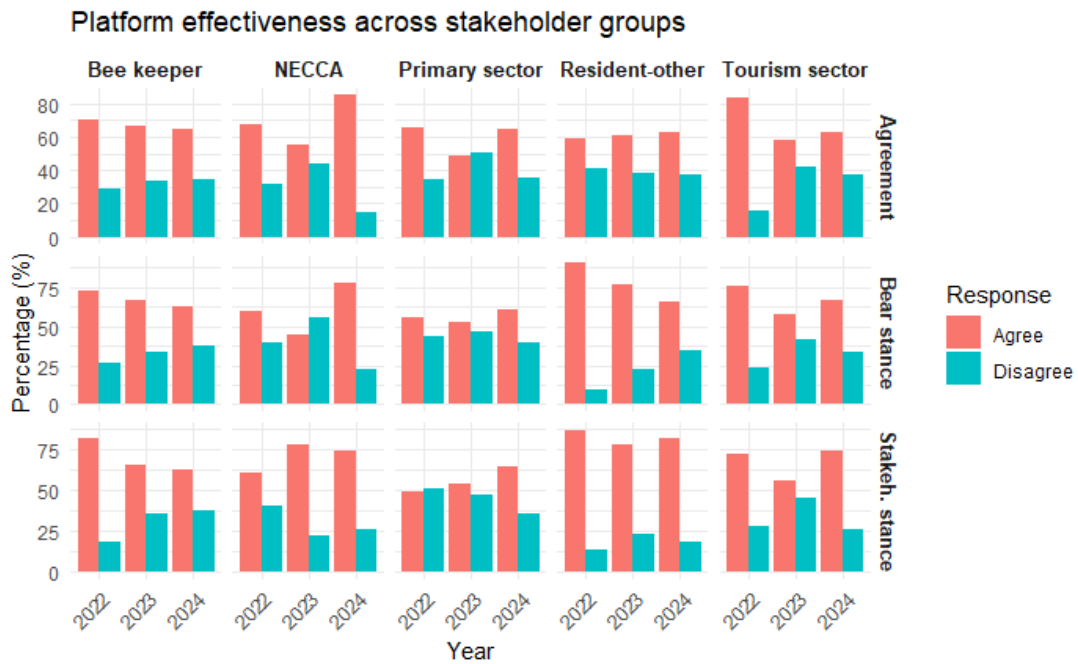


Figure 10. Percentage of "Agree" and "Disagree" responses across three factors – honouring agreements (Agreement row), attitude change towards bears (Bear stance row), and attitude change towards other stakeholders (Stakeh. stance row) – across selected stakeholder groups.

Focused elements of platform effectiveness

The next series of questions try to discern in a more nuanced way to which elements the Platform and participatory approaches might promote their effectiveness - or not. They are Likert-type questions from strongly disagree to strongly agree. We present them first by year across the three NPs, then by NP and year, and finally by stakeholder group and year.

The results (Fig. 11) from the three consecutive years (2022, 2023, and 2024) show notable trends in stakeholder perceptions of platform effectiveness across various dimensions. Positive dimensions, such as "valuable stakeholder knowledge" and "platform impact diffusion," consistently received high agreement levels, with "valuable stakeholder knowledge" increasing from 75% in 2022 to 83% in 2024 and "platform impact diffusion" improving from 70% in 2022 to 73% in 2024. In contrast, agreement with negative dimensions such as "challenging stakeholder collaboration," "challenging stakeholder agreement," "limitations of local efforts," and "core challenges persist" remained moderate to low. For example, "core challenges persist" fluctuated from 34% in 2022 to 36% in 2024, while "limitations of local efforts" showed a trend from 46% in 2022 to 59% in 2024. Overall, perceptions of positive dimensions improved over the years, while agreement with negative dimensions remained relatively stable, indicating a shift toward more optimistic views of participatory processes.

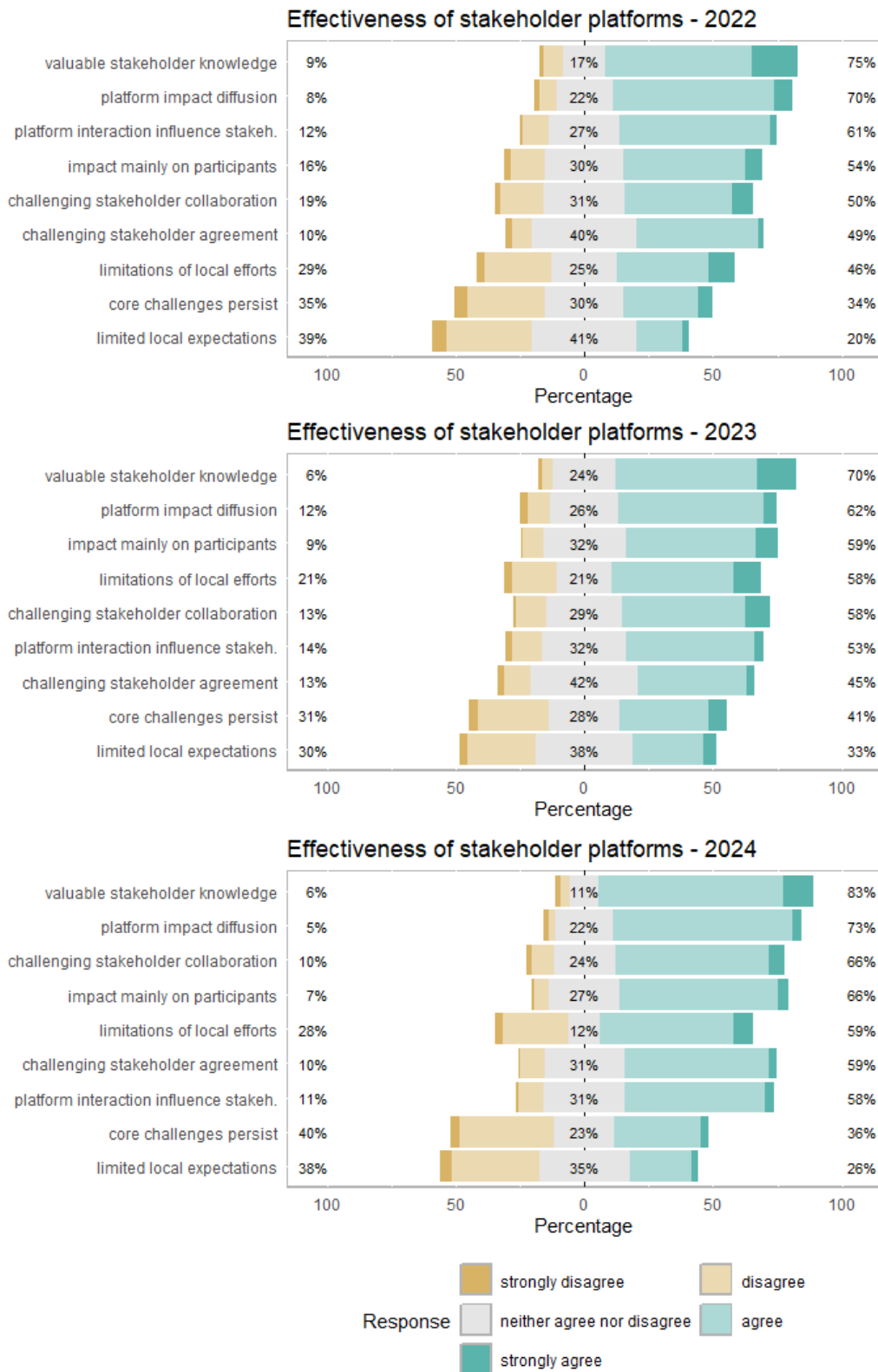


Figure 11. Focused elements of Platform effectiveness.

After disaggregating by NP (Table 9), and conducting chi-square tests per Platform effectiveness element, we can see in more detail how the participatory processes were perceived across in all NPs across the years. In Northern Pindos, respondents appear to have increased their opinion that all stakeholders can contribute to the Platform and participatory processes (significant increase in ‘Valuable stakeholder knowledge’), although that possibly brings challenges (significant increase in ‘Challenging collaboration’). In Prespa NP, there is a significant increase in the belief that stakeholder interactions in the Platform can influence stakeholders, although expectation of change at the local scale may be more limited (‘Limited local expectations’).

Table 9. Focused elements of platform effectiveness across National Parks. Significance stars represent p-values of chi-square tests per row, i.e., change in agreement levels of each effectiveness element between 2022 and 2024 (: $p < 0.05$, **: $p < 0.01$). Numbers represent mean values and SD (in brackets).*

| National Park | Effectiveness element | 2022 (N=302) | 2023 (N=300) | 2024 (N=302) |
|-----------------------|---|-----------------|-----------------|-----------------|
| Northern Pindos | Platform interaction influence stakeholders | 3.47 (0.84) | 3.55 (0.79) | 3.52 (0.73) |
| | Platform impact diffusion | 3.61 (0.78) | 3.69 (0.75) | 3.73 (0.61) |
| | Impact mainly on participants | 3.51 (0.96) | 3.66 (0.83) | 3.71 (0.54) |
| | Limited local expectations | 2.77 (0.84) | 2.82 (0.99) | 2.86 (0.85) |
| | Valuable stakeholder knowledge* | 3.70 (0.96) | 3.98 (0.74) | 3.89 (0.56) |
| | Challenging collaboration** | 2.98 (0.96) | 3.67 (0.63) | 3.75 (0.50) |
| | Challenging agreement | 3.38 (0.83) | 3.39 (0.75) | 3.43 (0.76) |
| Prespa | Limitations of local efforts | 3.06 (1.10) | 3.22 (0.99) | 3.12 (0.95) |
| | Challenging collaboration | 3.42 (0.75) | 3.44 (0.71) | 3.52 (0.62) |
| | Platform impact diffusion | 3.69 (0.82) | 3.48 (0.95) | 3.74 (0.72) |
| | Platform interaction influence stakeholders** | 3.21 (0.90) | 3.72 (0.75) | 3.66 (0.68) |
| | Limited local expectations* | 2.72 (0.97) | 3.10 (0.85) | 2.94 (0.83) |
| | Valuable knowledge | 3.94 (0.75) | 3.84 (0.74) | 3.96 (0.77) |
| | Challenging collaboration | 3.68 (0.84) | 3.85 (0.79) | 3.61 (0.86) |
| Rodopi Mountain Range | Challenging agreement | 3.31 (0.78) | 3.31 (0.74) | 3.51 (0.70) |
| | Limitations of local efforts** | 3.30 (0.96) | 3.75 (0.92) | 3.62 (0.96) |
| | Platform interaction influence stakeholders** | 3.63 (0.71) | 3.21 (0.96) | 3.46 (0.88) |
| | Platform impact diffusion** | 3.71 (0.73) | 3.38 (0.82) | 3.64 (0.69) |
| | Impact mainly on participants** | 3.54 (0.78) | 3.38 (0.74) | 3.49 (0.88) |
| | Limited local expectations** | 2.85 (0.87) | 3.24 (0.92) | 2.77 (1.03) |
| | Valuable stakeholder Knowledge* | 3.81 (0.85) | 3.50 (0.84) | 3.75 (0.81) |
| | Challenging collaboration** | 3.41 (0.85) | 3.07 (0.96) | 3.45 (0.95) |
| Rodopi Mountain Range | Challenging agreement* | 3.47 (0.66) | 3.29 (0.93) | 3.60 (0.73) |
| | Limited local expectations | 3.33 (1.05) | 3.42 (1.02) | 3.29 (1.13) |

In Rodopi Mountain Range NP results show that the Platform had a bigger impact, with positive and negative elements. There is a contradictory trend, with an initial decrease and a subsequent increase, in the belief that stakeholder interactions in the Platform can influence stakeholders, as well as in the belief that Platform results can extend across the NP ('Platform impact diffusion'). The same is valid for perceived challenges in collaboration and agreement between stakeholders ('Challenging collaboration', 'Challenging agreement'). On the positive side, significant positive results include the decrease in the low expectations belief vis-à-vis the Platform ('Limited local expectations'), which corresponds with a decrease in a belief that only Platform participants have something to gain from the Platform ('Impact mainly on participants').

The analysis for stakeholder groups also revealed interesting findings (Table 10). Beekeepers significant changes were found only for 'Challenging collaboration', which increased from 2022 to 2024. Forest Service perceptions showed significant variability in dimensions like 'Platform impact diffusion', which decreased in 2023 before increasing in 2024, and 'Limitations of local efforts', where the mean significantly fluctuated across years. Hunters displayed notable changes for 'Platform interaction influence stakeholders', decreasing to 2.90 in 2024 after peaking at 3.84 in 2023. For the Municipality/Regional authorities, 'Limited local expectations' increased from 2.35 in 2022 to 3.25 in 2024, indicating shifting perceptions. NECCA exhibited significant changes for 'Limited local expectations', decreasing from 2.60 in 2022 to 2.04 in 2024. NGO employees displayed a significant increase in 'Platform interaction influence stakeholders', rising steadily between 2022 and 2024. Primary sector producers' perceptions reflected significant changes in 'Platform interaction influence stakeholders', which increased from 3.12 in 2022 to 3.71 in 2024, and 'Limited local expectations', which rose from 2.80 in 2022 to 3.43 in 2024. Lastly, Tourism Sector and Veterinarian/Scientist groups showed stable trends across most dimensions, with a few significant changes, such as 'Platform interaction influence stakeholders' for veterinarians, which decreased from 3.76 in 2022 to 3.16 in 2024.

NGO Employees and the Primary Sector consistently showed increased agreement on 'Platform interaction influence stakeholders' with NGOs rising from 3.06 in 2022 to 3.82 in 2024 and the 'Primary Sector' increasing from 3.12 to 3.71. Beekeepers and Veterinarians/Scientists acknowledged increasing challenges ('Challenging collaboration'). NECCA participants displayed growing optimism, with a decrease in 'Limited local expectations' from 2.60 in 2022 to 2.04 in 2024, diverging from the more pessimistic trends seen in other groups like the Municipality/Regional Authority.

