



# LIFE ARCPROM



ΑΝΘΡΩΠΟΣ  
USOMO  
HUMAN

ΑΡΚΟΥΔΑ  
ORSO  
BEAR

1/4

## LIFE18 NAT/GR/000768

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

### ACTION D8

#### Report on the Socio-Economic Impact of the Project



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## ***Photo in Front Page***

Field data collection by Dr. Giannakopoulos: administering the questionnaire to a livestock farmer in the Rhodope Mountain Range National Park (left).

A Bear Friendly producer in the Maiella National Park (right).

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## SUMMARY

The present Deliverable of the LIFE ARCPROM project aims to measure and capture the main social and economic impacts of the project across the four National Parks where it has been implemented in Greece and Italy.

On the Greek side, the collection of impact data was carried out through structured questionnaires addressed to three different categories of stakeholders directly or indirectly involved in human–bear coexistence. Specifically, three tailored questionnaires were designed for: (a) primary sector producers, (b) local businesses, and (c) visitors to each National Park. The analysis focused on changes in damages and prevention expenditures, on attitudes and emotional responses toward wildlife, as well as on governance functions and levels of institutional trust.

In the primary sector, there was a substantial increase in the participation of producers in training activities and in the adoption of preventive measures designed to mitigate damages caused by bears and other large carnivores. Producers assessed positively the project's contribution to improving working conditions, enhancing entrepreneurship, and diversifying income sources. They acknowledged that the brown bear, when accompanied by appropriate infrastructure and management protocols, can act as a catalyst for local development.

Service and hospitality enterprises reported indirect benefits, such as the strengthening of each area's ecotourism identity and the creation of prospects for product and service diversification. The "RESPECT" label served as a tool of environmental branding and as a means of networking among local producers and providers. Although immediate financial returns differed across sectors, there was documented willingness to participate in similar long-term cooperative schemes, thereby ensuring the continuation of the effort under the AFTER LIFE framework.

Visitors associated the presence of the brown bear with positive prospects for tourism and the local economy, while at the same time expressing mixed emotional responses regarding the possibility of an encounter. This finding underscores the need for coherent interventions in information, signage, and education in order to strengthen perceived safety and reduce avoidance behaviours.

The LIFE ARCPROM project in the Maiella National Park (MNP) demonstrated that conservation of the Apennine brown bear, a critically endangered subspecies, can generate broad socio-economic benefits alongside ecological ones. Action D8 assessed these impacts by integrating data from monitoring, prevention, education, capacity building and stakeholder engagement actions (C1, C2, C5, C6, C7, C9, C10, E5) with surveys previously carried out under Actions D1, D3, and D5.

Key findings highlight three major dimensions: conflict reduction and coexistence; economic opportunities and diversification; governance, trust, and capacity building. Bear Emergency Teams, preventive tools such as iron protections, e-fences, and deterrents, and dialogue with residents significantly reduced damages and mitigated tensions. Iron protections and Critter Gitters were seen as highly effective and over 70% of surveyed residents expressed positive or neutral attitudes toward bears, accepting damages as part of coexistence. This tolerance reduces risks of illegal killings and strengthens trust in institutions.

The Bear Friendly label gave producers visibility and recognition for sustainable practices, with high satisfaction and willingness to reinvest despite modest short-term market gains. Bear Tours, the Bear Trail, and educational initiatives created opportunities for eco-tourism and cultural enrichment. Together, these activities diversified local economies and enhanced the territory's branding potential.

The stakeholder platform evolved into a trusted participatory space, fostering inclusion, conflict mitigation, and durable networks among local actors. Surveys confirmed MNP's role as a highly trusted institution, amplifying the effectiveness of awareness and education actions. Capacity building, volunteer mobilisation, and knowledge transfer produced long-term benefits by strengthening skills, local empowerment, and resilience to future challenges.

Overall, LIFE ARCPROM in MNP generated socio-economic impacts that exceeded expectations. It consolidated positive community attitudes, created governance mechanisms that reduce conflict and

improve decision-making, and laid the groundwork for sustainable economic opportunities linked to coexistence with bears. While challenges remain—particularly around improving prevention tools and strengthening the market appeal of bear-friendly products—the project has shown that conservation of the Apennine brown bear is not only ecologically urgent but also socially acceptable and economically beneficial.

## ΠΕΡΙΛΗΨΗ

Το παρόν Παραδοτέο του έργου αποσκοπεί στην μέτρηση και αποτύπωση των κυριότερων κοινωνικών και οικονομικών επιδράσεων του έργου LIFE ARCPROM στα 4 Εθνικά Πάρκα υλοποίησης του έργου σε Ελλάδα και Ιταλία.

Στην Ελληνική πλευρά η συλλογή των δεδομένων επίδρασης του έργου υλοποιήθηκε μέσω δομημένων ερωτηματολογίων που απαντήθηκαν από 3 διαφορετικές κατηγορίες ανθρώπων που εμπλέκονται με τη συνύπαρξη αρκούδας και ανθρώπου. Ειδικότερα, 3 διαφορετικά ερωτηματολόγια απευθύνθηκαν σε παραγωγούς του πρωτογενούς τομέα, σε τοπικές επιχειρήσεις και σε πισκέπτες του κάθε Εθνικού Πάρκου. Η ανάλυση εστίασε στη μεταβολή ζημιών και δαπανών πρόληψης, στις στάσεις και συναισθηματικές αποκρίσεις έναντι της άγριας ζωής, και στη λειτουργία διακυβέρνησης και εμπιστοσύνης.

Στον πρωτογενή τομέα καταγράφηκε ουσιαστική αύξηση συμμετοχής των παραγωγών σε εκπαιδεύσεις και υιοθέτησης μέτρων πρόληψης και αποτροπής ζημιών από αρκούδα και άλλους μεγάλους θηρευτές. Οι παραγωγοί αξιολόγησαν θετικά τη συμβολή του προγράμματος στη βελτίωση των συνθηκών εργασίας, στην επιχειρηματικότητα και στη διαφοροποίηση εισοδήματος, αναγνωρίζοντας ότι η καφέ αρκούδα, όταν πλαισιώνεται από κατάλληλες υποδομές και πρωτόκολλα, δύναται να λειτουργήσει ως σημείο τοπικής ανάπτυξης.

Οι επιχειρήσεις υπηρεσιών και φιλοξενίας ανέδειξαν έμμεσες ωφέλειες, όπως η ενίσχυση της οικονομικής ταυτότητας κάθε περιοχής και οι προοπτικές διαφοροποίησης προϊόντων/υπηρεσιών. Το σήμα «RESPECT» λειτούργησε ως εργαλείο περιβαλλοντικού branding και δικτύωσης τοπικών παραγωγών/παρόχων. Αν και οι άμεσες αποδόσεις είναι ετερογενείς μεταξύ κλάδων, τεκμηριώνεται προθυμία συμμετοχής σε παρόμοια μακροπρόθεσμα συνεργατικά σχήματα, γεγονός που διασφαλίζει την AFTER LIFE συνέχεια της προσπάθειας.

Οι επισκέπτες συνέδεσαν την παρουσία της καφέ αρκούδας με θετικές προοπτικές για τον τουρισμό και την τοπική οικονομία, εκφράζοντας ωστόσο ανάμικτες συναισθηματικές αποκρίσεις για την πιθανότητα συνάντησης με αρκούδα. Η διαπίστωση τεκμηριώνει την ανάγκη συνεκτικών παρεμβάσεων ενημέρωσης, σήμανσης και εκπαίδευσης για την ενίσχυση του ασφάλειας και τον περιορισμό συμπεριφορικών αποφυγών.

Το έργο LIFE ARCPROM στο Εθνικό Πάρκο Maiella (MNP) απέδειξε ότι η διατήρηση της καφέ αρκούδας των Απεννίνων, ενός υποείδους σε κρίσιμη κατάσταση, μπορεί να δημιουργήσει ευρείες κοινωνικο-οικονομικές ωφέλειες παράλληλα με τα οικολογικά οφέλη. Η Δράση D8 αξιολόγησε αυτές τις επιπτώσεις ενσωματώνοντας δεδομένα από δράσεις παρακολούθησης, πρόληψης, εκπαίδευσης, ανάπτυξης ικανοτήτων και συμμετοχής των εμπλεκόμενων φορέων (C1, C2, C5, C6, C7, C9, C10, E5) με έρευνες που είχαν προηγουμένως πραγματοποιηθεί στο πλαίσιο των Δράσεων D1, D3 και D5.

Τα βασικά ευρήματα υπογραμμίζουν τρεις κύριες διαστάσεις: μείωση των συγκρούσεων και συνύπαρξη, οικονομικές ευκαιρίες και διαφοροποίηση, διακυβέρνηση, εμπιστοσύνη και ανάπτυξη ικανοτήτων.