Table 10. Focused elements of platform effectiveness across for all stakeholder groups. Significance stars represent p-values of chi-square tests per row, i.e., change in agreement levels of each effectiveness element between 2022 and 2022 (: $p < 0.05$, **: $p < 0.01$). Numbers represent mean values and SD (in brackets). Only significant changes are shown.*

| Stakeholder group | Effectiveness element | 2022 (N=302) | 2023 (N=300) | 2024 (N=302) |
|---|--|-----------------|-----------------|-----------------|
| Beekeepers | Challenging collaboration** | 3.01 (1.05) | 3.49 (0.78) | 3.50 (1.04) |
| Forest service | Platform impact diffusion* | 3.92 (0.70) | 3.17 (0.41) | 3.62 (0.62) |
| | Limited local expectations* | 2.68 (0.85) | 3.67 (1.03) | 2.81 (0.66) |
| | Challenging collaboration* | 3.72 (0.68) | 3.00 (0.63) | 3.38 (0.50) |
| | Limitations of local efforts*** | 2.72 (1.02) | 4.67 (0.52) | 2.44 (0.63) |
| Hunters | Platform interaction influence stakeholders* | 3.69 (0.84) | 3.84 (0.62) | 2.90 (1.29) |
| | Limitations of local efforts* | 2.77 (0.91) | 3.56 (0.96) | 3.20 (1.03) |
| Municipality / regional authority employees | Limited local expectations*** | 2.35 (0.56) | 2.85 (0.99) | 3.25 (0.73) |
| | Challenging agreement* | 3.69 (0.62) | 3.50 (0.83) | 3.92 (0.28) |
| NECCA | Platform impact diffusion* | 3.80 (0.50) | 2.22 (1.20) | 3.63 (0.88) |
| | Limited local expectations* | 2.60 (1.00) | 2.56 (0.88) | 2.04 (0.65) |
| | Challenging agreement* | 3.84 (0.62) | 3.22 (0.44) | 3.78 (0.64) |
| NGO employees | Platform interaction influence stakeholders** | 3.06 (0.80) | 3.67 (0.77) | 3.82 (0.40) |
| Primary sector | Platform interaction influence stakeholders** | 3.12 (0.90) | 3.60 (0.83) | 3.71 (0.60) |
| | Limited local expectations*** | 2.80 (0.93) | 3.64 (0.87) | 3.43 (0.74) |
| | Limitations of local efforts* | 3.83 (0.89) | 3.36 (1.09) | 3.79 (0.79) |
| Tourism sector | Platform interaction influence stakeholders*** | 3.08 (0.81) | 3.63 (0.82) | 3.96 (0.44) |
| Veterinarians / scientists | Impact mainly on participants* | 3.76 (0.56) | 3.08 (0.95) | 3.16 (0.93) |
| | Challenging collaboration* | 3.18 (0.88) | 3.77 (0.93) | 3.76 (0.72) |
| | Limitations of local efforts* | 2.82 (1.07) | 3.77 (0.83) | 3.54 (0.96) |

Platform results and weaknesses

Perceived Platforms results show consistent patterns across the three NPs (Fig. 12). Knowledge related results such as ‘Advancing knowledge’, ‘Information gathering’ are the most dominant ones across the NPs. Also, results that promote collaboration, mainly ‘Stakeholder cooperation’, and practical ones, such as the promotion of prevention methods (‘Prevention promotion’) are also highly rated. The patterns for stakeholders reflect the results for NPs, and show significant similarity between beekeepers, primary producers and residents. Respondents working for NECCA appear to diverge, who seem to value the Platform also for the ‘Information credibility’ it can offer.

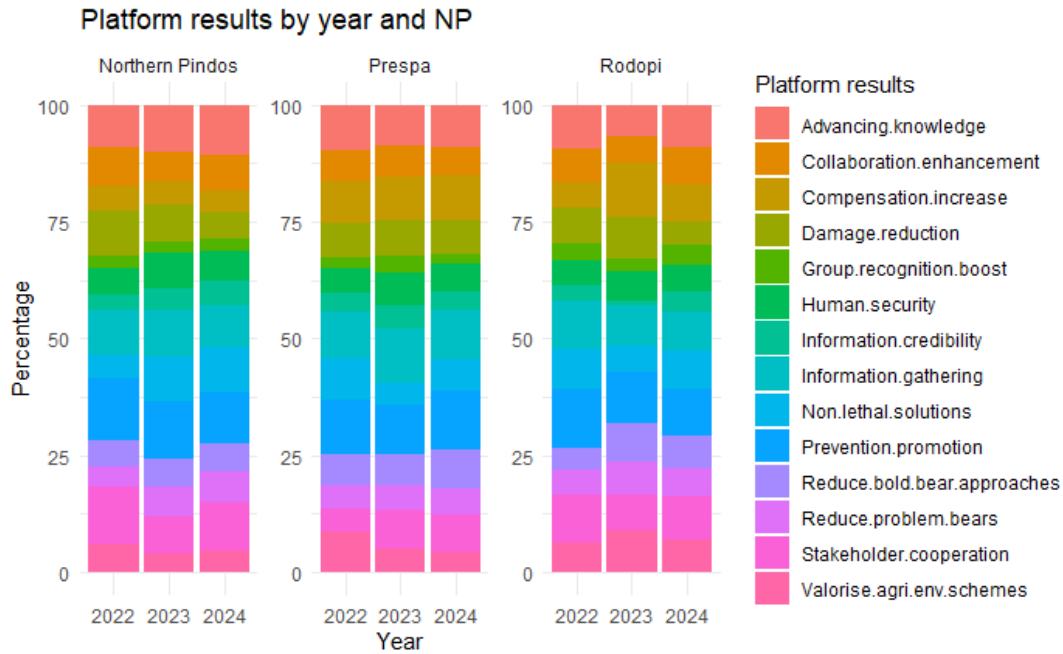


Figure 12. Main perceived Platform results by National Park across all years.

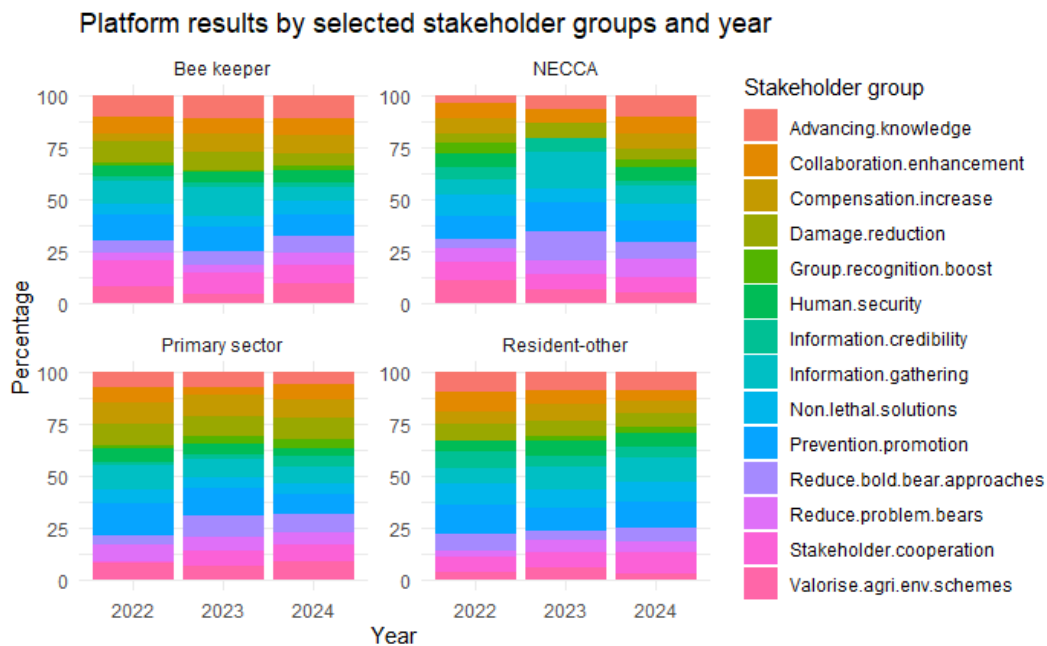


Figure 13. Main perceived Platform results by selected stakeholder groups across all years.

Perceived Platforms weaknesses (Fig. 14) show less consistent patterns across the three NPs compared to the results. ‘Lack of practical action’ and ‘Land of common action’ are highlighted across the NPs, as are ‘Trust deficits’, which appear more prominent in Rodopi Mountain Range NP. A core issue related to stakeholders is that some of them are perceived to be reluctant to negotiate (‘Negotiation reluctance’). For Rodopi Mountain Range NP and Prespa NP another issue that is more prominent is ‘Problem neglect’ indicating a perception that core problems are not felt to be addressed.

Moving into the stakeholder disaggregation, we can see different patterns in perceived weaknesses Again, ‘Lack of common action’ and ‘Lack of practical action’ seem to be

something that is perceived as an important weakness by all stakeholders, with little temporal fluctuation. Beekeepers seem to identify a ‘Trust deficit’ issue as more prominent compared to other stakeholders. All selected stakeholders with the exception of NECCA seem to perceive that the Platform does not reduce conflict; indeed, for some the Platform may be introducing conflict into the area (the Primary Sector and Resident / other). Facilitation problems are identified by the Primary Sector as a weakness, although with diminishing salience over the years.

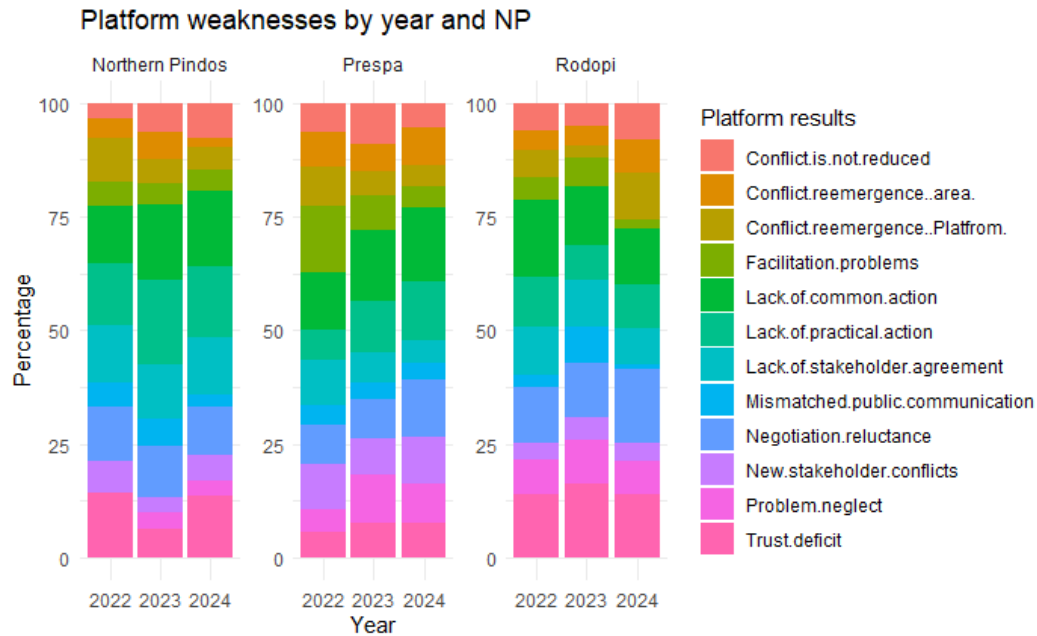


Figure 14. Main perceived Platform weaknesses by NP across all years.

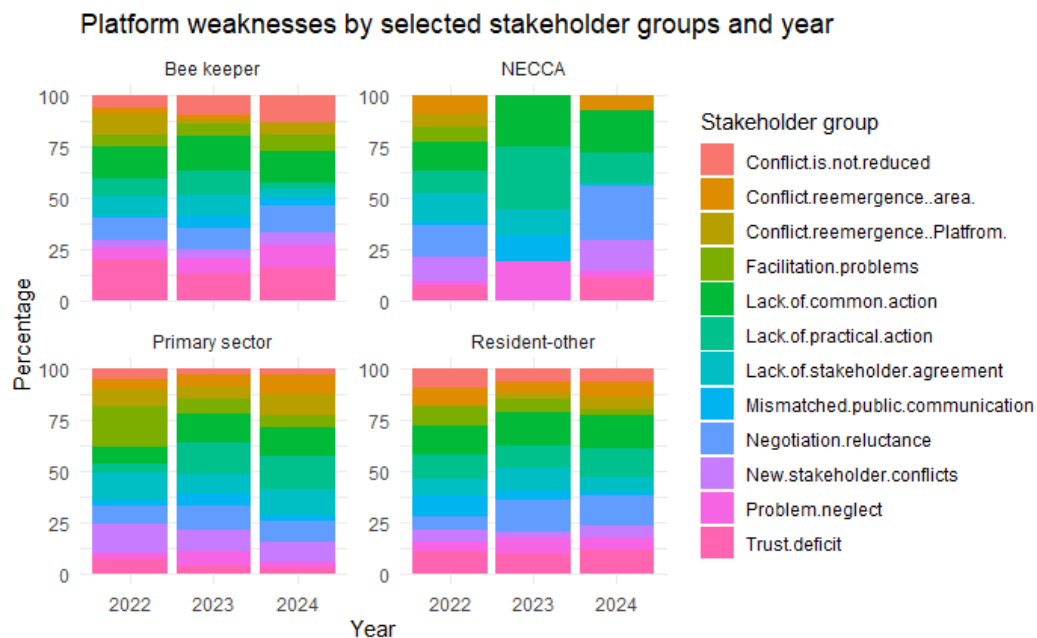


Figure 15. Main perceived Platform weaknesses by selected stakeholder groups across all years.

Chapter 5: Conclusion

The study aimed to evaluate the participatory processes within the LIFE ARCPROM project, focusing on Action D5, which investigates stakeholder perceptions and interactions concerning human-bear coexistence. Using a questionnaire-based approach tailored to participants involved in stakeholder meetings across three Greek National Parks, the research collected and analyzed data from 904 respondents over three years. The methodology effectively captured diverse perspectives, emphasizing groups directly involved in bear management and conservation efforts, and provided valuable insights into the dynamics of human-carnivore coexistence and stakeholder interactions.

The findings revealed nuanced perceptions of human-bear interactions and inter-stakeholder dynamics. While most respondents perceived bear populations as stable or increasing, significant differences emerged across stakeholder groups. For instance, primary producers and beekeepers viewed bear numbers as increasing, reflecting their closer interaction with wildlife. Stakeholder cooperation and trust varied considerably, with groups like primary producers, NECCA and ENGOs consistently ranking high in collaboration and trust. However, conflict among stakeholders, particularly in Rodopi Mountain Range and Northern Pindos, seemed to have increased over time, underscoring ongoing challenges in fostering cohesive partnerships. The opposite appeared to be the case in Prespa, revealing the potential of participatory actions.

The participatory platforms showed mixed results in stakeholder attitudes. While honouring agreements remained stable, shifts in bear attitudes and attitudes towards other groups. Notably, Prespa NP demonstrated higher levels of perceived cooperation and platform effectiveness compared to other regions. The platforms successfully facilitated knowledge exchange and stakeholder engagement, particularly for groups like NECCA and NGOs. However, persistent challenges, including trust deficits and limited action at the local level, highlighted areas requiring further improvement.

The analysis of platform effectiveness revealed significant patterns in stakeholder perceptions, highlighting both strengths and persistent challenges. Positive dimensions, such as "valuable stakeholder knowledge" and "platform impact diffusion," consistently received high levels of agreement, with noticeable improvements over the years. These elements underline the platforms' ability to foster knowledge exchange and influence stakeholders positively. However, challenges like "collaboration difficulties" and "core challenges persist" remained prevalent, particularly in Rodopi Mountain Range NP, where perceived limitations in local action and trust deficits were more pronounced. The findings align with broader participatory process literature, emphasizing that while platforms can enhance stakeholder interactions and promote collective action, their success relies on addressing systemic barriers, facilitating equitable participation, and managing stakeholder expectations effectively (Hovardas, 2020).

Different stakeholder groups exhibited varying levels of engagement and perceived platform effectiveness. Groups with direct involvement in bear conservation and management, such as NECCA and primary producers, recognized the platforms' influence but also highlighted challenges like negotiation difficulties and trust deficits. Indeed, primary sector producers and residents expressed concerns about the platforms exacerbating conflicts, while NECCA participants demonstrated growing optimism, reflecting the platforms' potential to align with their conservation goals. These findings resonate with broader literature emphasizing the importance of tailoring participatory approaches to stakeholder-specific needs (see Hovardas, 2020). Future initiatives for participatory processes and facilitation of such processes should put more emphasis in harnessing conflict as a resource, since human-bear or human-human

conflict is to be expected to emerge again and again due to many different reasons. In this regard, conflict resolution techniques need to accompany facilitation methods for co-creating solutions.