Οι Ομάδες Έκτακτης Ανάγκης για Αρκούδες, τα προληπτικά μέσα, όπως οι ηλεκτροφόρες περιφράξεις και οι αποτρεπτικές συσκευές, καθώς και ο διάλογος με τους κατοίκους, μείωσαν σημαντικά τις ζημιές και κατέστησαν τις εντάσεις πιο διαχειρίσιμες. Οι σιδερένιες κατασκευές και οι συσκευές Critter Gitter θεωρήθηκαν ιδιαίτερα αποτελεσματικές, και πάνω από το 70% των ερωτηθέντων κατοίκων εξέφρασε

θετική ή ουδέτερη στάση απέναντι στις αρκούδες, αποδεχόμενοι τις ζημιές ως μέρος της συνύπαρξης. Αυτή η ανεκτικότητα μειώνει τον κίνδυνο παράνομων θανάτων και ενισχύει την εμπιστοσύνη στους θεσμούς.

Το σήμα Bear Friendly προσέφερε στους παραγωγούς ορατότητα και αναγνώριση για τις βιώσιμες πρακτικές τους, με υψηλό βαθμό ικανοποίησης και διάθεση να επανεπενδύσουν, παρά τα περιορισμένα βραχυπρόθεσμα οφέλη της αγοράς. Οι Bear Tours, το Bear Trail και οι εκπαιδευτικές πρωτοβουλίες δημιούργησαν ευκαιρίες για οικοτουρισμό και πολιτιστική ενίσχυση. Συνολικά, αυτές οι δραστηριότητες διαφοροποίησαν τις τοπικές οικονομίες και ενίσχυσαν το δυναμικό προώθησης του εδάφους.

Η πλατφόρμα των εμπλεκόμενων φορέων εξελίχθηκε σε έναν αξιόπιστο συμμετοχικό χώρο, προωθώντας την ένταξη, τη μείωση των συγκρούσεων και τη δημιουργία διαρκών δικτύων μεταξύ των τοπικών φορέων. Οι έρευνες επιβεβαίωσαν τον ρόλο του MNP ως ενός ιδιαίτερα αξιόπιστου θεσμού, ενισχύοντας την αποτελεσματικότητα των δράσεων ευαισθητοποίησης και εκπαίδευσης. Η ανάπτυξη ικανοτήτων, η κινητοποίηση εθελοντών και η μεταφορά γνώσης παρήγαγαν μακροπρόθεσμα οφέλη ενισχύοντας δεξιότητες, τοπική ενδυνάμωση και ανθεκτικότητα απέναντι σε μελλοντικές προκλήσεις.

Συνολικά, το LIFE ARCPROM στο MNP δημιούργησε κοινωνικο-οικονομικές επιπτώσεις που υπερέβησαν τις προσδοκίες. Εδραίωσε θετικές στάσεις της κοινότητας, δημιούργησε μηχανισμούς διακυβέρνησης που μειώνουν τις συγκρούσεις και βελτιώνουν τη λήψη αποφάσεων, και θέσπισε τα θεμέλια για βιώσιμες οικονομικές ευκαιρίες συνδεδεμένες με τη συνύπαρξη με τις αρκούδες. Παρά τις προκλήσεις που παραμένουν — ιδιαίτερα όσον αφορά τη βελτίωση των προληπτικών εργαλείων και την ενίσχυση της εμπορικής απήχησης των προϊόντων Bear Friendly — το έργο έχει δείξει ότι η διατήρηση της καφέ αρκούδας των Απέννινων δεν είναι μόνο οικολογικά επείγουσα αλλά και κοινωνικά αποδεκτή και οικονομικά επωφελής.

## RIASSUNTO

Il presente Deliverable del progetto LIFE ARCPROM mira a misurare e a rilevare i principali impatti sociali ed economici del progetto nei quattro Parchi Nazionali in cui è stato realizzato, in Grecia e in Italia.

Per quanto riguarda la parte greca, la raccolta dei dati sugli impatti è stata effettuata mediante questionari strutturati somministrati a tre diverse categorie di soggetti coinvolti, direttamente o indirettamente, nella convivenza uomo-orso. In particolare, sono stati elaborati tre questionari specifici rivolti a: (a) produttori del settore primario, (b) imprese locali e (c) visitatori di ciascun Parco Nazionale. L'analisi si è concentrata sulla variazione dei danni e delle spese di prevenzione, sugli atteggiamenti e le risposte emotive nei confronti della fauna selvatica, nonché sulle funzioni di governance e sui livelli di fiducia nelle istituzioni.

Nel settore primario è stato registrato un notevole aumento della partecipazione dei produttori ad attività formative e dell'adozione di misure preventive volte a ridurre i danni causati dall'orso e da altri grandi carnivori. I produttori hanno valutato positivamente il contributo del progetto al miglioramento delle condizioni di lavoro, allo sviluppo dell'imprenditorialità e alla diversificazione delle fonti di reddito. Essi hanno riconosciuto che l'orso bruno, se accompagnato da infrastrutture adeguate e da protocolli gestionali appropriati, può costituire un catalizzatore per lo sviluppo locale.

Le imprese di servizi e di ospitalità hanno evidenziato benefici indiretti, quali il rafforzamento dell'identità ecoturistica di ciascun territorio e le prospettive di diversificazione di prodotti e servizi. Il marchio "RESPECT" ha operato come strumento di branding ambientale e di networking tra produttori e operatori locali. Sebbene i ritorni economici immediati siano risultati eterogenei tra i diversi settori, è stata documentata una disponibilità a partecipare a schemi cooperativi di lungo termine, garantendo così la continuità dell'impegno nella fase di AFTER LIFE.

I visitatori hanno associato la presenza dell'orso bruno a prospettive positive per il turismo e per l'economia locale, pur esprimendo risposte emotive contrastanti riguardo alla possibilità di un incontro diretto. Tale

constatazione sottolinea la necessità di interventi coerenti di informazione, segnaletica ed educazione, volti a rafforzare la percezione di sicurezza e a ridurre i comportamenti di evitamento.

Il progetto LIFE ARCPROM nel Parco Nazionale della Maiella (PNM) ha dimostrato che la conservazione dell'orso bruno marsicano, una sottospecie in pericolo critico, può generare ampi benefici socio-economici oltre a quelli ecologici. L'Azione D8 ha valutato questi impatti integrando i dati derivanti dal monitoraggio, dalla prevenzione, dall'educazione, dal capacity building e dal coinvolgimento degli stakeholder (C1, C2, C5, C6, C7, C9, C10, E5) con i questionari precedentemente realizzati nell'ambito delle Azioni D1, D3 e D5.

I risultati principali evidenziano tre dimensioni chiave: riduzione dei conflitti e coesistenza; opportunità economiche e diversificazione; governance, fiducia e sviluppo delle capacità.

Le squadre di emergenza orso (BET), gli strumenti preventivi come le protezioni in ferro, le recinzioni elettriche e i deterrenti, insieme al dialogo con i residenti, hanno ridotto significativamente i danni e mitigato le tensioni. Le protezioni in ferro e i Critter Gitter sono stati percepiti come altamente efficaci, e oltre il 70% dei residenti intervistati ha espresso un atteggiamento positivo o neutro nei confronti degli orsi, accettando i danni come parte della coesistenza. Questa tolleranza riduce il rischio di uccisioni illegali e rafforza la fiducia nelle istituzioni.

Il marchio Bear Friendly ha offerto ai produttori visibilità e riconoscimento per le pratiche sostenibili, con un alto grado di soddisfazione e la disponibilità a reinvestire nonostante i modesti guadagni di mercato a breve termine. I Bear Tour, il Sentiero dell'Orso e le iniziative educative hanno creato opportunità per l'eco-turismo e l'arricchimento culturale. Complessivamente, queste attività hanno diversificato le economie locali e migliorato il potenziale di valorizzazione del territorio.

La piattaforma degli stakeholder si è evoluta in uno spazio partecipativo affidabile, favorendo inclusione, mitigazione dei conflitti e reti durature tra gli attori locali. I questionari hanno confermato il ruolo del PNM come istituzione altamente affidabile, amplificando l'efficacia delle azioni di sensibilizzazione ed educazione. Il capacity building, la mobilitazione dei volontari e il trasferimento di conoscenze hanno prodotto benefici a lungo termine rafforzando le competenze, l'empowerment locale e la resilienza a sfide future.

Complessivamente, il progetto LIFE ARCPROM nel PNM ha generato impatti socio-economici superiori alle aspettative. Ha consolidato atteggiamenti positivi nella comunità, creato meccanismi di governance in grado di ridurre i conflitti e migliorare il processo decisionale, e gettato le basi per opportunità economiche sostenibili legate alla coesistenza con gli orsi. Pur rimanendo alcune sfide — in particolare migliorare l'efficacia degli strumenti di prevenzione e rafforzare l'appeal commerciale dei prodotti Bear Friendly — il progetto ha dimostrato che la conservazione dell'orso bruno marsicano è non solo ecologicamente urgente, ma anche socialmente accettabile ed economicamente vantaggiosa.

### Introduction

Across Europe, populations of once-declining species such as the brown bear (*Ursus arctos*) have been recovering—a trend driven by stronger environmental legislation, targeted conservation funding, and the natural restoration of habitats.