The participatory processes achieved significant progress in promoting dialogue and understanding among stakeholders, aligning with the literature on adaptive management in human-carnivore conflicts. However, success was uneven across regions and groups. Persistent barriers, such as limited local expectations and reluctance to negotiate, underline the need for sustained efforts to address structural challenges and power imbalances. While the platforms provided valuable knowledge and facilitated cooperation, their long-term success depends on addressing core weaknesses, promoting inclusive participation, and integrating practical actions into conflict resolution strategies.

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Annex 1. Questionnaire used in the three Greek National Parks



Dear Madam or Sir,

The Platform for Coexistence between People and Bears is made up of representatives of different stakeholder groups (Management Authority of the Park; Forest Service; Regional and Local Authorities; local producers and their associations; hunters and hunting associations; environmental non-governmental organizations; locals engaged in tourism). All these stakeholder members have expressed their intention to work collaboratively to decrease human-bear conflicts and promote human-bear coexistence.

Analogous Platforms of that kind have been established and operate in several European locations with large carnivores (bear, wolf, lynx, wolverine)³. Despite the problems that are observed in all these regions, stakeholder collaboration showcases that there are ways for addressing these problems and in some cases, for resolving them.

The present questionnaire will be used for collecting data from four National Parks where Platforms for Coexistence between People and Bears have been established and operate within the frame of the project LIFE ARCPROM (Majella National Park, Prespa National Park, Northern Pindos National Park, Rodopi Mountain-Range National Park). Questionnaire data will be statistically analysed to inform stakeholder interaction and collaboration in the Platform, to compare developments between Platforms in National Parks, and to improve the operation of the Platform.

For any information concerning the questionnaire or the project LIFE ARCPROM you can contact Anna Crimella, Human Dimensions Expert at the Majella National Park (crimella@eliante.it) or Tasos

³ European Platform on Coexistence between People and Large Carnivores: http://ec.europa.eu/environment/nature/conservation/species/carnivores/coexistence_platform.htm, Regional Platforms on People and Large Carnivores: http://ec.europa.eu/environment/nature/conservation/species/carnivores/regional_platforms.htm

Hovardas, Human Dimensions Expert of CALLISTO-Wildlife and Nature Conservation Society, who is the Coordinator of Human Dimension Actions of LIFE ARCPROM (hovardas@ucy.ac.cy).

Thank you very much for your cooperation and we are at your disposal for any information regarding the questionnaire of the project LIFE ARCPROM.

Sincerely,

Tasos Hovardas

Human Dimensions Expert, Coordinator of Human Dimension Actions of LIFE ARCPROM, LIFE ARCPROM, LIFE18 NAT/GR/000768 (hovardas@ucy.ac.cy)

Informed consent

At this point we would like to inform you in detail for questionnaire data collection, analysis and management so that you provide your informed consent. Please read carefully all the following points:

1. The completion of the questionnaire is voluntary and anonymous.
2. Questionnaire data will be used for evaluating stakeholder interaction and collaboration in the Platform, for improving Platform operation, and for comparing developments between Platforms in the National Parks.
3. The Coordinator of Actions C1 (Stakeholder consultation and involvement) and D5 (Follow-up surveys on the perception and behaviour of the stakeholder groups) of LIFE ARCPROM, Tasos Hovardas, will be responsible for data management. Access to these data will be provided to the partners of LIFE ARCPROM, only, and only for pursuing the objectives of the project (data analysis for the deliverables of the project and for scientific publications).
4. You have the right to withdraw your participation by sending an email message with your request to the email of the Coordinator of Actions C1 (Stakeholder consultation and involvement) and D5 (Follow-up surveys on the perception and behaviour of the stakeholder groups) of LIFE ARCPROM, Tasos Hovardas: hovardas@ucy.ac.cy.
5. The results of data analysis, but not the raw data of the questionnaire, will be presented in the deliverables of Action D5 (Follow-up surveys on the perception and behaviour of the stakeholder groups) of the project LIFE ARCPROM and to any scientific publication which will be submitted based on these deliverables. In any case, the above commitment for respondent anonymity will be strictly applied, since the presentation of results will focus on general trends and comparisons and not to responses of individual participants.

Please tick this box to confirm that you have read and understood:

Questionnaire

**1 Which answer best characterises your experiences regarding bears in the past year?
(Please select only one response in each column)**

- | | |
|---|--------------------------|
| Conflict increased | <input type="checkbox"/> |
| Conflict remained more or less the same | <input type="checkbox"/> |
| Conflict decreased | <input type="checkbox"/> |

Which answer best characterizes stakeholder interaction for bear issues? (Please select only one response in each column)

2 In the region, overall (Please select only one response in each column)

- | | |
|----------------------------|--------------------------|
| Conflict predominates | <input type="checkbox"/> |
| Negotiation predominates | <input type="checkbox"/> |
| Collaboration predominates | <input type="checkbox"/> |

3 In the Platform (Please select only one response in each column)

- | | |
|----------------------------|--------------------------|
| Conflict predominates | <input type="checkbox"/> |
| Negotiation predominates | <input type="checkbox"/> |
| Collaboration predominates | <input type="checkbox"/> |

Which of the following stakeholder groups can you best work with when it comes to issues concerning bears? (You can select more than one group)

- | | |
|---|--------------------------|
| 4 Farmers | <input type="checkbox"/> |
| 5 Stock breeders | <input type="checkbox"/> |
| 6 Beekeepers | <input type="checkbox"/> |
| 7 Foresters | <input type="checkbox"/> |
| 8 Protected Area Management Authority | <input type="checkbox"/> |
| 9 Municipalities | <input type="checkbox"/> |
| 10 Prefecture | <input type="checkbox"/> |
| 11 Hunters | <input type="checkbox"/> |
| 12 Veterinarians | <input type="checkbox"/> |
| 13 Scientists | <input type="checkbox"/> |
| 14 Environmental Non-Governmental Organizations | <input type="checkbox"/> |
| 15 Developmental Companies | <input type="checkbox"/> |
| 16 Chambers of Commerce | <input type="checkbox"/> |
| 17 Entrepreneurs/employees in Tourism | <input type="checkbox"/> |
| 18 Visitors/Tourists in the region | <input type="checkbox"/> |
| 19 Local/Regional Media | <input type="checkbox"/> |

**Which of the following stakeholder groups do you trust most on issues concerning bears?
(You can select more than one group)**

- 20 Farmers
- 21 Stock breeders
- 22 Beekeepers
- 23 Foresters
- 24 Protected Area Management Authority
- 25 Municipalities
- 26 Prefecture
- 27 Hunters
- 28 Veterinarians
- 29 Scientists
- 30 Environmental Non-Governmental Organizations
- 31 Developmental Companies
- 32 Chambers of Commerce
- 33 Entrepreneurs/employees in Tourism
- 34 Visitors/Tourists in the region
- 35 Local/Regional Media

| |
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| |

36 Do you agree or disagree with the following statement:

Most stakeholders will respect the agreements reached in the Platform

| | |
|-------|----------|
| Agree | Disagree |
|-------|----------|

37 Independently of your above response, how many members of the participating stakeholders in the Platform do you believe will AGREE with the above statement?

| |
|---------------------|
| Percentage (0-100%) |
|---------------------|

38 Do you agree or disagree with the following statement:

Participants in the meetings of the Platform will change their attitudes towards bears

| | |
|-------|----------|
| Agree | Disagree |
|-------|----------|

39 Independently of your above response, how many members of the participating stakeholders in the Platform do you believe will AGREE with the above statement?

| |
|---------------------|
| Percentage (0-100%) |
|---------------------|

40 Do you agree or disagree with the following statement:

Participants in the meetings of the Platform will change their attitudes towards other stakeholder groups

| | |
|-------|----------|
| Agree | Disagree |
|-------|----------|

41 Independently of your above response, how many members of the participating stakeholders in the Platform do you believe will AGREE with the above statement?

| |
|---------------------|
| Percentage (0-100%) |
|---------------------|

Do you agree or disagree with the following statements? (Please select only one response for each statement)

| | Strongly agree | Agree | Neither agree nor disagree | Disagree | Strongly disagree |
|--|----------------|-------|----------------------------|----------|-------------------|
| 42 Stakeholder interaction in the Platform can influence stakeholder interaction in the region, overall | | | | | |
| 43 Developments in the Platform can gradually diffuse within stakeholder groups | | | | | |
| 44 Developments in the Platform will have an effect mainly on participants in the meetings of the Platform | | | | | |
| 45 Local residents in the region do not expect much from the Platform | | | | | |
| 46 All stakeholder groups can contribute valuable knowledge to the Platform | | | | | |
| 47 Some stakeholder groups may not have the necessary knowledge base to contribute in the Platform | | | | | |
| 48 Stakeholder collaboration to address problems with bears will not be easily achieved in the region | | | | | |
| 49 There are good chances for agreement between stakeholder groups in the Platform | | | | | |
| 50 The participation of stakeholders in the Platform will not change their attitude towards bears | | | | | |
| 51 The participation of stakeholders in the Platform will not change their attitude towards other stakeholders | | | | | |
| 52 There are some problems concerning large carnivores, which cannot be controlled by stakeholders at the local/regional level | | | | | |
| 53 The main challenges with large carnivores can be effectively addressed by stakeholders at the local/regional level | | | | | |

Which of the following aspects do you expect to be the most important outcomes of the Platform? (You can choose more than one response)

- | | |
|--|--------------------------|
| 54 Collect information about bears | <input type="checkbox"/> |
| 55 Increase scientific knowledge base on bears | <input type="checkbox"/> |
| 56 Decrease damage caused by bears | <input type="checkbox"/> |
| 57 Promote damage prevention measures | <input type="checkbox"/> |
| 58 Improve compensation of damage caused by bears | <input type="checkbox"/> |
| 59 Improve measures available in the Rural Development Programme | <input type="checkbox"/> |
| 60 Decrease frequency of bear approaches to human infrastructure | <input type="checkbox"/> |
| 61 Address issues related to human safety | <input type="checkbox"/> |
| 62 Address issues with problem bears | <input type="checkbox"/> |
| 63 Find solutions that exclude lethal interventions | <input type="checkbox"/> |
| 64 Own stakeholder group recognition | <input type="checkbox"/> |
| 65 Improve stakeholder collaboration | <input type="checkbox"/> |
| 66 Improve collaboration with the local/regional authorities | <input type="checkbox"/> |
| 67 Improve accurate communication by the media | <input type="checkbox"/> |

Which of the following aspects do you expect to be the most important weaknesses of the Platform? (You can choose more than one response)

- | | |
|--|--------------------------|
| 68 Moderators do not establish a constructive interaction among stakeholders | <input type="checkbox"/> |
| 69 Agreement between stakeholder groups is not reached | <input type="checkbox"/> |
| 70 Concerted stakeholder action at the local level is not achieved | <input type="checkbox"/> |
| 71 Stakeholder interaction does not progress from discussions to concrete action | <input type="checkbox"/> |
| 72 Some stakeholder groups are not willing to negotiate | <input type="checkbox"/> |
| 73 Conflict between stakeholder groups does not decrease | <input type="checkbox"/> |
| 74 Stakeholder tension resurfaces during the meetings of the Platform | <input type="checkbox"/> |
| 75 Stakeholder tension resurfaces in the region, overall | <input type="checkbox"/> |
| 76 New developments in the region refuel tension among stakeholder groups | <input type="checkbox"/> |
| 77 Stakeholder groups cannot trust each other | <input type="checkbox"/> |
| 78 Communication through public channels does not reflect agreements reached | <input type="checkbox"/> |
| 79 The Platform does not address major problems with bears | <input type="checkbox"/> |

What are the main communication methods used by your own stakeholder group for bear issues? (You can choose more than one response)

- | | |
|--------------------------------------|--------------------------|
| 80 Website | <input type="checkbox"/> |
| 81 Newsletter | <input type="checkbox"/> |
| 82 Social media | <input type="checkbox"/> |
| 83 E-mail | <input type="checkbox"/> |
| 84 Face to face stakeholder meetings | <input type="checkbox"/> |
| 85 Local press | <input type="checkbox"/> |
| 86 National press | <input type="checkbox"/> |

87 In which National Park do you take part in Platform meetings/events (e.g., workshops)?

| | |
|-------------------------------------|--------------------------|
| Prespa National Park | <input type="checkbox"/> |
| Northern Pindos National Park | <input type="checkbox"/> |
| Rodopi Mountain-Range National Park | <input type="checkbox"/> |
| Majella National Park | <input type="checkbox"/> |

88 Frequency of attending Platform meetings/events during the last 12 months:

| | |
|-----------------------------|--------------------------|
| 1 meeting/event | <input type="checkbox"/> |
| 2 meetings/events | <input type="checkbox"/> |
| 3 meetings/events | <input type="checkbox"/> |
| 4 meetings/events | <input type="checkbox"/> |
| 5 meetings/events | <input type="checkbox"/> |
| 6 meetings/events | <input type="checkbox"/> |
| More than 6 meetings/events | <input type="checkbox"/> |

89 Please state your own stakeholder group, i.e., the one under which you take part in the Platform (Please select one response)

| | |
|---|--------------------------|
| Farmer | <input type="checkbox"/> |
| Stock breeder | <input type="checkbox"/> |
| Beekeeper | <input type="checkbox"/> |
| Forester | <input type="checkbox"/> |
| Protected Area Management Authority | <input type="checkbox"/> |
| Municipality | <input type="checkbox"/> |
| Prefecture | <input type="checkbox"/> |
| Hunter | <input type="checkbox"/> |
| Veterinarian | <input type="checkbox"/> |
| Scientist | <input type="checkbox"/> |
| Environmental Non-Governmental Organization | <input type="checkbox"/> |
| Developmental Company | <input type="checkbox"/> |
| Chamber of Commerce | <input type="checkbox"/> |
| Entrepreneur/employee in Tourism | <input type="checkbox"/> |

90 Age

| | |
|-------------|--------------------------|
| ≤30 years | <input type="checkbox"/> |
| 31-40 years | <input type="checkbox"/> |
| 41-50 years | <input type="checkbox"/> |
| 51-60 years | <input type="checkbox"/> |
| >60 years | <input type="checkbox"/> |

91 Gender

| | |
|--------|--------------------------|
| Male | <input type="checkbox"/> |
| Female | <input type="checkbox"/> |

92 Education

- Primary
- Secondary
- Technical school
- University
- Postgraduate studies after university degree

93 Income

- Higher than the country average
- In the range of the country average
- Lower than the country average

94 Please provide in the space given further comments or remarks concerning the questionnaire, the Platform or the project LIFE ARCPROM



LIFE ARCPROM



ΑΝΘΡΩΠΟΣ
UOMO
HUMAN

ΑΡΚΟΥΔΑ
ORSO
BEAR

LIFE18 NAT/GR/000768

Improving human-bear coexistence in 4 National Parks of South Europe

Action D5 Follow-up surveys on the perception and behavior of the stakeholder groups

Questionnaire data analysed- Maiella National Park



November 2024

Authors

Anna Crimella, Giovanna Di Domenico, Antonio Antonucci.

Maiella National Park.