Reintroducing or expanding endangered species in human-dominated landscapes brings real challenges. Bears can cause economic losses, spark social tensions, and heighten fear among residents—particularly in rural, mountainous, and tourist areas. The international literature consistently shows that acceptance of conservation measures depends not only on ecological arguments, but also on perceived risk, lived experiences of conflict, a sense of fairness, and trust in institutions.

In Greece—especially in the western and northern regions—brown bear populations represent both an ecological asset and a socio-economic test. Inevitably, in areas where bear habitats coincide with human activity, interactions between people and bears are frequent. These include damage to livestock, beehives, crops, and infrastructure, as well as occasional traffic accidents and close encounters. Such incidents often shape local residents' perceptions of the species, reinforcing feelings of fear, uncertainty, or even hostility toward bears.

With the core activities of LIFE ARCPROM now completed, it is essential to assess local communities' acceptance of and engagement with the project's measures. Evaluating the effectiveness of interventions and tracking how stakeholders' attitudes toward wildlife have changed are critical to strengthening political, economic, and social cohesion. This study investigates the social and economic dimensions of brown bear presence in the three Greek national parks and evaluates the implementation of LIFE ARCPROM actions. It focuses on three target groups—(a) professionals in the agricultural sector, (b) local businesses, and (c) visitors to the protected areas—examining their experiences before and during/ after the project implementation. In doing so, it provides a detailed assessment of the project's socio-economic impacts and advances our understanding of how perceptions and acceptance of bear-management measures evolve.

### Methodology

Data used in the study were harvested using structured questionnaires, a well-established method for generating systematic and comparable evidence across large participant groups. To align measurement with stakeholder realities while preserving comparability, three respondent-specific questionnaires were developed—one each for agricultural professionals (producers), local businesses, and visitors to the national parks. The instruments were designed by UTH environmental economics experts, drawing on validated tools in human–wildlife relations and on evidence-based social research principles. Each version included targeted modules (e.g., damages and preventive measures for producers; tourism demand, Bear-Friendly practices/certifications, and collaboration with Public Bodies/NGOs for businesses; motivations, revisit intentions, on-site experience, safety perceptions, and spending patterns for visitors), while a few variables were retained across all versions to support cross-group analysis. The design prioritized a straightforward pre-/post-intervention frame for temporal comparison, an economic assessment of damages, prevention practices, and a detailed psychosocial evaluation of emotions, beliefs, perceived risk, and social constraints associated with brown bear presence.

Each questionnaire comprised four sections: (1) demographics (age, gender, education, residence, sector of employment); (2) economic impacts before and after LIFE ARCPROM actions (damages, prevention practices, and related costs) to enable change estimates and fundamental efficiency indicators; (3) psychological and social impacts (emotional indicators such as fear/anxiety, constraints on social/leisure activities, and perceived community cohesion); and (4) evaluation and future intentions (perceived usefulness of measures and willingness to adopt coexistence practices). Measurement formats combined

closed-ended and multiple-choice items with numeric entries for costs/damages, supplemented by Likert-type scales (numeric and verbal anchors) for subjective perceptions (risk, trust, sense of safety, programme impact) and a small number of open-ended prompts for concise qualitative context.

To facilitate completion and safeguard data quality, the survey was interviewer-administered: trained moderators posed questions and recorded responses under a standardised protocol. Screening questions verified eligibility and primary occupation/activity; uniform interviewer instructions and coding rules ensured reliability across sites and groups. Instrument quality was addressed from the outset through a faculty-supervised pre-test, which confirmed linguistic clarity and content validity.

Fieldwork involved establishing local contacts and conducting on-site visits to engage with professionals in the primary sector as well as service businesses like agritourism units and local shops. Interviews were carried out in person by staff from the UTH staff in collaboration with personnel from the NPs Management Units. Tourists were randomly selected on-site for participation in the survey. The data collection took place from April to May 2025 across 3 National Parks. All responses were anonymous. Once completed, the questionnaires were compiled into an aggregated dataset and handed over to UTH analysts who were not involved in the field interviews, ensuring both confidentiality and impartiality. Unsurprisingly, none of the primary producers, business owners, or sampled tourists declined to participate.

The survey tool’s reliability was tested with Cronbach’s alpha, which checks whether questions that measure the same idea give consistent results. All values were above 0.70—Economic Factor 0.813, Social Factor 0.700, Contribution 0.852—showing acceptable to strong consistency and supporting convergent validity. Content validity was ensured by basing the questionnaire on established studies and standard formats (e.g., Likert scales) and by running a faculty-supervised pretest to confirm precise wording and complete coverage of the topics. External validity was improved by deliberately sampling firms and organisations active in the relevant areas and sectors, which makes the sample more representative and the findings more generalisable to similar populations.

## Results

In total, 120 questionnaires were completed by producers, local businesses, and visitors. This composition ensured balanced representation of all key stakeholder groups and provided a robust basis for the socio-economic assessment. The detailed breakdown by National Park and professional category is presented in the tables below.

Northern Pindos NP			
Group / Sub-group		Count	Villages
Primary Sector Producers	<i>Livestock breeders</i>	10	Elafotopos; Metsovo; Milia Metsovou; Vitsa Zagoriou; Samarína; Smíxi; Kipoureió; Konitsa
	<i>Beekeepers</i>	5	Tsepelovo; Asprangeloi; Metsovo; Miléa; Dilofo
	<i>Farmers</i>	5	Friagkiades; Skamneli; Asprangeloi; Laísta; Monodéndri
Visitors		20	Papigo; Metsovo
Local businesses		20	Asprangeloi; Metsovo; Monodéndri; Samarína; Vovousa; Dilofo; Arísti; Papigo; Kleidoniá; Ano Pediná
TOTAL		60	

**Table 1.** Distribution of completed questionnaires by stakeholder group and village, Northern Pindos National Park

Prespes NP			
Group / Sub-group		Count	Villages
Primary Sector Producers	<i>Livestock breeders</i>	2	Agios Germanos; Lefkonas
	<i>Beekeepers</i>	2	Ano Klines; Lefkonas
	<i>Farmers</i>	6	Lefkonas
Visitors		10	Agios Germanos; Psarades
Local businesses		10	Agios Germanos; Psarades; Lefkonas
<b>TOTAL</b>		<b>30</b>	

**Table 2.** Distribution of completed questionnaires by stakeholder group and village\*, Prespes NP

Rhodope Mountain NP			
Group / Sub-group		Count	Villages
Primary Sector Producers	<i>Livestock breeders</i>	2	Paranesti Kyrgia; Lykodromio; Paranesti
	<i>Beekeepers</i>	4	
	<i>Farmers</i>	4	Paranesti
Visitors		10	Paranesti
Local businesses		10	Paranesti
<b>TOTAL</b>		<b>30</b>	

**Table 3.** Distribution of completed questionnaires by stakeholder group and village\*, Rhodope Mountain NP

\*For producers and local businesses, villages refer to the primary place of activity/operation of the respondent. For visitors, villages refer to the on-site interview location.

### A. Primary Sector Producers

As regards the demographic profile of primary-sector professionals, most respondents were men ( $\approx 70\%$ ) with an average age above 45 years, indicating a mature and experienced rural workforce with long-standing routines and place-based livelihoods. Educational attainment clustered at the upper-secondary level (high school or technical–vocational training), suggesting a predominantly practical skillset that can facilitate hands-on prevention but may require targeted guidance for the uptake of newer technologies or protocols. In terms of income, over 60% reported annual household earnings below €15,000, with a substantial share earning less than €10,000—evidence of financial vulnerability that heightens sensitivity to damage costs and may constrain investment capacity for preventive measures. Employment was concentrated almost exclusively in agriculture (livestock, crops, and beekeeping), underscoring a strong dependence on land-based activities and, by extension, frequent exposure to bear–human interactions. Taken together, these characteristics help explain both the perceived risks and the cost–benefit calculus shaping producers’ acceptance of LIFE ARCPROM coexistence measures—where affordability, clear guidance, and demonstrable effectiveness are likely to be decisive for adoption.

Variable	Category	%
Gender	Male	70 %
	Female	30 %
Education level	Bachelor's degree	10 %
	Post-secondary (TVET/college)	15 %
	High school	55 %
	Lower secondary or less	20 %
Annual household income	< €10,000	40 %
	€10,001 – €20,000	25 %
	> €20,000	35 %

**Table 4.** Demographic and Socio-Economic Profile of Agricultural Sector Professionals

Before implementing the LIFE ARCPROM actions, most professionals lacked formal training in coexistence strategies or bear mitigation tools. After the project started, over 60% reported receiving training, support, or participating in prevention activities (e.g., electric fences, livestock guard dogs), indicating a significant increase in engagement with wildlife coexistence practices. This simple comparison highlights a notable rise in awareness and use of prevention tools, driven by greater acceptance of living alongside wildlife—especially when supported by institutional backing, technical assistance, and potential economic benefits such as the Bear-Friendly “RESPECT” scheme.

Involvement	Before LIFE ARCPROM	After LIFE ARCPROM
Adopted preventive measures	35%	67.5%
Used protective equipment	20%	60%
Participation in training/ actions	15%	62.5%

**Table 5.** Establishment of Human–Bear Coexistence Practices Prior to and Following the LIFE ARCPROM Project

Regarding the perceived economic effects of Brown Bear presence—and the way and the burden LIFE ARCPROM enforced that relationship—primary-sector professionals rated, on a scale of 1 to 10 (1 = not at all, 10 = very much), the impacts on their work, income, investment outlook, and broader local economic conditions. The highest average scores were for entrepreneurship (8.77) and income (8.75), indicating that respondents increasingly see the presence of Brown Bear not only as a risk but also as a driver of differentiation, place branding, and ecotourism-related innovation. Tourism (7.41) received a moderately positive rating, consistent with indirect benefits from regional development. Perceived impacts on employment (7.05) and general working conditions (7.74) were also positive, though more cautious.

Factors	Mean
Employment Opportunities	7,05
Tourism Development	7,41
Entrepreneurship Opportunities	8,77
Income in the Area	8,75
Attracting Investment	7,00
Work Conditions	7,74

**Table 6.** Reported economic effects of brown bear presence and LIFE ARCPROM interventions among primary-sector professionals (mean scores, 1–10). Scale: 1 = not at all, 10 = very much; items reflect impacts on work, income, investment outlook, and local economic conditions.

Further, participants also reported a clear decline in average annual damage costs caused by bear activity after the project was put into place. The average damage cost decreased from €988 before the project to €815 afterward—a 17.5% drop. During the same period, prevention spending increased by 39%, from €483 to €674, showing a greater willingness to invest in mitigation efforts, likely driven by awareness campaigns. Agricultural professionals also observed tangible benefits from interventions that directly lower exposure to conflicts—such as livestock-guarding dogs. Overall, these moderate but consistently positive economic ratings suggest a shift from fear-based risk management to an approach focused on opportunities.

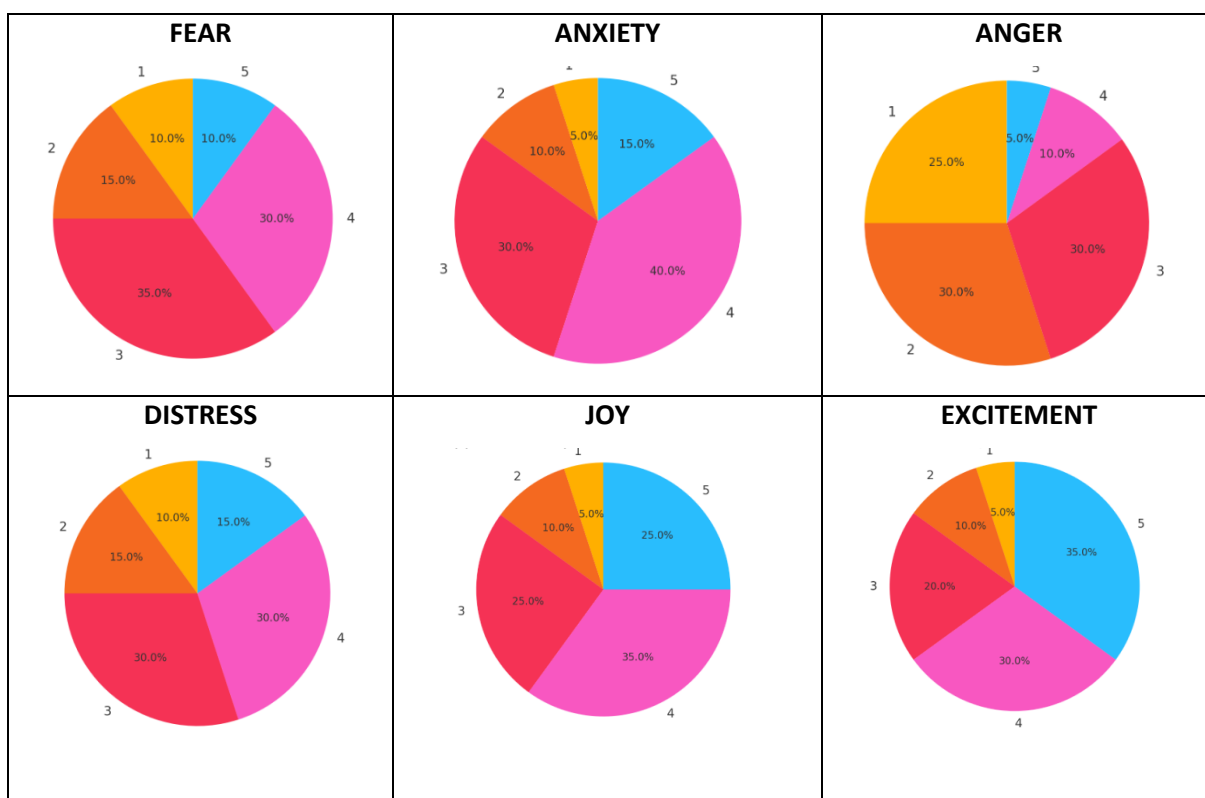


**Table 7.** Changes in average annual damage costs and prevention expenditures among primary-sector professionals before and after LIFE ARCPROM.

Finally, the study measured the social and psychological effects linked to brown bear presence among agricultural professionals and explored how LIFE ARCPROM influenced their perceptions and responses. Using 1–5 Likert scales (1 = not at all, 5 = very much), respondents rated the emotional burden of potential bear encounters in their work or daily environment. The average scores showed moderate

concern—fear: 3.0/5 and anxiety: 3.2/5—which indicates increased vigilance rather than acute distress. Joy (interpreted as awe or admiration for wildlife) was slightly lower at 2.9/5, reflecting mixed attitudes that combine caution with respect. These results, summarized in Table 3.1.5, provide baseline psychosocial metrics for future longitudinal comparisons. In parallel, the analysis examined how bear presence influences daily routines and social behaviour in this population. Since their continuous, work-related exposure to the natural environment, agricultural professionals are expected to show less behavioural avoidance compared to occasional visitors. Therefore, respondents were asked if they avoid specific locations or activities because of the potential for bear encounters, or if they seek proximity out of interest or familiarity.

The data indicate that nearly 30% of agricultural professionals have altered their behaviour in some way due to fear or caution related to bears—evidence of a broader social impact that includes not only perceived physical risk but also psychological and lifestyle effects. A small yet significant portion report actively seeking encounters, usually for observation or monitoring, or because repeated exposure has fostered familiarity that lessens fear. Simultaneously, many professionals—especially those who attended LIFE ARCPROM training or benefited from specific interventions—experienced a normalization of bear presence, with more balanced emotional responses and fewer behavioural restrictions.



**Table 8.** Emotional responses to potential bear encounters among agricultural professionals

(Colour explanation 1: Yellow; Not at all, 2: Orange; A little, 3: Red; Neutral, 4: Pink; Quite a lot, 5: Blue; Very much)

Behavioural	Yes	No	I seek
Avoiding specific locations	45,00%	30,00%	25,00%
Avoiding long walks	30,00%	40,00%	30,00%
Avoiding forests walks for recreation	35,00%	45,00%	20,00%
Avoiding social visits during peak hours	10,00%	60,00%	30,00%

**Table 9.** Behavioural modifications among agricultural professionals towards the possibility of encountering a bear

The last section of the questionnaire analysed the perceived impact of the LIFE ARCPROM project and its specific tools as evaluated by primary- sector professionals. Participants rated the project’s contribution on a 1–10 scale. The highest average was for Education and Awareness, emphasizing knowledge as essential for coexistence. Entrepreneurship and Income also scored well, indicating economic optimism tied to ecological branding and market differentiation. Trust in Institutions shows an improvement in relationships between stakeholders and authorities, while Tourism, Safety and Policy influence were also positively rated. Conversely, Employment received lower score, implying that direct job creation or capital inflows were not main outcomes.