Edited by Anna Crimella

Suggested citation

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SUMMARY

Action D5 assesses stakeholder perceptions and behavior changes during platform operation. Questionnaires were administered in Italy and Greece using the same methods but adjustments were required due to the different timing of Action C1 and to the differences in the social contexts. Specifically, a cohort longitudinal approach could not be implemented in Italy as the general structure of the questionnaire was delivered in 2022 while the first year of platform operation in Italy was 2021. For this reason, a beginning-end (2022-2024) comparison was the strategy implemented in MNP. Differences in the social context led MNP staff to reduce the original 100-question survey used in Greece to a 23-questions survey to accomplish stakeholders' willingness to complete only short surveys (i.e. time required: 10-15 minutes maximum). The adapted questionnaire, taking 6–10 minutes, retained the same seven topics of the questionnaire drafted for Greece and was proposed to people as a Google Form accessible through a link or a QR code. Both strategies were used to reach stakeholders directly involved in the platform, the associates of their organizations as well as the general public.

A total of 207 questionnaires were collected and the results overall show a good level of acceptance of the presence of the Apennine brown bear in the area. The level of interest regarding the topic of coexistence with the bear is also high, while knowledge about its behaviour and ethology can be improved. In this regard, from the comparison between the two years of investigation, an improvement in knowledge is evident. The Park is the most accredited source of information for stakeholders, with increasing values in the responses in the different years of the survey. The working methods within the Stakeholder Platform were appreciated by the participants, who also appreciated the outcomes obtained in the latest survey. The sample was very varied in both years of questionnaire collection, however in both cases there was a slight female majority and a majority of questionnaire participants aged between 30 and 60.

In this document we report the questionnaire administrated and the analysis of feedbacks received. The comparison between 2022 and 2024 and an overall evaluation of Action D5 are reported in the Final report of the action.

ΠΕΡΙΛΗΨΗ

Η Δράση Δ5 αξιολογεί τις αντιλήψεις των ενδιαφερομένων και τις αλλαγές συμπεριφοράς κατά τη λειτουργία της πλατφόρμας. Τα ερωτηματολόγια χορηγήθηκαν στην Ιταλία και την Ελλάδα χρησιμοποιώντας τις ίδιες μεθόδους, αλλά απαιτήθηκαν προσαρμογές λόγω της διαφορετικής χρονικής στιγμής της Δράσης Γ1 και των διαφορών στα κοινωνικά πλαίσια. Συγκεκριμένα, μια διαχρονική προσέγγιση κοόρτης δεν μπορούσε να εφαρμοστεί στην Ιταλία, καθώς η γενική δομή του ερωτηματολογίου παραδόθηκε το 2022, ενώ το πρώτο έτος λειτουργίας της πλατφόρμας στην Ιταλία ήταν το 2021. Για το λόγο αυτό, έγινε σύγκριση αρχής έως τέλους (2022-2024), η στρατηγική που εφαρμόζεται στο MNP. Οι διαφορές στο κοινωνικό πλαίσιο οδήγησαν το προσωπικό του MNP να μειώσει την αρχική έρευνα 100 ερωτήσεων που χρησιμοποιήθηκε στην Ελλάδα σε μια έρευνα 23 ερωτήσεων για την επίτευξη της προθυμίας των ενδιαφερόμενων μερών να ολοκληρώσουν μόνο σύντομες έρευνες (δηλαδή απαιτούμενος χρόνος: 10-15 λεπτά το πολύ). Το προσαρμοσμένο ερωτηματολόγιο, διάρκειας 6-10 λεπτών, διατήρησε τα ίδια επτά θέματα του ερωτηματολογίου που συντάχθηκε για την Ελλάδα και προτάθηκε στους χρήστες ως Φόρμα Google προσβάσιμη μέσω συνδέσμου ή κωδικού QR. Και οι δύο στρατηγικές χρησιμοποιήθηκαν για να προσεγγίσουν τα ενδιαφερόμενα μέρη που εμπλέκονται άμεσα στην πλατφόρμα, τους συνεργάτες των οργανισμών τους καθώς και το ευρύ κοινό.

Συνολικά συλλέχθηκαν 207 ερωτηματολόγια και τα αποτελέσματα δείχνουν συνολικά ένα καλό επίπεδο αποδοχής της παρουσίας της καφέ αρκούδας των Απεννίνων στην περιοχή. Το επίπεδο ενδιαφέροντος για το θέμα της συνύπαρξης με την αρκούδα είναι επίσης υψηλό, ενώ μπορεί να βελτιωθεί η γνώση για τη συμπεριφορά και την ηθική της. Από αυτή την άποψη, από τη σύγκριση μεταξύ των δύο ετών έρευνας, είναι εμφανής μια βελτίωση στη γνώση. Το Πάρκο είναι η πιο διαπιστευμένη πηγή πληροφόρησης για τα ενδιαφερόμενα μέρη, με αυξανόμενες αξίες στις απαντήσεις κατά τα διάφορα έτη της έρευνας. Οι μέθοδοι εργασίας εντός της Πλατφόρμας Ενδιαφερομένων Μερών εκτιμήθηκαν από τους συμμετέχοντες, οι οποίοι επίσης εκτίμησαν τα αποτελέσματα που προέκυψαν στην τελευταία έρευνα. Το δείγμα ήταν πολύ διαφορετικό και στα δύο έτη συλλογής του ερωτηματολογίου, ωστόσο και στις δύο περιπτώσεις υπήρχε μια ελαφρά γυναικεία πλειοψηφία και η πλειοψηφία των συμμετεχόντων στο ερωτηματολόγιο ηλικίας μεταξύ 30 και 60 ετών.

Σε αυτό το έγγραφο αναφέρουμε το ερωτηματολόγιο που χορηγήθηκε και την ανάλυση των ανατροφοδοτήσεων που ελήφθησαν. Η σύγκριση μεταξύ 2022 και 2024 και μια συνολική αξιολόγηση της Δράσης D5 αναφέρονται στην τελική έκθεση της δράσης.

SOMMARIO

L'Azione D5 valuta le percezioni degli stakeholder e i cambiamenti nel loro comportamento durante il periodo dei lavori della Piattaforma. I questionari sono stati somministrati in Italia e Grecia utilizzando gli stessi metodi ma sono stati necessari aggiustamenti a causa della diversa tempistica dell'Azione C1 e delle differenze nei contesti sociali. Nello specifico, in Italia non è stato possibile implementare un approccio longitudinale su tutto il periodo di lavoro della piattaforma, in quanto la struttura generale del questionario è stata resa disponibile nel 2022 mentre il primo anno di operatività della piattaforma in Italia è stato il 2021. Per questo motivo, la strategia formulata per il Parco Nazionale della Maiella ha previsto un confronto inizio-fine lavori (2022-2024). Le differenze nel contesto sociale hanno portato lo staff del MNP a ridurre l'originale sondaggio di circa 100 domande utilizzato in Grecia a un sondaggio di 23 domande per soddisfare la volontà delle parti interessate di completare solo sondaggi brevi (ovvero tempo richiesto: 10-15 minuti al massimo). Il questionario adattato, della durata di 6-10 minuti, ha mantenuto gli stessi sette argomenti del questionario redatto per la Grecia ed è stato proposto alle persone come modulo Google accessibile tramite un collegamento o un codice QR. Entrambe le strategie sono state utilizzate per raggiungere le parti interessate direttamente coinvolte nella piattaforma, gli associati delle loro organizzazioni e il pubblico in generale.

Sono stati raccolti in tutto 207 questionari ed i risultati evidenziano complessivamente un buon livello di accettazione della presenza dell'orso bruno marsicano sul territorio. Elevato è anche il livello di interesse riguardo al tema della convivenza con l'orso, mentre si può migliorare la conoscenza del suo comportamento e della sua etologia. A questo proposito, dal confronto tra i due anni di indagine, risulta evidente un miglioramento delle conoscenze fra gli stakeholder coinvolti. Il Parco rappresenta la fonte di informazione più accreditata per gli stakeholder, con valori crescenti nelle risposte nei diversi anni di indagine. Le modalità di lavoro all'interno della Piattaforma degli Stakeholder sono state apprezzate dai partecipanti, che, come emerge dall'ultimo anno di indagine, hanno apprezzato anche i risultati ottenuti nei 3 anni di lavoro. Il campione è risultato molto eterogeneo in entrambi gli anni di raccolta del questionario, tuttavia in entrambi i casi si è riscontrata una leggera maggioranza femminile e una maggioranza di partecipanti al questionario di età compresa tra i 30 e i 60 anni.

In questo documento riportiamo il questionario somministrato e l'analisi dei feedback ricevuti. Il confronto tra il 2022 e il 2024 e una valutazione complessiva dell'Azione D5 sono riportati nel Final Report dell'azione.

Introduction

Action D5 is aimed at administering questionnaires to stakeholders to assess their perception and behaviours and to evaluate if and how they changed during the years of platform operation. Actions C1 and D5 were developed in Italy and Greece with the same methods and objectives. However, the different social context and the different timing of Action C1 (see below) determined the need for MNP staff to adjust *i)* the strategy for questionnaire administration and *ii)* the length of the questionnaire.

In Italy the first platform was established in June 2021 so the years of platform operation are 2021, 2022 and 2023. However, due to Covid restrictions, in Greece the C1 platforms were established with a delay and this created a delay also in the delivery of the questionnaire whose general structure was available only in 2022. The questionnaire administration pattern foreseen in the proposal (one administration for each year of platform operation) could thus not be implemented in MNP and needed to be adjusted: a comparison between the end and the beginning rather than a cohort longitudinal approach was thus chosen. Results from the feedbacks collected in 2022 will be compared with the ones coming from questionnaires administrated in 2024 after the last year of platform operation.

The general structure of the questionnaire to be administrated was set by the coordinating beneficiary and includes the following topics: (1) Perceived human-bear interaction and perceived stakeholder interaction; (2) perceived outcomes of platform operation; (3) working relations and trust between stakeholder groups; (4) consensus estimates; (5) perceived strengths and weaknesses of platform operation; (6) communication methods used by stakeholder groups; and (7) sample characteristics. The declination of these topics was the object of the second adjustment needed in MNP as the 100-questions survey developed for Greece was not suitable for the social context of MNP. The institution and operation of the stakeholder platform realized in the frame of Action C1 is the very first stakeholder platform established in the Maiella National Park and developed with the implementation of participatory methods. Stakeholders involved in the platform were thus not familiar with the methods applied so that a special effort was required to ease people into them. In the frame of Action C1 this meant that a special effort needed to be done to convince people to participate to the meetings but things got a bit more complicated for Action D5. In fact, if people are generally willing to report their opinions and participate to decision making processes, they have less willingness in using their time to compile questionnaires. The experience gained so far in the Maiella National Park is that people are generally not willing to spend their time in participating to surveys and the degree of participation is inversely proportional with the time necessary to fill in the questionnaire: the shorter the time required the greater the number of persons that will respond. As soon as they are asked to fill-in a questionnaire, people first reaction is to ask "How many questions are there?" and if there are too many they decline immediately the invitation without even caring of the actual time needed to answer them. The estimated time to compile the 100-questions survey was 60-90 minutes, an amount that largely overcomes the estimated threshold of 10-15 minutes maximum. For this reason, the questionnaire received by the coordinating beneficiary was adapted by the human dimension expert of MNP. The adaptation process consisted mainly in the reduction of the number of questions in order to make the fill-in time closer to the threshold established. The reduction of the questions number, however, did not affect the content and, specifically, the general structure is based on exactly the same 7 topics above-reported and addressed in the questionnaire distributed in Greece.

The adapted version of the questionnaire includes 23 questions (see §Questionnaire administrated) which correspond to asking the participants of Platform and Workshops for a commitment between 6 and 10 minutes to fill it in. The only modification in term of "content" concerns the use of the word "conflict". While it was widely used in the version disseminated in Greece, its use in the adaptation for Italy was reduced to the minimum possible level. Rather than using the word "conflict", which in Italian has a negative meaning, we preferred to use more neutral words, in order to avoid giving ourselves the impression that relations between stakeholders are more critical than they actually are, thus guiding the responses of people filling in the questionnaire and the SHs Platform outputs.

These (inevitable) adjustments did not affect the implementation of Action D5 nor the achievements of its goals. Feedbacks coming from questionnaires were used to compare data and assess Action C1 role in

changing stakeholder perception as well as individuate any possible things to be adjusted during the After-LIFE period to improve (if needed) the stakeholder platform work organization.

In this document we report the questionnaire administrated and the analysis of feedbacks received. The comparison between 2022 and 2024 and an overall evaluation of Action D5 are reported in the Final report of the action.

Questionnaire administrated

Overall, 23 questions were formulated, with a specific section dedicated to the stakeholders participating in the Platform established as part of the C1.2 action for the consultation and involvement of stakeholders.

The questionnaire was administrated in Italian to allow a wider audience to participate in the survey. A translation in English is provided below.

QUESTIONNAIRE FOR MONITORING STAKEHOLDERS PERCEPTIONS AND BEHAVIOR

The following questionnaire was developed as part of the European Project Life ARCPROM - Welcome back gentle bear- to investigate the perceptions and thoughts of those who live and work in the area interested by the presence of the Apennine brown bear. Similarly, questionnaires are distributed in the other 3 National Parks participating to the project and located in Greece: Prespa National Park, Northern Pindos National Park and Rodopi Mountain Range National Park.

The information collected will be used to integrate and improve the work of the platform for human-bear coexistence set up as part of the project, in which stakeholders from the Maiella area participate.

The questionnaire is anonymous, and it will take about 6-10 minutes to complete.

Thank you for your contribution!

The LIFE ARCPROM team of the Maiella National Park

Section 1. Sample characteristics

1. In which province do you live?

- Chieti
- L'Aquila
- Pescara
- Teramo
- Outside the Region

2. Is your home or business located within a protected area?

- Yes, MNP
- Yes, another National Park
- Yes, in a minor protected area
- No

3. How old are you?

- <30 years
- 31-40 years
- 41-50 years
- 51-60 years
- 61-70 years
- > 71 years

4. Do you want to tell us your gender?

- Male
- Female
- Rather not answer

5. What is your main occupation?

- Breeder / shepherd
- Beekeeper
- Truffle / mycological expert
- Managing body of MNP or another protected area
- Municipality or Province employee or administrator
- Region employee or administrator
- Public veterinarian
- Private veterinarian
- Surveillance Corps (Police or Carabinieri)
- Environmental association
- Hiking Association
- Association with a socio-educational purpose
- Tour operator
- Hunter
- Professional Association
- Student
- Researcher
- Expert
- Retired
- Other

Section 2. Perceived human-bear interaction

6. How do you judge your relationship with the presence of the Apennine brown bear?

- Its presence is absolutely indifferent to me
- I am happy to live in an area where the bear also lives
- His presence is a source of stress for me and interferes with my activity

7. In general, in your region, how do people experience the presence of the bear?

- Quite well, the bear is generally accepted
- So-so, there are several situations in which the presence of the bear is problematic
- Quite badly, in general the bear is a problem and its presence generates conflict

8. Do you think you know the bear's behavior?

Not at all → I'm an expert (*likert scale*)

9. What do you think are the main factors that favor the onset of problems between humans and the Apennine brown bear in your region? (maximum 3 answers)

- The presence of the bear near the roads
- The high speed maintained by motorists
- There are too many bears
- The lack of information on the nature of the bear and its way of behaving
- Lack of attention to food sources left unattended (bins, abandoned waste, ...)
- The high presence of courtyard animals inside villages (e.g. chicken coops)
- The reduction of natural habitats available to the bear
- Many people assume wrong behaviors in the presence of the bear
- Compensation arrangements for bear damage are complicated and time-consuming
- Poor ability to listen to problems by the Bodies in charge
- The tendency to consider the bear as a tourist attraction
- Lack of coordination between the Bodies that deal with land management

10. Have you ever attended a meeting on the Apennine brown bear where the technicians illustrated data on its diffusion / behavior of the species / how to behave in its presence?