<b>Factors</b>	<b>Mean</b>
Attracting Investment	6.30
Education and Awareness	8.85
Employment	5.10
Entrepreneurship	7.68
Impact on Work	7.74
Income in the Area	7.55
Policy Influence	7.90
Sense of Safety	8.15
Tourism Development	8.11
Trust in Institutions	7.17

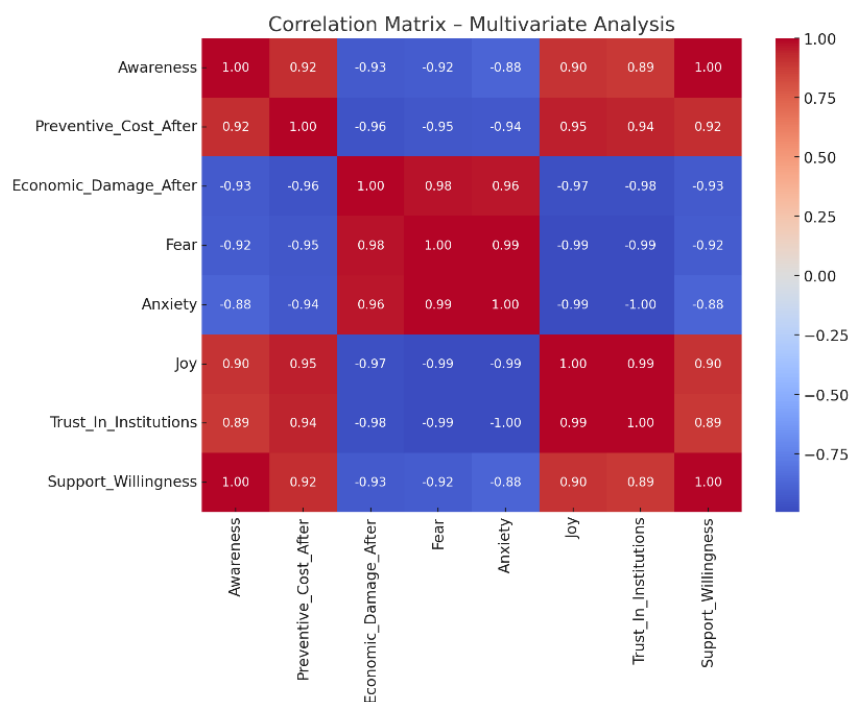
**Table 10.** Table 10. Evaluation of LIFE ARCPROM’s contribution by primary-sector professionals.

The study also assessed the willingness of agricultural professionals to financially support a long-term coexistence plan (such as a five- year AFTER LIFE plan). Respondents were asked if they would contribute an annual amount and for what purposes. About 60% said they would be willing to pay into a structured plan, with willingness positively correlated with awareness of LIFE ARCPROM, perceived benefits from preventive tools, trust in institutions, and improvements in economic opportunities. Notably, most responder expressed openness to considerable amounts of annual contribution, indicating strong engagement to human bear coexistence. Among preferred funding targets, respondents prioritized electric fencing, followed by bear-proof waste bins, and Bear- Friendly certification for products, showing a clear preference for practical, front-line prevention tools alongside certification initiatives.

<b>Annual Contribution</b>	<b>% of Respondents</b>
Not interested	40%
Up to 5€	2.5%
6€-20€	2.5%
21€-50€	32.5%
Over 50€	22.5%

**Table 11.** Declared willing of annual contribution to a long-term coexistence plan

The correlation analysis showed that trust and access to information are key drivers of participation and perceived safety. When participants are well informed about the program, their willingness to engage increases along with a stronger feeling of security. Trust in institutions is negatively related to fear and positively related to optimism, indicating that institutional credibility influences attitudes toward coexistence. Past involvement in preventive measures also correlates with higher willingness to finance efforts, as those who have already invested in prevention tend to be more open to funding similar initiatives over time. Conversely, negative emotions—particularly fear and anxiety—serve as barriers, weakening trust and reducing active participation.



**Table 12.** Correlations among trust, information, perceived safety, emotions, and willingness to contribute within a structured coexistence plan following the completion of the LIFE ARCPROM project.

## B. Local Business

The survey captured the demographic and socio-economic characteristics of business owners and service-sector professionals (tourism, commerce, catering, and other services) across the project area. A total of 40 respondents participated, with a gender distribution of 55% male and 45% female, and a mean age of 41.2 years, representing an active and economically engaged segment of the local population. Educational attainment was relatively high: while most had completed at least upper secondary education, 35% held a university or postgraduate degree, highlighting a solid capacity to engage with sustainability initiatives, certification schemes, and biodiversity-related practices. Reported annual household income placed around 60% of respondents in the €10,000–25,000 range, characterizing a moderate-to-low-income group sensitive to fluctuations in visitor demand, perceived safety, and business continuity. Employment was primarily concentrated in tourism (32.5%), commerce (25%), and hospitality (20%), with the remainder spread across health, social services, and transport.

Variable	Category	%
Gender	Male	55 %
	Female	45 %
Education Level	Master Degree	10 %
	Bachelor Degree	25 %
	High School	52.5 %
	Other/secondary or less	12.5 %
Annual Income	<10.000€	20 %
	10.001€ - 20.000€	32,5 %
	20.001€ - 25.000€	27,5 %
	25.001€ +	20 %
Sector of Employment	Tourism-related	32,5 %
	Commerce	25 %
	Food and Hospitality	20 %
	Other	22,5 %

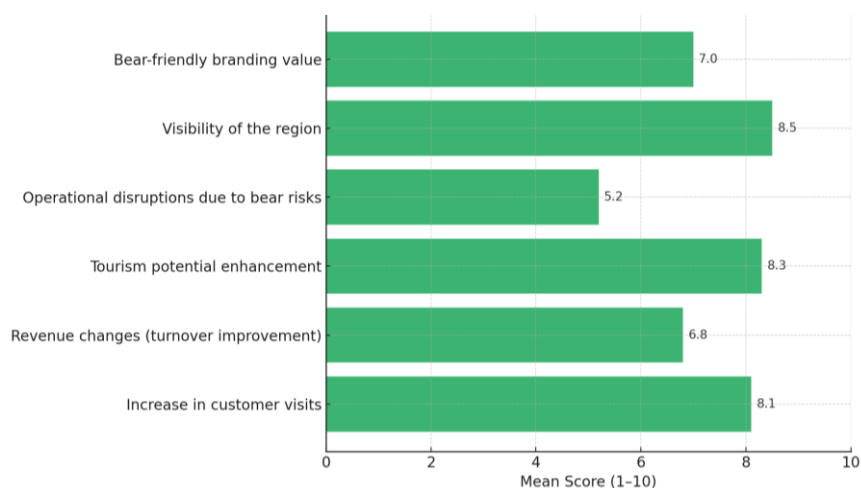
**Table 13.** Demographic and Socio-Economic Profile of Local business owners

It is important to note that the businesses surveyed were not direct participants in the LIFE ARCPROM project. Instead, they were randomly selected to respond to a structured questionnaire concerning the presence of the brown bear and the perceived contribution of the project to coexistence strategies. Responses indicate that prior to the project, involvement in structured coexistence tools or strategies was minimal. During and following the project, however, participants reported increased awareness and adoption of good practices, particularly in relation to waste management and visitor information. These changes should be interpreted as the result of heightened visibility and communication efforts rather than direct project training.

The analysis further assessed the perceived economic impact of brown bear presence and of the LIFE ARCPROM interventions on local businesses. Respondents evaluated key dimensions including customer flow, revenue changes, infrastructure, and tourism potential. Overall, our results showed a moderately positive economic influence. The highest ratings were recorded for regional visibility (8.5/10) and tourism potential (8.3/10), both strongly linked to the project's role in promoting the area and positioning wildlife as an asset for nature-based tourism.

Respondents consistently noted that, when properly managed and communicated, the presence of the brown bear can serve as a tourism asset rather than a liability. Increases in visitor flows were reported, likely attributable to enhanced branding and the visibility generated by the project. While turnover improvements were reported, benefits were not uniform across sectors, with some businesses indicating that longer-term tourism development will be necessary for significant financial returns. A minority of respondents expressed concerns regarding bear-related risks, particularly in connection with waste management and outdoor operations safety. However, these concerns remained limited, suggesting effective adaptation and the relevance of prevention measures. In sum, the findings suggest that local businesses have largely benefited from indirect promotional effects, enhanced visibility, and environmental branding associated with LIFE ARCPROM.

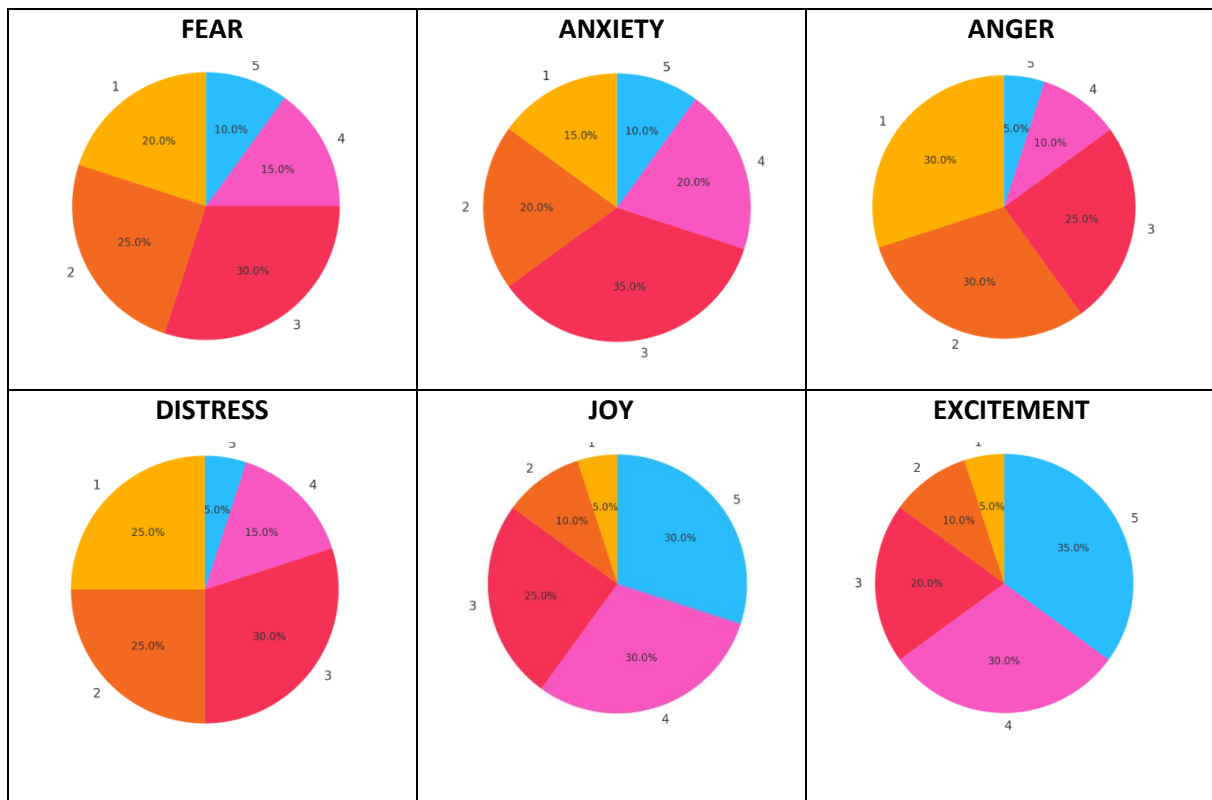
Factors	Mean
Increase in customer visits	8,1
Revenue changes (turnover improvement)	6,8
Tourism potential enhancement	8,3
Operational disruptions due to bear risks	5,2
Visibility of the region	8,5
Added value from bear-friendly branding	7,0



**Table 14.** Business-level assessment of economic effects linked to brown bear presence and LIFE ARCPROM—customer flow, turnover, tourism potential, operational risk, regional visibility, and branding value.

Building on the economic findings, this section explores the social and emotional aspects of brown bear presence as perceived by local businesses during the LIFE ARCPROM implementation. Although business owners generally take a pragmatic approach, emotions still play a role—particularly when human–wildlife interactions can influence customer behaviour and business continuity. Respondents rated six core emotions on a 5-point scale (1 = very low, 5 = very high). Positive emotions stood out more than negative ones: joy (3.4/5) and excitement (3.6/5) indicate that many businesses increasingly see bear presence as an opportunity—linked to nature-based tourism and ecological storytelling. Conversely, fear and distress were relatively low (all < 2.6/5), consistent with normalization and adaptation supported by awareness initiatives and place-branding tools. Behavioural indicators support this view. About one in three businesses (30–35%) reported changing practices out of caution or heightened awareness while most remained unaffected, reporting no fear-driven changes. Avoidance was not widespread, especially among those who engaged with informational activities, understood bear ecology and prevention infrastructure, or operated in sectors benefiting from nature-based tourism. Overall, the social “footprint” of bear presence among businesses is low to moderate and manageable.

Interestingly, a significant portion of respondents also showed curiosity and familiarity, highlighting opportunities to incorporate wildlife into branding and customer engagement—especially when combined with structured wildlife-friendly scheme and certification.



**Table 15.** Emotional responses to potential bear encounters among Local business owners'

(Colour explanation 1: Yellow; Not at all, 2: Orange; A little, 3: Red; Neutral, 4: Pink; Quite a lot, 5: Blue; Very much Emotions towards the possibility of encountering a bear

Behavioural	Yes	No	I seek
Avoiding specific locations	25 %	70 %	5 %
Avoiding long walks	20 %	75 %	5 %
Avoiding forests walks for recreation	22,5 %	72,5 %	5 %
Avoiding social visits during peak hours	15 %	80 %	5 %

**Table 16.** Behavioural modifications among Local business owners towards the possibility of encountering a bear

The analysis of local business perspectives underlined both the tangible and intangible dimensions of the LIFE ARCPROM project's impact, with a particular focus on the service sector (tourism providers, hospitality and related services). The findings pointed to a high level of overall appreciation, especially in areas related to regional visibility and tourism branding, which are central to the sustainability of service-based economies in protected areas.

The highest-rated dimension was Education and Awareness (M = 8.75), underscoring the pivotal role of information campaigns in shaping favourable attitudes towards human–bear coexistence. Tourism Development (M = 8.65) followed closely, reflecting the strategic value of ecological identity and Brown Bear-related branding in attracting new market segments. Similarly, the Sense of Safety (M = 8.45) received strong endorsement. By contrast, economic indicators such as Entrepreneurship (M = 7.85) and Local Income Growth (M = 7.35) were positively evaluated, but to a lesser extent, suggesting cautious optimism among business owners regarding indirect financial benefits through diversification and sustainable tourism. The lowest scores were attributed to Employment (M = 5.40) and Attracting Investment (M = 6.10), highlighting that the project's contribution is regarded more in terms of strategic visibility and long-term resilience than immediate job creation or capital inflows.

In addition to numerical ratings, respondents identified specific interventions as especially effective. These included bear-proof waste bins and Bear-Friendly certification scheme, which provided added marketing value for eco-conscious businesses. Both tools were valued not only for their protective function but also for their ability to enhance the ecological identity of businesses and embed them within a nature-integrated business model.

The analysis also addressed the willingness of businesses to support long-term coexistence initiatives. A majority expressed readiness to contribute, either financially or through in-kind participation (e.g., promotional activities, network cooperation, or providing services). While most businesses indicated preference for modest financial contributions—reflecting limited liquidity—they prioritised visible and practical measures. The most frequently mentioned areas for fund allocation were: educational materials for tourists and youth, infrastructure such as signs, waste bins, and fencing, Bear-Friendly product certification and support schemes and promotion of wildlife tourism and services. This distribution demonstrates a clear preference for measures that combine ecological and economic outcomes.

Finally, a multivariate correlation analysis provided further insight into the interdependencies among the ten dimensions assessed by businesses. Positive associations included the link between Entrepreneurship and Employment ( $r = 0.24$ ), suggesting that dynamic business activity is associated with stronger local employment prospects, and between Employment and Willingness to Support Long-Term Policies ( $r = 0.26$ ), indicating that economic stability fosters civic engagement. A noteworthy correlation was also observed between Policy Influence and Education & Awareness ( $r = 0.18$ ), emphasising the role of knowledge in legitimising institutional interventions. Similarly, Improvement in Daily Work correlated positively with Support Willingness ( $r = 0.17$ ), highlighting that perceived operational benefits are a driver of long-term commitment. Conversely, negative associations revealed underlying tensions. Local Income showed a modest negative correlation with Policy Influence ( $r = -0.26$ ), possibly reflecting scepticism about the extent to which policy initiatives translate into direct economic benefits. Likewise, an inverse relationship between Entrepreneurship and Tourism Development ( $r = -0.24$ ) suggests that some non-tourism-oriented businesses may view tourism-driven branding as misaligned with broader entrepreneurial priorities.

### **C. *Visitors/ Customers***

The visitor sample was mostly female (62.5%), with males at 37.5%, and had an average age of 38.4 years, indicating a largely economically active group. Most held upper-secondary education (62.5%), while 25.0% reported a bachelor's degree and 12.5% a master's degree. Annual household income was modestly distributed: 35% earned less than €10,000, 45% earned between €10,001 and €20,000, and 20% earned over €20,000. Most were Greek (87.5%), with 12.5% from other countries.

A notable portion of visitors showed familiarity with the LIFE ARCPROM project. Nearly two-thirds of the sample (62.5%) indicated that they had heard about the program and its activities in the National Park areas, while the remaining 37.5% reported no prior knowledge. In contrast, awareness of the RESPECT action was more limited: about 20% of respondents recognized the name or remembered information about it, whereas the majority had not encountered it before. This gap underscores the challenge of communicating specific sub-actions within a broader program framework.

When asked where they learned about LIFE ARCPROM and the "RESPECT" initiative, visitors most often mentioned on-site sources, such as signage and information panels at trails and park entrances, as well as communication from accommodation providers and tour guides. These direct touchpoints were cited by nearly half of those who were aware. National Park visitor centres also played a significant role, mentioned by more than a third of the informed respondents. Other sources included social media accounts, official websites and traditional media like newspapers.