- Never
- Once
- Several times
- I am a technician

11. If you answered "Never" to the previous question, why?

- No meetings have ever been organized in the area where I live
- I don't care about the topic
- I didn't have time, but the topic interests me

Section 3. Communication methods used by stakeholder groups

12. What are the sources of information that you trust the most regarding the Apennine brown bear? (maximum 3 answers)

- Parks and protected areas
- Control bodies (forest police, provincial police, park rangers)
- Region, Provinces, Municipalities
- Associations of breeders / farmers / beekeepers / truffle seeker
- Local media (press / radio / TV / internet)
- National media (press / radio / TV / internet)
- Social media (Facebook / Instagram / Twitter)
- Veterinarians
- Research bodies and universities
- Environmental associations and organizations
- Hunters
- Individual breeders / farmers / beekeepers / truffle hunters
- Other

Section 4. Perceived strengths and weaknesses of Platform operation and consensus estimate

13. Do you think that meetings organized in the area (such as the one organized on 2-3 of April in Sulmona and San Valentino) can improve the relationship between people and the Apennine brown bear?

Not at all → Definitely yes (*likert scale*)

14. Do you think that the collaboration between different subjects (organizations / communities / bodies in charge) can be useful to improve the coexistence between man and bear?

Not at all, there are already persons in charge → Definitely yes, everyone's commitment is needed (*likert scale*)

15. Do you participate directly in the work of the Apennine brown bear-human coexistence platform within the Life-ARCROM project?

- Yes
- No
- I have been contacted, but have never participated

16. If you did not participate despite being contacted, why?

- I don't care about the topic
- I don't think these kinds of tools are useful
- I have no time
- I had difficulty in identifying someone who could participate within my organization

17. How do you judge the climate inside the platform?

- Everyone participates constructively
- Sometimes differences of opinion and perspective generate quarrels and difficulties in understanding
- You can't work, the climate is too tense

18. How do you evaluate the working method of the Platform?

- Good, the presence of a facilitator helps to achieve the objectives of the meetings
- Can be improved: sometimes I have the feeling of not being able to fully express my point of view
- Not good, every time I went away unhappy

19. Do you think that participating in the Platform can help to identify shared solutions for the improvement of human-bear coexistence?

Not at all → Definitely yes (*likert scale*)

20. Which of the following results would you like to have achieved with the work of the Platform? (maximum 3 answers)

- To improve the participants' knowledge of the Apennine brown bear
- To improve the participants' knowledge on bear damage prevention measures
- Understand damage compensation mechanisms
- Make other organizations aware of some situations that should be resolved
- Helping to identify and propose new solutions that make it possible to improve human-bear coexistence
- Establish collaborations with other subjects in the area, aimed at improving the level of human-bear coexistence
- Understand how other organizations work in the area in terms of human-bear coexistence
- Help improve the perception of the Apennine brown bear by those who live and enjoy our region

Section 4. SHs interaction and working relations

21. Which organizations do you think should participate in the work of the platform in order to achieve the expected results?

- Associations of Farmers / Breeders
- Beekeepers' associations
- Associations of truffles / mycological experts
- Management bodies of protected areas
- Public administrators: Municipalities
- Public administrators: Provinces
- Public administrators: Region
- Veterinary ASL
- Surveillance bodies (Police or Carabinieri)
- Waste management bodies
- Environmental associations
- Hiking associations
- Associations with socio-educational purposes
- Tour operators
- Associations of Hunters
- Other

22. If you said "other", who?

23. Would your organization be willing to sign a commitment to carry out human-bear coexistence actions on the territory?

- Yes, with the institutions (Park management bodies, local administrations)
- Yes, both with institutions and with other organizations participating in the platform
- Yes, only with other organizations participating in the platform
- No

24. Can we contact you again at the end of the project, to have you fill out the questionnaire again and evaluate any changes in the answers?

- Yes
- No

25. if so, please leave us your e-mail address (it will remain in the Park archives and will not be used for any other purpose):

Thank you!

Collection and results in 2022

The questionnaire was administrated as a Google Form and was accessible through a link or through the scanning of a QR code. The first method was used for stakeholders contacted via e-mail (e.g. participants to the platform) while the second method was used during the workshops developed in the frame of Action C1.2 (Picture 1).



Picture 1. Desk used during one of the workshops implemented in the frame of Action C1.2. The red arrow points the QR code used to make people access the questionnaire form.

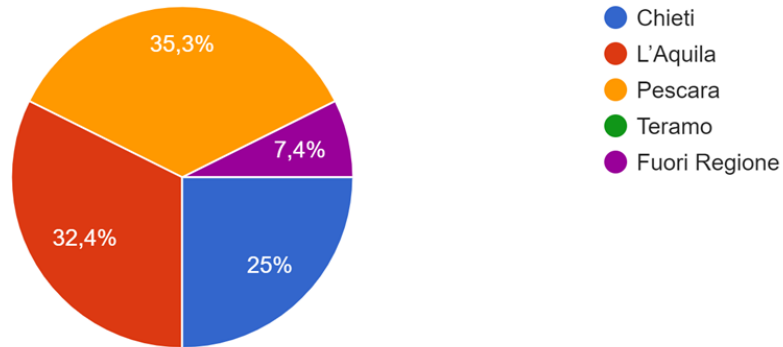
The targets were thus stakeholders directly involved in action C1 (the ones participating to the platform and the associates of their organizations) as well as the general public contacted during the workshops opened to the community.

Overall, in the first year of the investigation, 70 questionnaires were collected. Even though 30 questionnaires less than the number expected in the proposal (100) were collected, the gathering of 70 feedbacks has to be considered a huge success given the general low willingness of people to fill-in questionnaires. It is important to underline that this highly satisfactory result was only possible thanks to the adaptation of the questionnaire to MNP social context and to the huge work done by MNP staff to facilitate the work through the production of a friendly-user form.

The feedbacks received have been analyzed and summarized in graphs that are reported here below (translated from Italian).

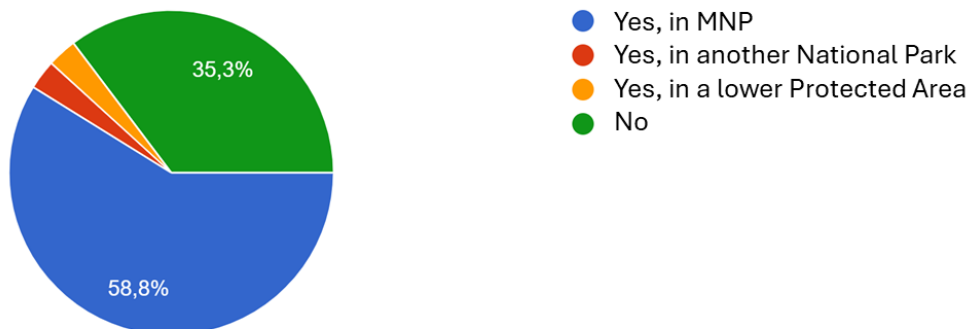
1. In wich Province do you live?

68 risposte



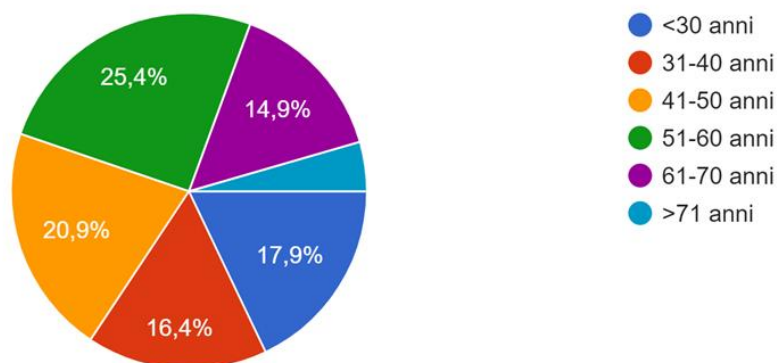
2. Does your house or your activity stand inside a Protected Area?

68 risposte



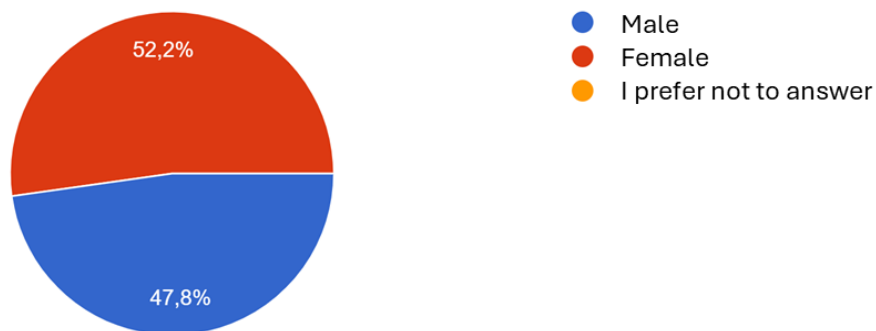
3. How old are you?

67 risposte



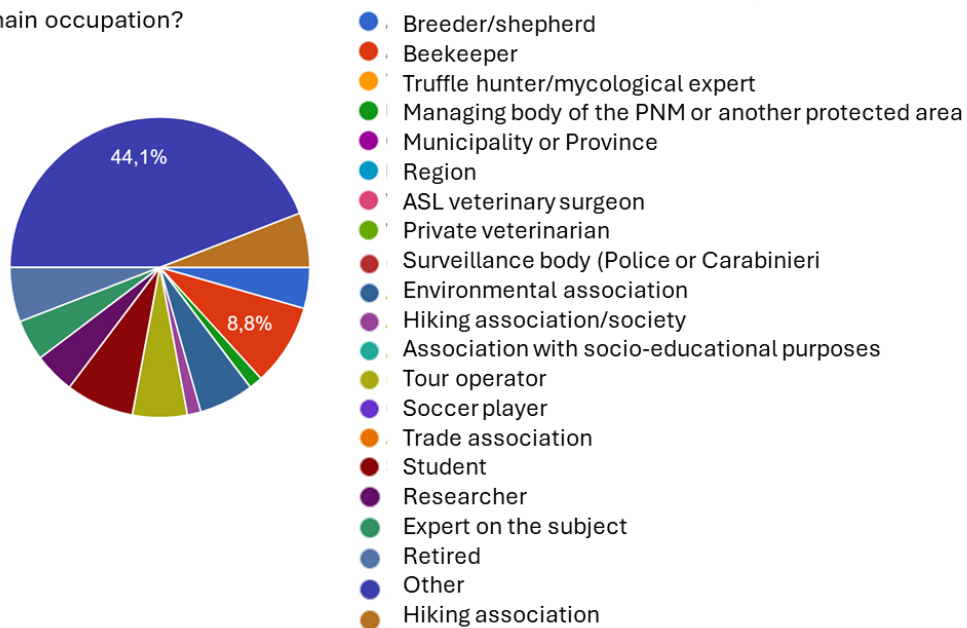
4. Do you want to tell us your gender?

67 risposte



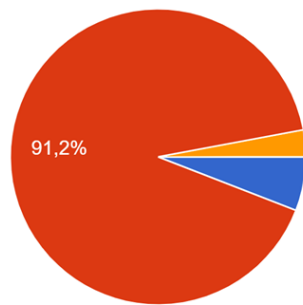
5. What is your main occupation?

68 risposte



6. How do you rate your relationship with the presence of the Apennine brown bear?

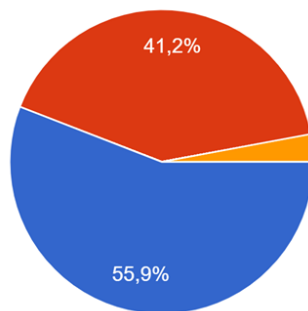
68 risposte



- His presence is absolutely indifferent to me
- I'm happy to live in an area where the bear also lives
- His presence for me is a source of stress and interferes with my activity

7. In general, in your region, how do people experience the presence of bears?

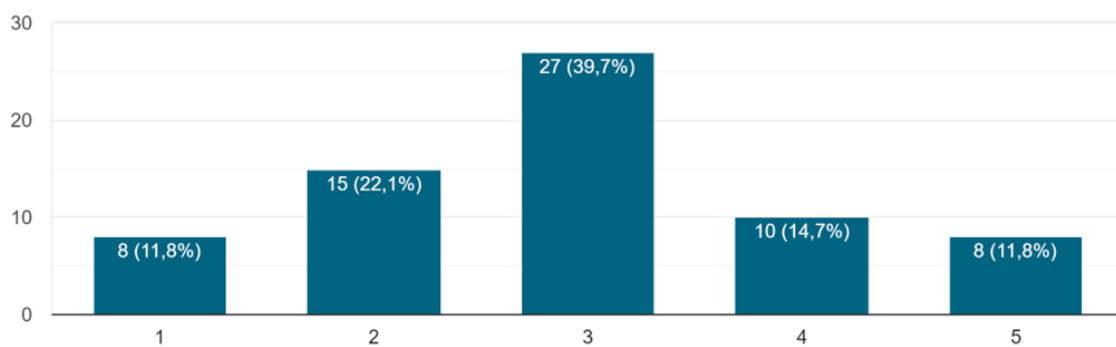
68 risposte



- Pretty good, the bear is generally accepted
- So and so, there are situations in which the presence of the bear is problematic
- Pretty bad, in general the bear is a problem and its presence generates conflict

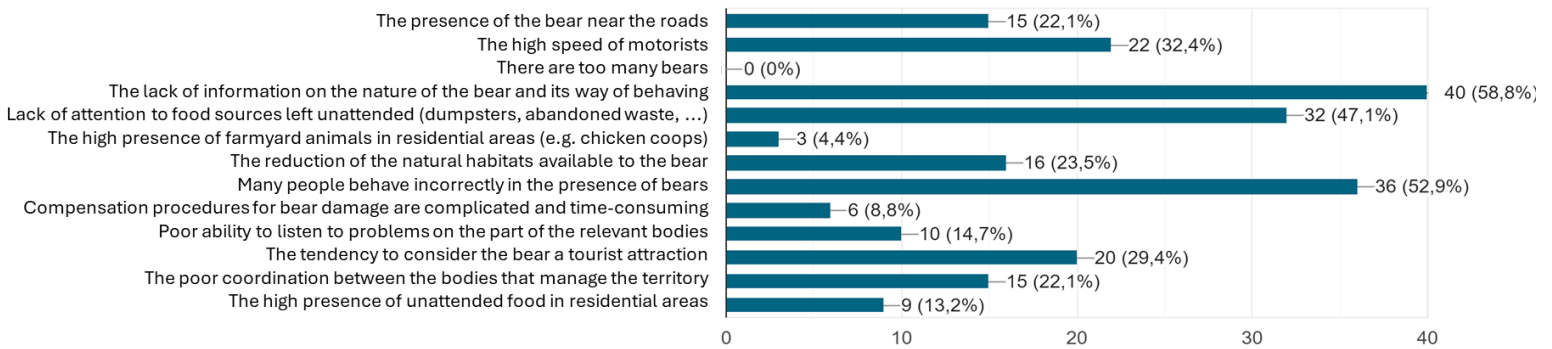
8. I Do you think you know bear behavior?