Variable	Category	%
Gender	Male	37,5%
	Female	62,5%
Education Level	Master Degree	12,5%
	Bachelor Degree	25,0%
	High School	62,5%
Annual Income	<10.000€	35%
	10.001€ - 20.000€	45%
	>20.000€	20%

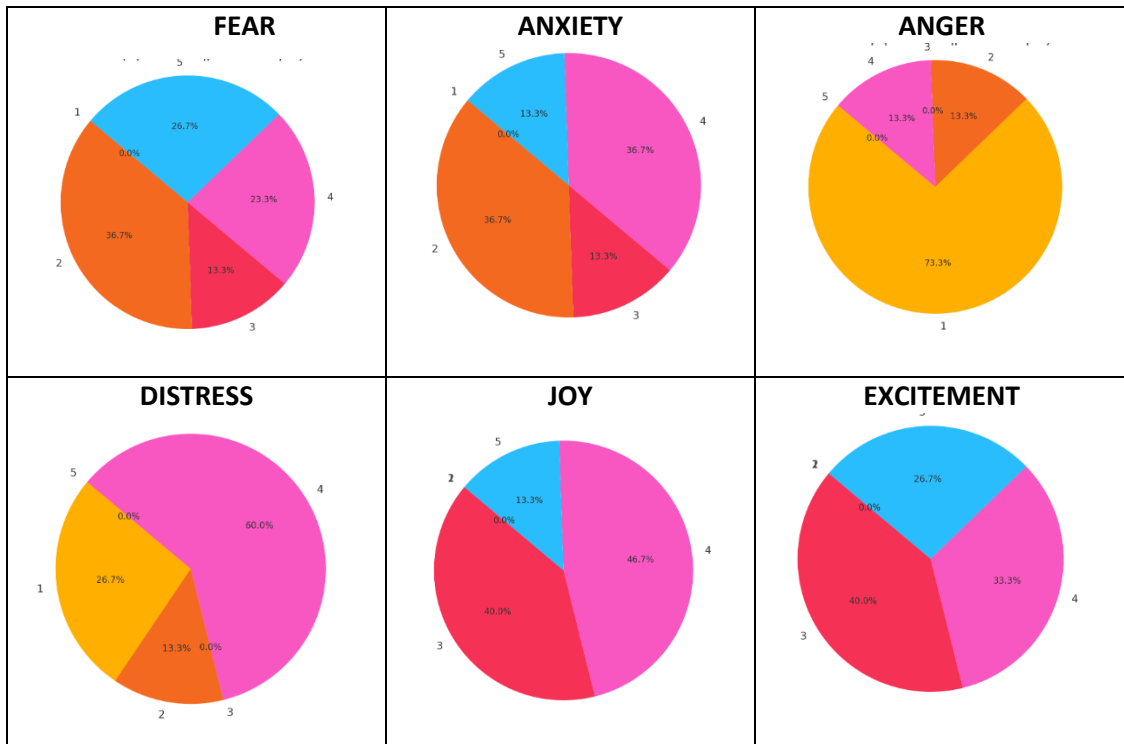
**Table 17.** Profile Demographic and Socio-Economic Profile of Visitors/ Customers surveyed

When visitors asked whether the presence of Brown Bears influenced their planned spending during their journey, nearly half said it made no difference, 25% reported a small effect, 20% a moderate one, and another 10% a strong or very strong effect. These results suggest a notable minority considered added experiential value in wildlife presence and are willing to spend more accordingly. Visitors also asked whether the Brown Bear provides a tourism advantage for the region. Here, perceptions were notably positive as 50% viewed it as a strong or very strong advantage, 40% as moderate, and only 10% as low or none.

Direct willingness to spend on Bear-related activities was also assessed. Nearly 45% said they would definitely or probably pay for such activities, 30% showed moderate willingness, and 25% had little or no interest. These figures reveal a promising niche market for bear-themed guided tours, educational trails, or interpretive experiences. Similar patterns revealed when testing tolerance for higher prices in services labelled as “Bear-Friendly” under the framework of the “RESPECT” scheme. More than half (55%) were open to paying a small premium, 25% were neutral, and 20% opposed price increases. Souvenirs and local products branded with the bear motif generated even stronger interest: 65% expressed willingness to purchase, 20% were indifferent, and only 15% were negative. Regarding the potential of purchasing a bundled “Bear-Experience package,” most respondents favoured moderate price ranges: 30% would pay up to €20, 45% up to €50, and 25% were willing to spend more than €50. This distribution indicates that the mid-price range holds the greatest market potential, though a quarter of visitors are a high-value niche willing to pay for premium experiences.

Finally, questions examined visitors’ willingness to contribute financially to long-term coexistence schemes. Here, 55–60% expressed willingness to contribute annually, while 40–45% were unwilling. Among contributors, 25% would give up to €5, 40% between €10 and €20, 20% up to €40, and 10–15% more than €40. Preferred uses of contributions focused on visible and practical outcomes: 72% prioritized educational materials for residents and youth, 66% supported infrastructure such as waste bins, signs, or fencing, 64% endorsed wildlife tourism promotion, and 59% favoured Bear-Friendly product certification.

From a social and psychological perspective, two main types of impacts were evaluated: Emotional reactions and behavioural responses. First, visitors were asked how much they experience six basic emotions when thinking about the chance of encountering a bear. Although emotions like fear and anxiety were reported at high levels (50,0%), positive emotions such as joy and excitement also predominated (62,50%), indicating a division in how people perceive the situation. Distress, a slightly negative emotion, was interpreted positively by 62.5%, possibly driven by curiosity or excitement. Anger caused by the bear was only reported by 12.5%; it was entirely an internal reaction. However, since only 12.5% of respondents had actually encountered a bear, this likely influences the perception, which is mainly shaped by fear.



**Table 18.** Emotional responses to potential bear encounters among Visitors/ Customers

Secondly, participants were asked to respond if they changed their social schedules or activities due to the possibility of encountering a Brown Bear. A significant portion of the sample reported modifying or considering changes in their social behaviour. Specifically, 37.5% avoid activities, while an equal percentage seek contact with the brown bear, highlighting the need for systematic information, marking, and education. Additionally, social activities seem to be affected, indicating a social dimension to the presence of wildlife.

According to visitors' ratings, the project's actions have a strong impact:

- On tourism development, with 100,00% rating it 8–10, indicating full recognition of the tourism boost provided by enhancing the natural environment and promoting wildlife.
- On business opportunities, with 84,6% giving a score of 7 or higher, confirming that the presence of the bear and related actions are linked to new opportunities for local entrepreneurship.
- On the education of residents and visitors, where 69,2% rated it 8–10, demonstrating that the program plays an important role in informing and raising awareness.
- On the sense of safety in the area, with 39,5% rating it 8–10, with respondents stating they feel safer in the area due to the project.
- On policy decision-making, where 69,2% responded positively (7–10), indicating improved dialogue and trust between stakeholders.
- On attracting investment, despite positive trends, only 14,3% awarded the maximum score (10), indicating hesitation or uncertainty about the sustainable use of capital in the area.

## Conclusions

### Agricultural Sector Professionals

Evidence from the survey indicates that the implementation of the LIFE ARCPROM project generated a positive economic impact for professionals in the agricultural sector. Although financial losses attributable to bear presence were not completely eliminated, their reduction—combined with increased investment in prevention—reflected a gradual shift in community attitudes and confirmed the effectiveness of the intervention. Average annual damage costs decreased from €988.82 to €815.63 (a 17.5% decline), a change likely associated with the adoption of more effective preventive measures that reduced unnecessary expenditures and promoted risk mitigation through targeted incentives and information. At the same time, average expenditure on preventive actions increased from €483.73 to €674.47 (a 39% rise), suggesting that professionals responded to project guidance by allocating more resources to protective infrastructure and practices.

From a social and psychological perspective, levels of fear and anxiety associated with potential bear encounters were moderate. Fewer than 40% of respondents indicated that such concerns limited their social or professional activities. Overall, the acceptance of the LIFE ARCPROM project among local communities was positive, although differences were observed depending on the level of professional involvement and the nature of human–bear interactions.

Findings relating to contribution further underscored this momentum: a substantial proportion of agricultural professionals expressed willingness to support the continuation of coexistence measures, both financially and through in-kind contributions. While most financial commitments were modest, preferences consistently favoured direct and effective measures such as fencing, livestock guard dogs, and waste management. This willingness illustrated a shift from reactive conflict management towards proactive coexistence, one of the project's notable achievements.

In summary, agricultural-sector professionals perceived LIFE ARCPROM as an important instrument for strengthening human–bear coexistence through practical and financially accessible management practices. The rise in prevention-related investment, growing levels of social acceptance, and emerging entrepreneurial perspectives signalled progress towards more sustainable and coexistence-oriented practices, even though full sector-wide integration had not yet been realised.

### Local Business

Summarising the impact of the project on local businesses, it was found that the presence of the brown bear and the interventions of LIFE ARCPROM functioned more as a driver of local identity and differentiation than as a threat. Economic indicators showed neutral to positive trends in sectors such as tourism, entrepreneurship, and income, while social factors revealed that risks were acknowledged but did not deter business activity. Tourism-related enterprises in particular recognised the project as a lever for visibility and access to new markets, while the positive stance toward the RESPECT scheme indicated a willingness to align with sustainable development standards. Overall, the project contributed to shaping a framework in which wildlife is recognized as a developmental asset, strengthening local economic resilience and opening prospects for innovative services.

### Visitors/ Customers

From an economic perspective, visitors assessed the presence of the brown bear as a positive factor, closely linking it to enhanced tourism, local community benefits, and employment opportunities. Rather than perceiving the species as a threat, respondents associated it with tangible economic gains, reinforcing the argument that biodiversity—when combined with adequate infrastructure, policy support, and social

acceptance—can act as a driver of sustainable regional development. They also recognised that bear presence increases the appeal of the area for environmentally conscious travellers, adding value to tourism services and experiences.