68 risposte



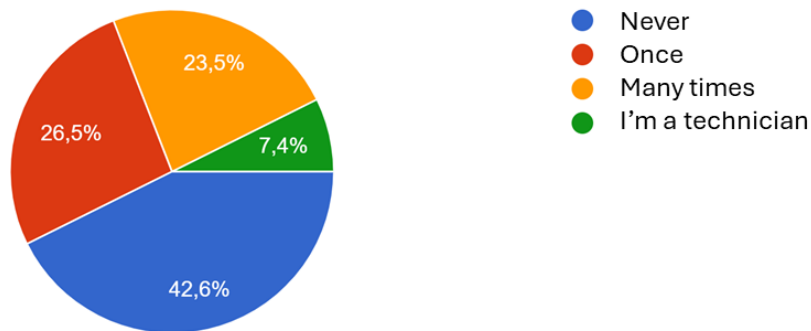
9. What do you think are the main factors that favor the emergence of problems between humans and the Apennine brown bear in your region? (maximum 3 answers)

68 risposte



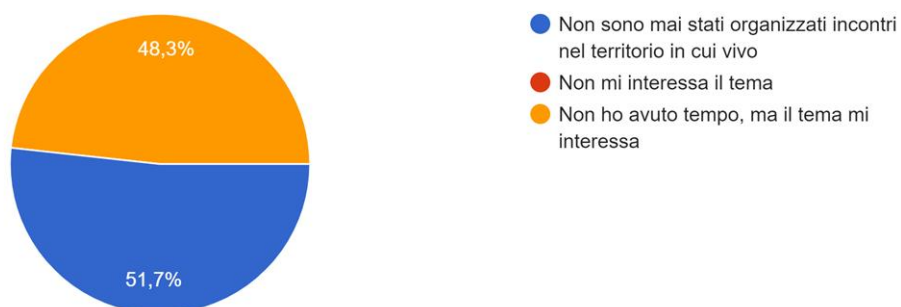
10. Have you ever attended a meeting on the Apennine brown bear in which the technicians illustrated data on its diffusion / behavior of the species / how to behave in its presence?

68 risposte



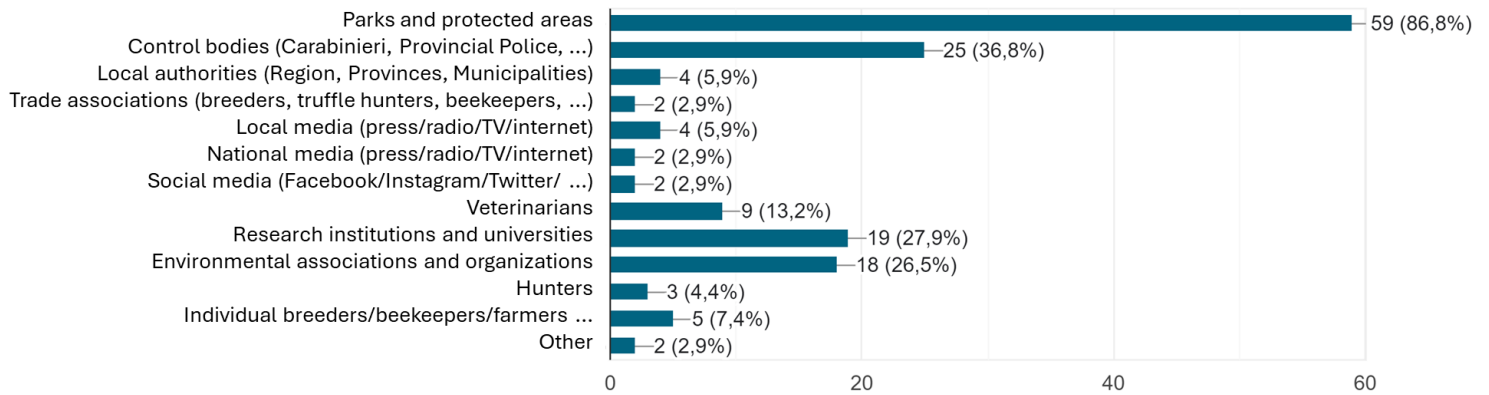
11. If you answered Never, why?

29 risposte



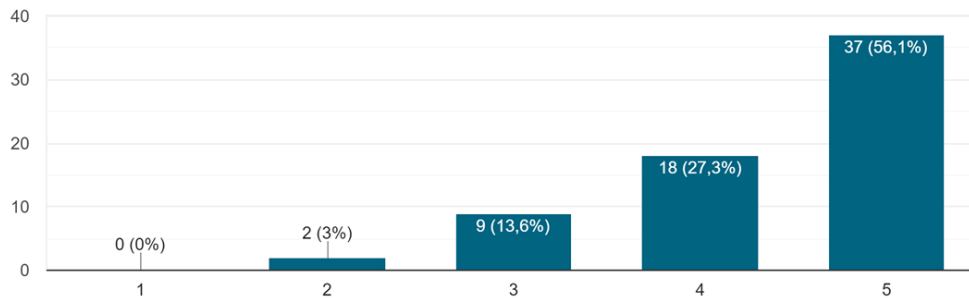
12. What sources of information do you trust most when it comes to the Apennine brown bear? (maximum 3 answers)

68 risposte



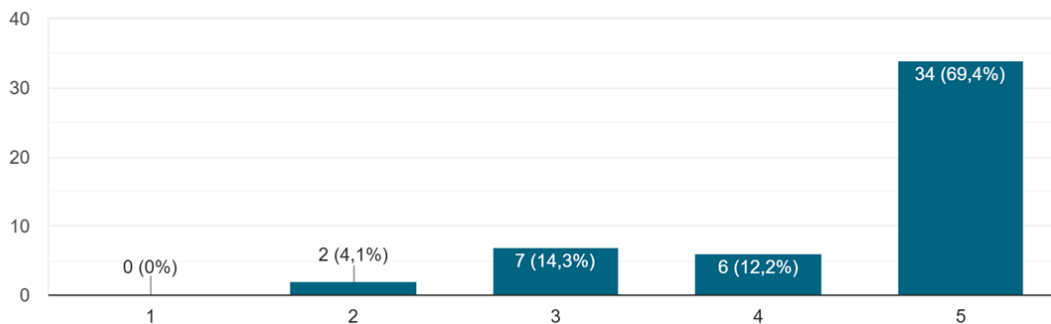
13. Do you think that moments of discussion organized on the territory (like the one organized on 2-3 April in Sulmona, San Valentino, Pescocostanzo, Palena) can improve the relationship between people and the Apennine brown bear?

66 risposte



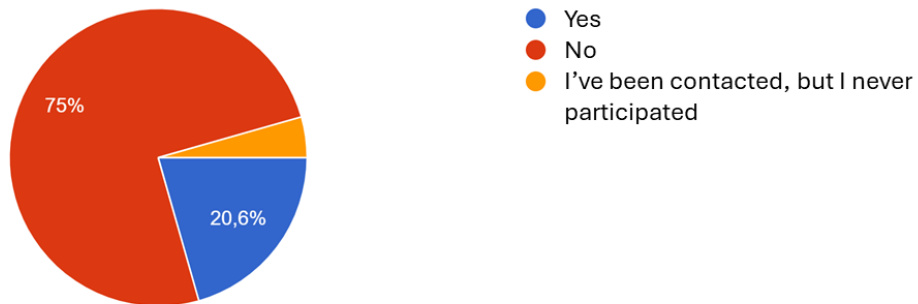
14. Do you think that collaboration between different subjects (organisations/communities/institutions) can be useful for improving human-bear coexistence?

49 risposte



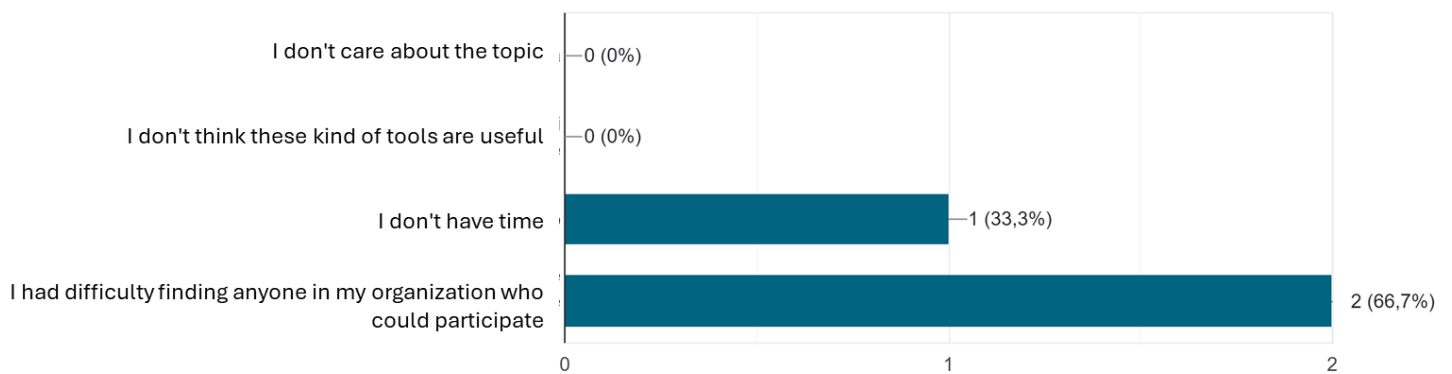
15. Do you participate directly in the work of the Platform for human-Apennine brown bear coexistence as part of the Life-ARCPROM project?

68 risposte



16. If you have never participated, despite having been contacted, why?

3 risposte



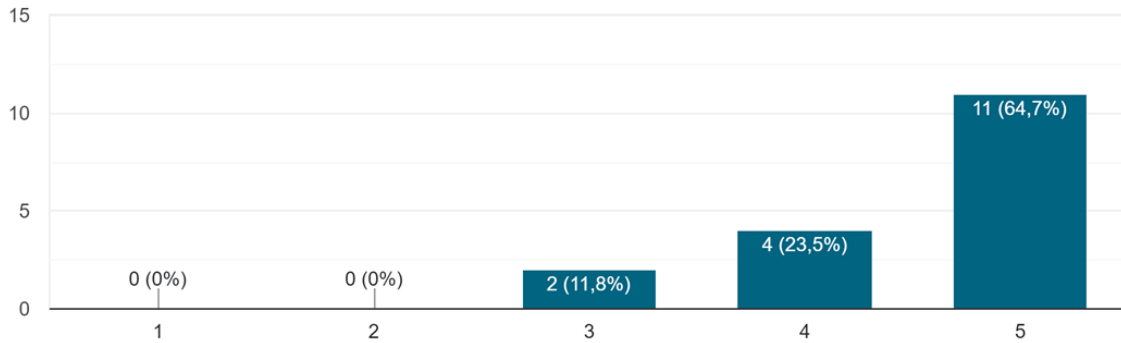
17. How do you rate the climate within the platform?

17 risposte



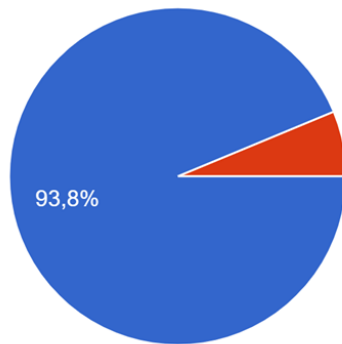
19. Do you think that participating in the Platform can help in identify shared solutions for improving human-bear coexistence?

17 risposte



18. How do you evaluate the Platform's working method?

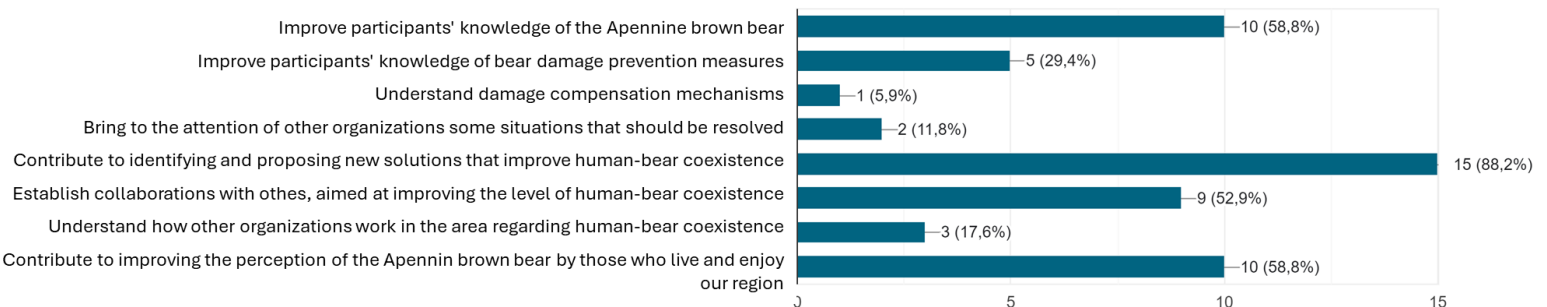
16 risposte



- Good, the presence of a facilitator helps you achieve your goals meetings
- Can be improved: sometimes I have the feeling of not being able to fully express my point of view
- Not good, I left every time dissatisfied

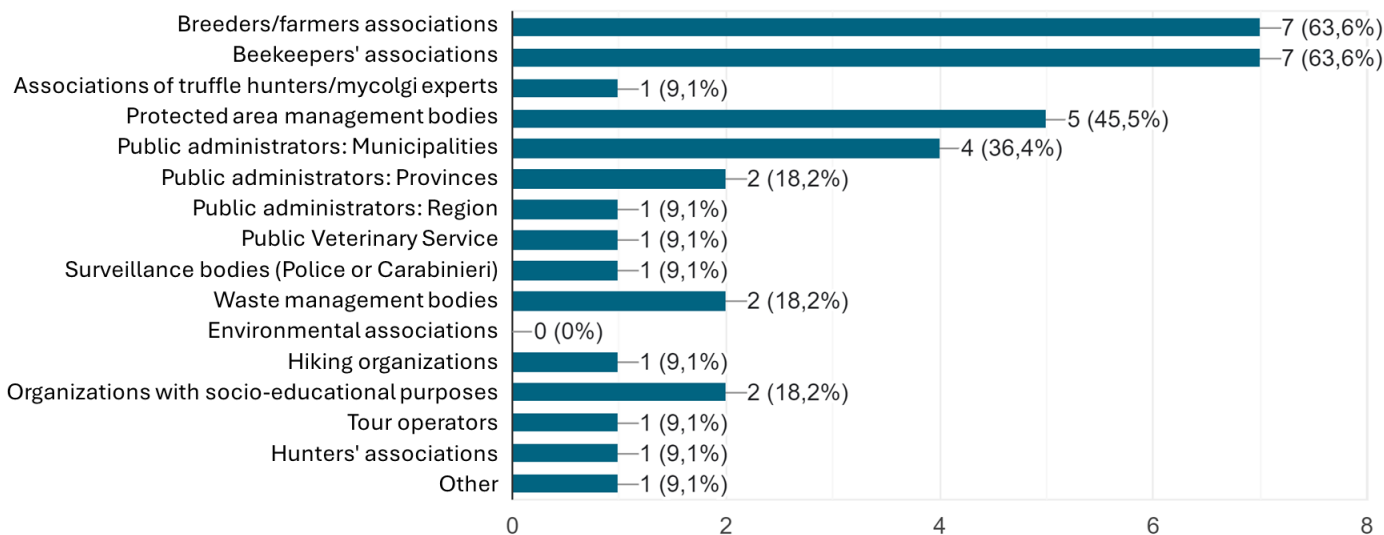
20. Which of the following results would you like to see achieved with the Platform's work? (maximum 3 answers)

17 risposte



21. Which organizations do you think should primarily participate in the platform's work in order to achieve the expected results? (maximum 3 answers)

11 risposte



22. If you answered Other, who?

All organizations should be involved with specific projects

23. Would your organization be willing to sign an agreement for the implementation of human-bear coexistence actions in the area?

10 risposte



Overall, it is possible to note the absence of a significant conflict on the topic of coexistence with the bear, which indeed is very well tolerated. There is also substantial appreciation for the activities carried out within the Life ARCPROM (Platform and Workshop on the territory).

The Maiella National Park is recognized in the area as a reliable interlocutor, especially with regards to the truthfulness of the information communicated.

What emerges instead is the need for more information on the distribution and behavior of the bear.

In the Final Report of Action D5 changes in perceptions will be explored through the comparison with the collection of questionnaires planned in the coming years.

Collection and results in 2024

In 2024 collection methods remained the same of 2022: the compilation of the questionnaire was once again proposed to stakeholders directly involved in the platform (and the associates of their organizations) and the local community. A Google Form accessible through link and QR code was again used but it was not possible to collect feedbacks during the workshop as this task was closed in 2023 (last workshop implemented in November 2023). In 2024 to reach the general public various moments of exchange and discussion organized as part of the Life ARCPROM were suitable and, additionally, we decided to use the social media and, specifically, an *ad-hoc* Facebook post was published (Figure 1).

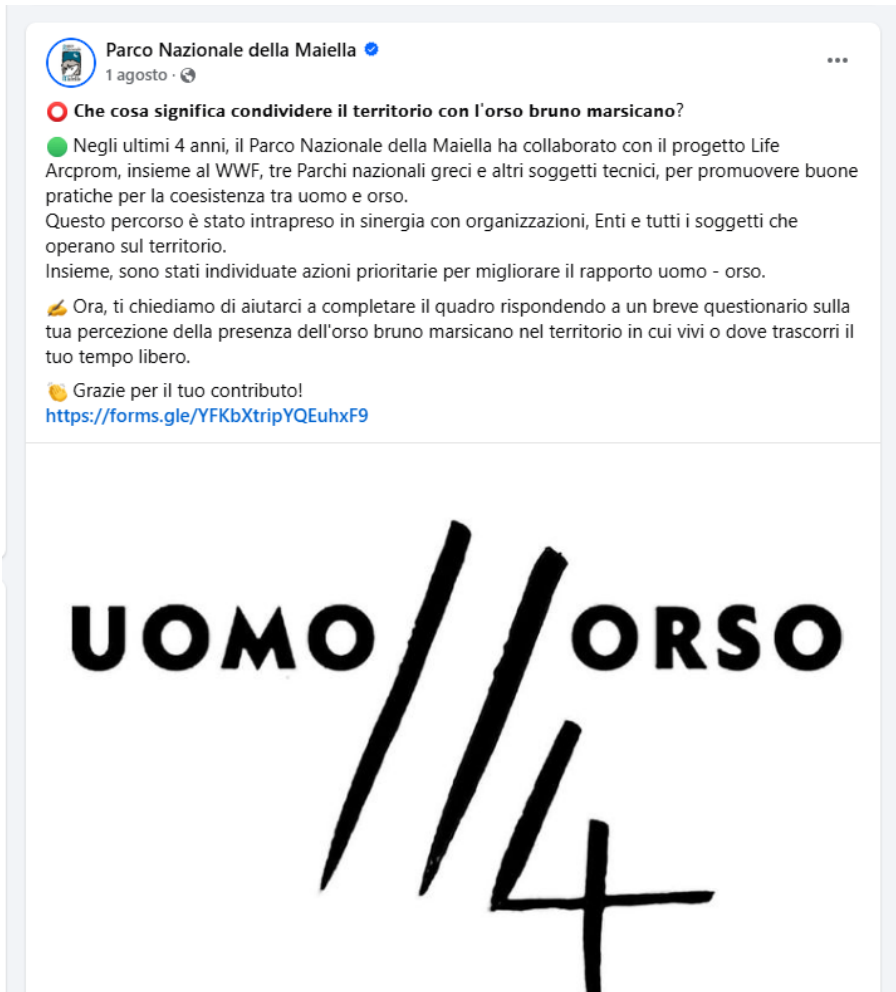


Figure 16. Facebook post on the official page of the Maiella National Park used in 2024 to reach the general public and ask them to compile the D5 questionnaire.

The purpose was, in this case, linked to the evaluation of any deviations in the responses compared to the previous round.

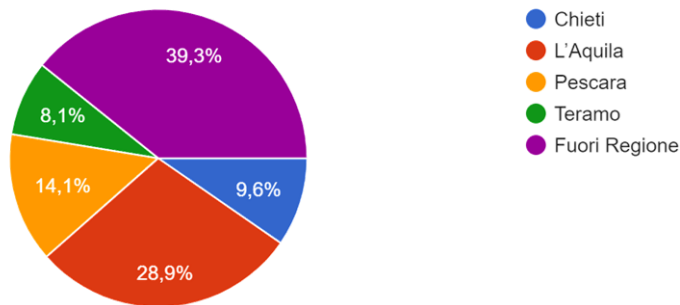
The questionnaire used was the same as the previous survey, with some small adjustments due to the need to evaluate the effectiveness of the Stakeholder Platform work at the end of the project.

Overall, in this second year of the investigation, 137 questionnaires were collected. Thirty-seven feedbacks more than the 100 foreseen in the proposal.

Again, the questionnaire was administrated in Italian, to allow a wider audience to participate in the survey. Responses were analyzed and summarized in graphs. Here below is the detail of the responses and data analysis by graphs (translated from Italian).

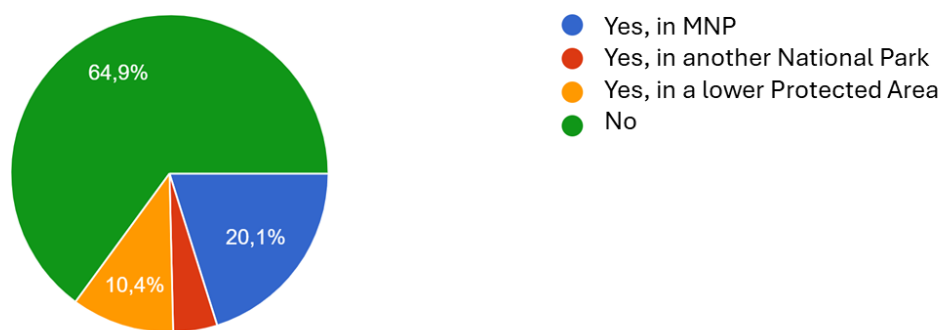
1. In wich Province do you live?

135 risposte



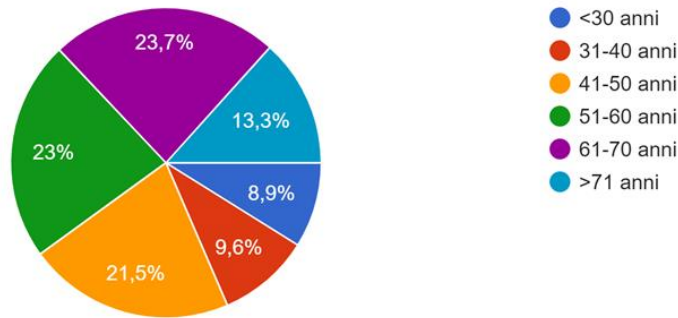
2. Does your house or your activity stand inside a Protected Area?

134 risposte



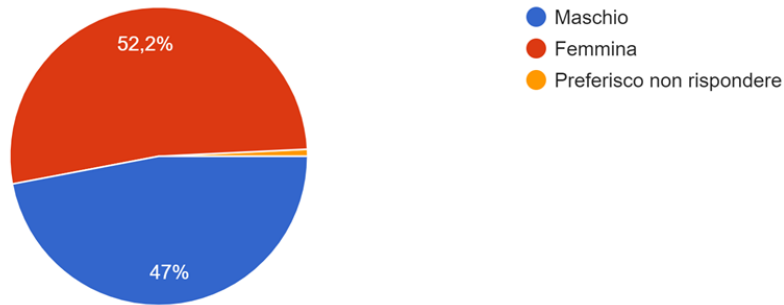
3. How old are you?

135 risposte



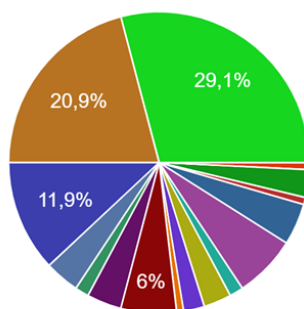
4. Do you want to tell us your gender?

134 risposte



5. What is your main occupation?

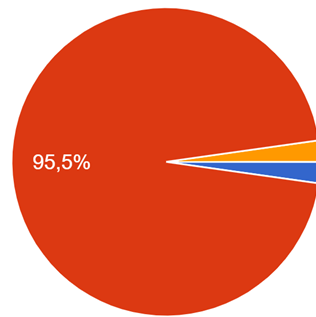
134 risposte



- Breeder/shepherd
- Beekeeper
- Truffle hunter
- Park management body (or other protected area)
- Municipality or Province
- Region
- Veterinarian Public service
- Private vet
- Surveillance body
- Environmental association
- Organization of hiking
- Organization with socio-educational purposes
- Tour operator
- Hunter
- Trade association
- Student
- Researcher
- Expert on the subject
- Housewife
- Retired
- Tourist
- Other

6. How do you rate your relationship with the presence of the Apennine brown bear?

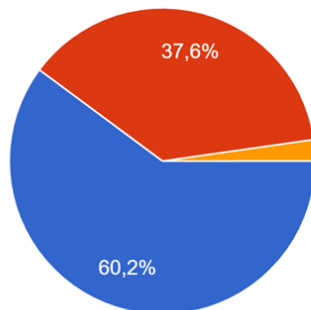
134 risposte



- His presence is absolutely indifferent to me
- I'm happy to live in an area where the bear also lives
- His presence for me is a source of stress and interferes with my activity

7. In general, in your region, how do people experience the presence of bears?

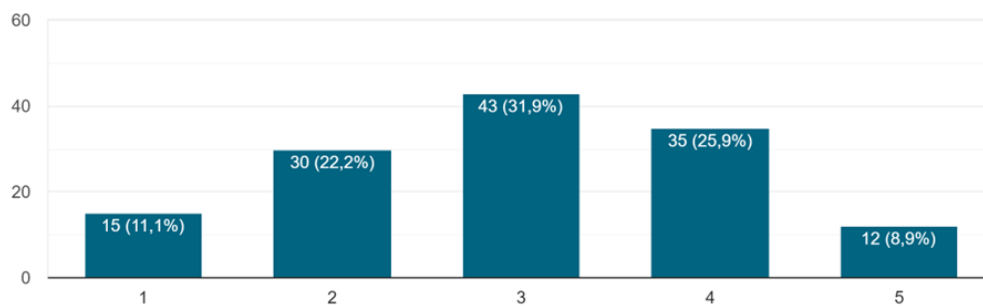
133 risposte



- Pretty good, the bear is generally accepted
- So and so, there are situations in which the presence of the bear is problematic
- Pretty bad, in general the bear is a problem and its presence generates conflict

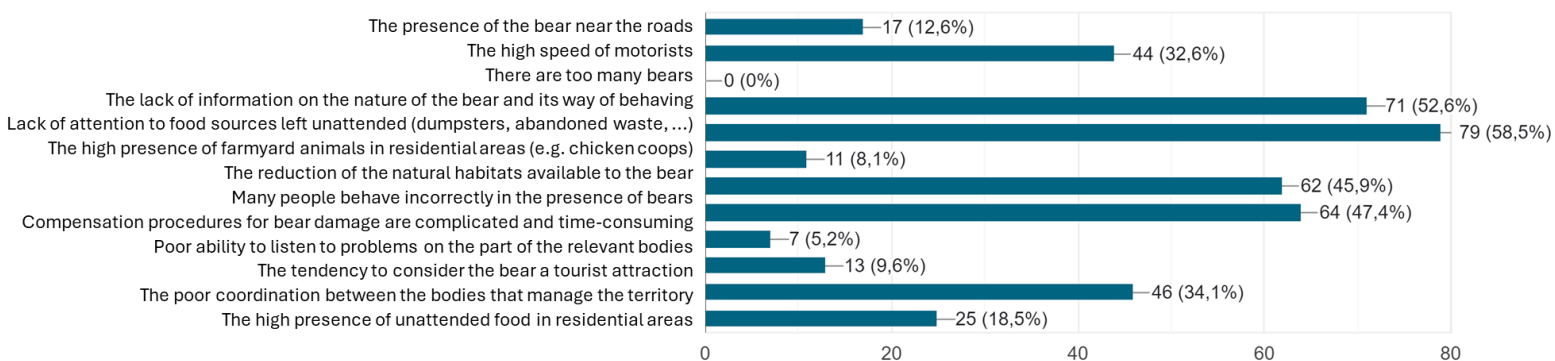
8. Do you think you know bear behavior?

135 risposte



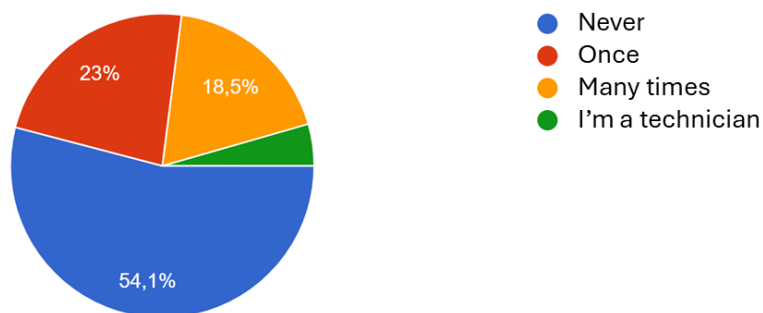
9. What do you think are the main factors that favor the emergence of problems between humans and the Apennine brown bear in your region? (maximum 3 answers)

135 risposte



10. Have you ever attended a meeting on the Apennine brown bear in which the technicians illustrated data on its diffusion / behavior of the species / how to behave in its presence?

135 risposte



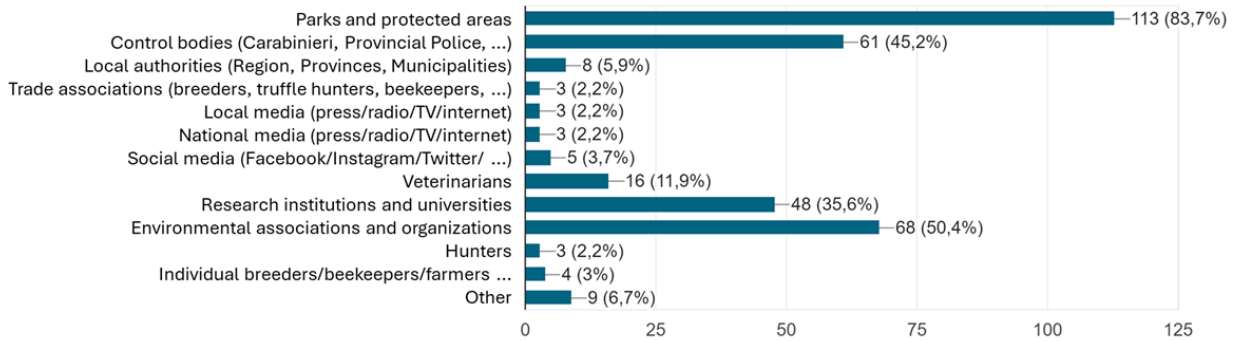
11. If you answered Never, why?

73 risposte



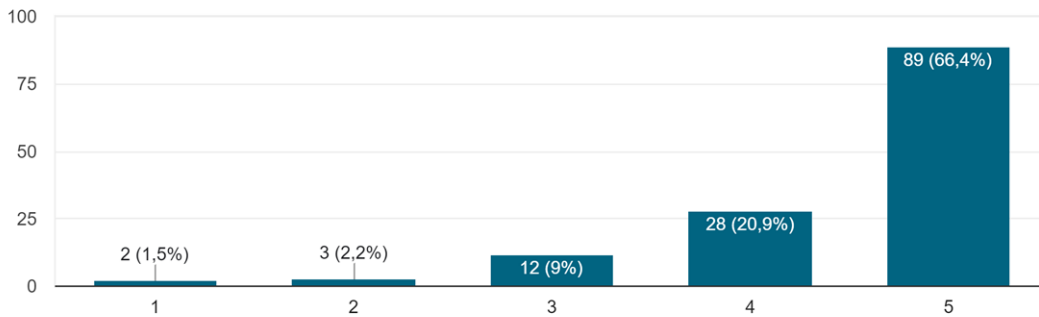
12. What sources of information do you trust most when it comes to the Apennine brown bear? (maximum 3 answers)

135 risposte



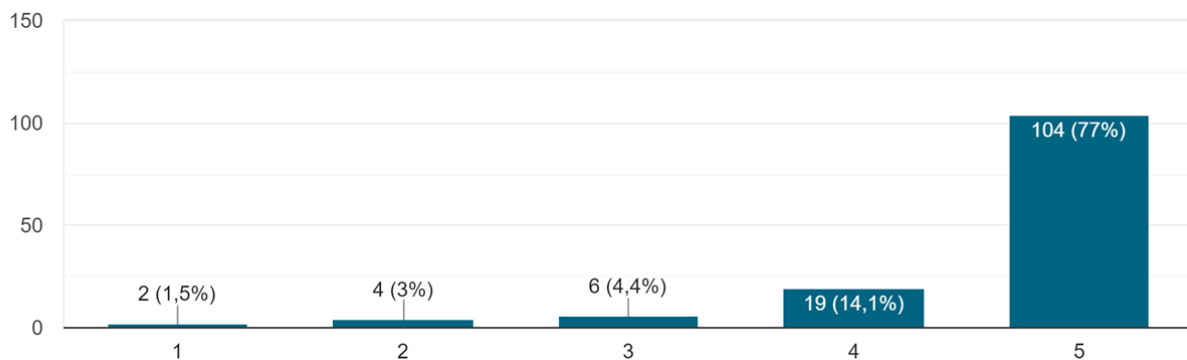
13. Do you think that moments of discussion organized on the territory can improve the relationship between people and the Apennine brown bear?

134 risposte



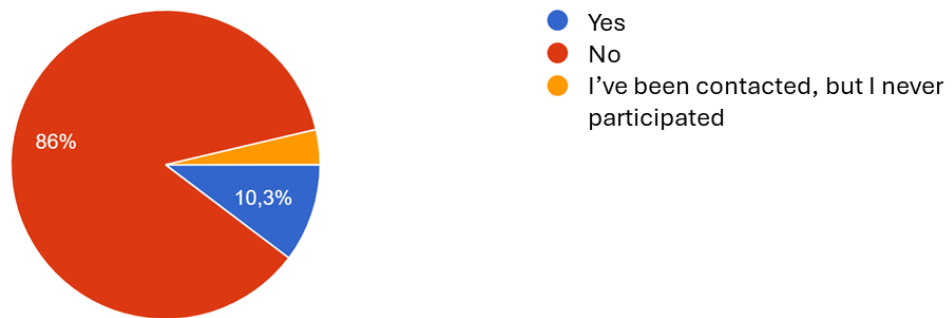
14. Do you think that collaboration between different subjects (organisations/communities/institutions) can be useful for improving human-bear coexistence?

135 risposte



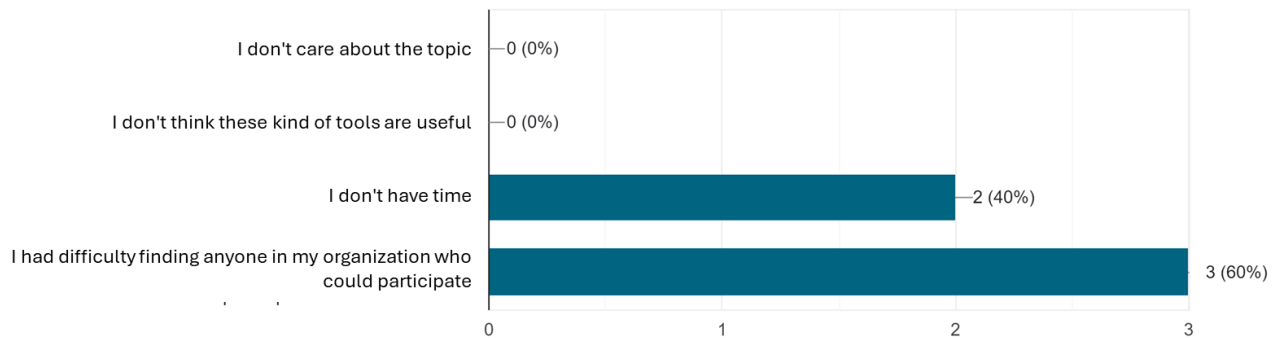
15. Do you participate directly in the work of the Platform for human-Apennine brown bear coexistence as part of the Life-ARCPROM project?

136 risposte



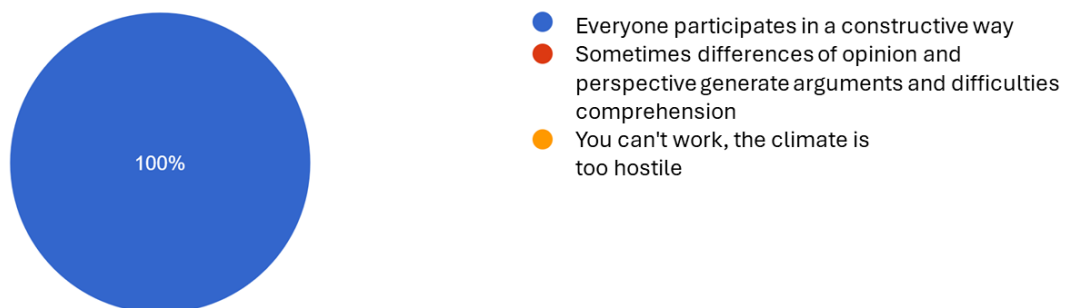
16. If you have never participated, despite having been contacted, why?

5 risposte



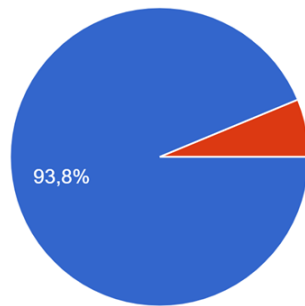
17. How do you rate the climate within the platform?

15 risposte



18. How do you evaluate the Platform's working method?

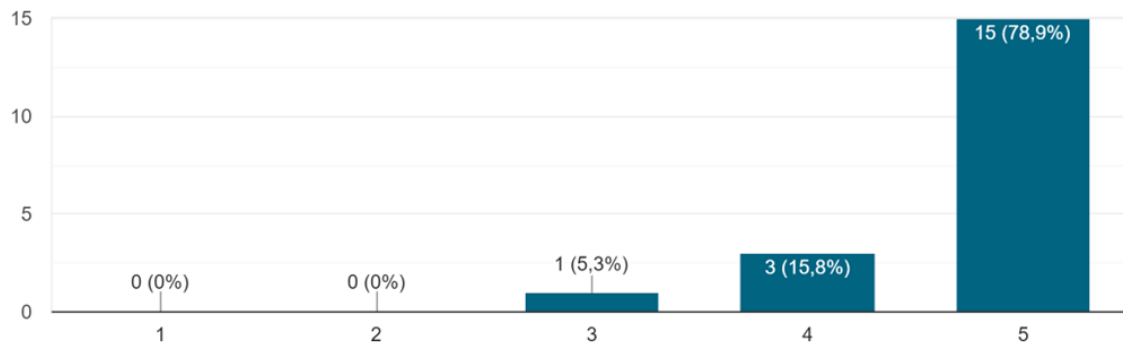
16 risposte



- Good, the presence of a facilitator helps you achieve your goals meetings
- Can be improved: sometimes I have the feeling of not being able to fully express my point of view
- Not good, I left every time dissatisfied

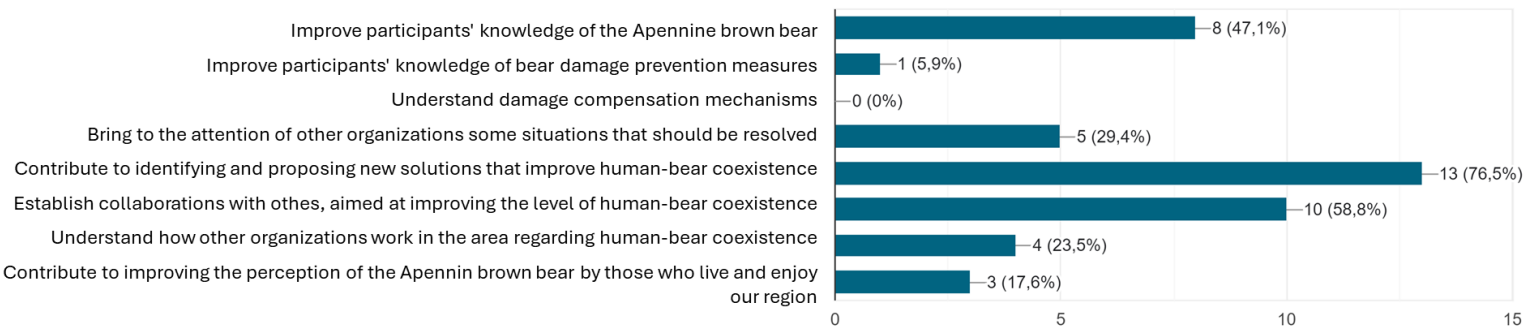
19. Do you think that participating in the Platform can help in identify shared solutions for improving human-bear coexistence?

19 risposte



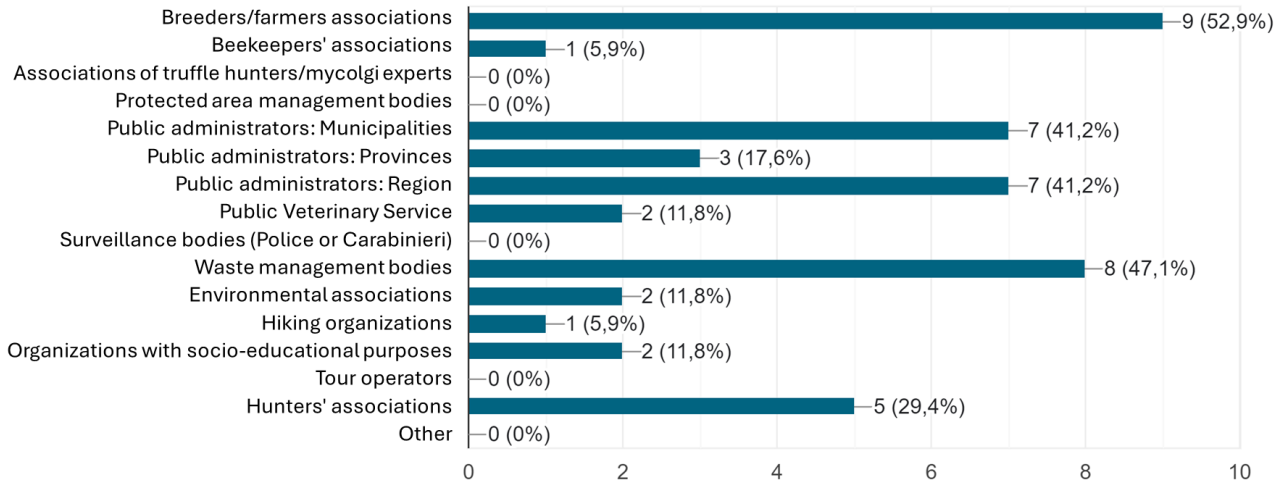
20. Which of the following results do you think have been achieved with the Platform's work? (maximum 3 answers)

17 risposte



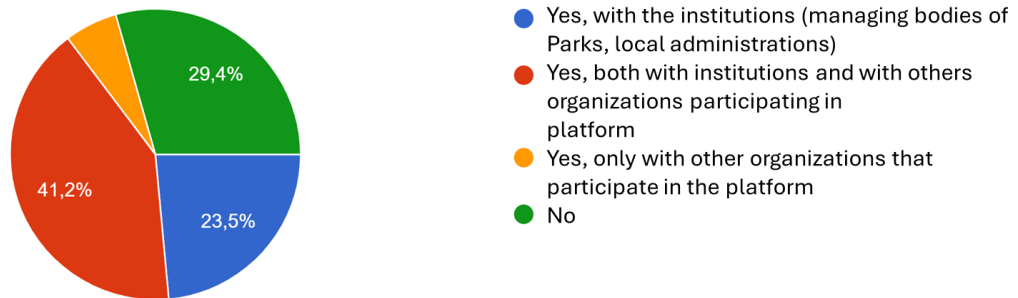
21. Which organizations do you think were under-represented at the platform's work, which would have allowed better results to be achieved? (maximum 3 answers)

17 risposte



23. Has your organization managed to collaborate with other participants in the Platform to carry out human-bear coexistence actions in the area?

17 risposte



The survey conducted at the end of the project showed a higher response than the one conducted in 2022. Also due to the period of dissemination of the questionnaire, the number of tourists who participated increased.

However, the number of people living in the Region who responded remained stable while it's important to underline that the number of farmers and breeders has increased.

The results collected show good acceptance of the presence of the bear, a good knowledge of its behavior, the recognition of the Maiella National Park as a technical and informative subject of reference and an excellent appreciation of the activities proposed during the project.

The works of the Platform were judged positively and the participating organizations managed to network with each other to design and implement actions for coexistence with the Apennine brown bear.

A more detailed comparison of the variation in responses from 2022 to 2024 is reported in the Final Report of Action D5.