At the same time, coexistence with brown bears generated mixed emotional responses. Most visitors expressed ambivalence, combining moderate levels of fear and anxiety with feelings of excitement and admiration. Roughly half of the respondents stated that they avoided certain social or recreational activities in forested areas out of fear of encountering a bear. This finding highlights the importance of providing targeted visitor information, managing perceived risks, and enhancing individuals' sense of control through education and awareness campaigns. Importantly, it should be noted that only a minority of visitors had ever encountered a bear directly, suggesting that perceptions were shaped more by the fear of the unknown than by actual experience.

Finally, visitors evaluated the LIFE ARCPROM project very positively, acknowledging its role in promoting coexistence between humans and bears and in supporting tourism and local businesses. The project was identified as a valuable tool for informing the public, alleviating fear, and positioning all the three National Parks as a responsible and sustainable destination.

## Annexes

- I. LIFE ARCPROM Survey: Experiences and Perspectives of Agricultural Sector Professionals on Human–Bear Coexistence in 3 National Parks in Greece
- II. LIFE ARCPROM Survey: Local Businesses' Perceptions of Brown Bear Presence and Human-Bear Coexistence in 3 National Parks in Greece
- III. LIFE ARCPROM Survey: Visitors' & Customers' Perceptions of Brown Bear Presence and Human-Bear Coexistence in 3 National Parks in Greece

### Introduction

The Apennine brown bear (*Ursus arctos marsicanus*) is one of the most threatened mammal populations in Europe and a priority species for conservation under the LIFE programme. In the last fifteen years, the Maiella National Park (MNP) has become a key expansion area for the species, with bears establishing a stable presence. This process has ecological significance, as the bear's return contributes to the integrity of the Park's ecosystems, reinforcing its role as a functional and complete ecological unit. At the same time, it raises important socio-economic questions regarding the interaction between conservation measures and the well-being of local communities.

In this context, Action D8 of LIFE ARCPROM aims to assess the socio-economic impacts of bear conservation across the four project areas, including MNP. The action evaluates both direct and indirect effects, such as employment opportunities, business diversification, tourism development, and reduction of damages and prevention costs, while also addressing broader social outcomes such as conflict mitigation, community security, stakeholder empowerment, and knowledge transfer. These dimensions are crucial for determining how conservation interventions translate into tangible and perceived benefits for local populations, and how they influence the long-term acceptance and sustainability of conservation strategies.

The evaluation of the socio-economic impact in MNP is particularly relevant given its dual role as both a conservation stronghold and a human-inhabited territory. Monitoring perceptions, costs, and benefits provides evidence on whether the presence of the Apennine brown bear is perceived as a constraint or as an added value for local development. This assessment directly contributes to the LIFE programme's requirement to monitor socio-economic effects of concrete conservation actions, and it addresses Threat No. 3 identified in the project: the need to increase awareness of the importance of *Ursus arctos marsicanus* conservation and the engagement of key stakeholders.

By documenting the impacts of bear preservation, Action D8 in MNP aims to produce knowledge that supports adaptive management, strengthens trust between institutions and communities, and ensures that conservation outcomes are integrated with local socio-economic development. This alignment is essential for the long-term viability of the species and for the broader objectives of the LIFE programme in promoting biodiversity conservation alongside resilient rural economies.

### Methodology

The methodology adopted for the assessment of the socio-economic impact of Apennine brown bear preservation in the Maiella National Park (MNP) followed the framework established under Action D8 of the LIFE ARCPROM project. In line with the objectives of this Action, the approach was designed to identify, measure, and compare the anticipated socio-economic outcomes of conservation actions with their actual effects on local communities and economic sectors.

The process in MNP was developed in three main steps:

- Identification of relevant Concrete Conservation Actions (CCAs).

As a first step, the CCAs and, possibly, raising-awareness/communication actions most directly linked to potential socio-economic impacts were selected. In MNP, these were Actions C1, C2, C5, C7, C9, C10, and E5. Each of these actions was considered to have direct or indirect implications for local economic activities, community perceptions, and stakeholder engagement, thus representing suitable entry points for assessing socio-economic change.

- Use of action results to assess socio-economic issues.

The results and outputs of the selected actions were then analyzed to highlight issues potentially contributing to socio-economic impacts. This step enabled the identification of both direct effects (e.g., reduction of damage prevention costs, enhancement of tourism attractiveness, diversification of local products and services) and indirect effects (e.g., community attitudes, trust in institutions, conflict mitigation, knowledge dissemination).

- Comparison of expected and actual impacts.

Finally, the expected socio-economic impacts, as defined in the planning stage of the project, were compared with the actual impacts observed in MNP. This comparison provided the basis for evaluating the effectiveness and relevance of the conservation measures, as well as for understanding their contribution to the sustainability of both biodiversity protection and local socio-economic development.

It is important to note that in MNP, no additional questionnaires were administered under Action D8. This decision was taken because socio-economic surveys and perception studies had already been carried out in the framework of Actions D1, D3, and D5. These earlier surveys provided robust baseline information on community attitudes, stakeholder perceptions, and conflict-related issues, thereby avoiding duplication of efforts. Instead, Action D8 in MNP relied on the integration of existing data from these surveys with the results of the identified conservation and communication actions.

This combined approach ensured that the socio-economic assessment was both efficient and comprehensive, linking project deliverables to local community dynamics while respecting the overall methodological framework of Action D8.

## Results

The concrete conservation actions identified as relevant in term of socio-economic impact are: C1 (Stakeholder consultation and involvement); C5 (Operation, equipment and capacity building of Bear Emergency Teams); C6 (Mobilization of volunteers); C7 (Installation of bear-proof constructions and of electric fences into/near human settlements); C9 (Installation of special aversive means in hot-spots of human-bear interference); C10 (Bear-friendly labelling in products and services) and E5 (Environmental education activities). More specifically, the activities identified to be relevant are the following:

- Action C1: platform institution/operation and workshop organized in the territory.
- Action C5-C7-C9: bear damage prevention and dialogue with people.
- Action C6: implementation of the Bear Tour to raise awareness of locals and tourists.
- Action C10: involvement of key stakeholders and creation of a bear-related (and more widely ecosystem-related) marketing opportunity.
- Action E5: creation of a Bear Trail to raise awareness and also create a tool capable of pivoting local ecosystem/bear-respectful tourism

Based on the activities actually implemented in each of the above-reported actions, the most relevant socio-economic impact themes refer to Governance & empowerment (inclusion, participation, trust-building); conflict reduction (through dialogue and action plan); economic opportunities (cooperatives' activities, potential tourism spin-offs); social capital & awareness (community engagement, knowledge sharing). The following 8 indicators have been individuated to assess the socio-economic impact of the LIFE ARCPROM (Table 1).

- *Stakeholder Inclusion and Representation*: broad stakeholder involvement is an indicator of social capital and participatory governance, which can reduce conflict and increase long-term acceptance of conservation policies (indirect socio-economic benefit).
- *Participatory Decision-Making*: participatory governance can improve trust in institutions, support empowerment of local actors, and make conservation outcomes more legitimate, which can indirectly influence socio-economic resilience.
- *Economic diversification and opportunities*: Direct economic impact through market differentiation, branding, and potential income increase for producers. Protecting bears has indirect socio-economic returns linked to eco-tourism and territorial branding.
- *Promotion and market visibility*: Improved visibility and market positioning of local products, potential for increased tourism attractiveness and consumer demand.
- *Local Community Engagement*: greater community knowledge and awareness can reduce perceived risks, lower resistance to coexistence measures, and foster opportunities (e.g., in eco-tourism, education).
- *Conflict Mitigation and Coexistence Planning*: Reduced human-bear conflict translates into fewer damages and costs for prevention/compensation; it also strengthens predictability and transparency in management. Bear Friendly practices promote prevention, reducing bear-related damages and associated costs. Finally, the implementation of actions aimed at improving positive attitudes toward bears stimulates high tolerance that, in turn, reduces potential conflicts, strengthens community–Park relations, and improves the social sustainability of conservation.
- *Capacity-Building and Funding Spin-Offs*: capacity building implies enhanced skills and knowledge produce long-term socio-economic resilience and ability to innovate. Capacity building and institutional strengthening are socio-economic assets, as they reduce future costs of conflict management and enhance resilience. Funding spin-offs imply direct economic impact (temporary jobs for cooperatives, new activities for the tourism sector) + indirect impacts (increased knowledge, new business opportunities linked to bear-related activities).
- *Knowledge Transfer and Awareness-Raising*: this approach fosters shared responsibility, local empowerment, and potentially more effective long-term governance—all of which have indirect socio-economic benefits.

Table 1. Indicators used to assess the socio-economic impact of the LIFE ARCPROM in the Maiella National Park

Key issues	Actions	Expected socio-economic outcome	Reported socio-economic outcome	Traffic light evaluation
Stakeholder inclusion and representation	C1	Involvement of key stakeholders and raising awareness about the importance of a participatory process	25% of the targeted stakeholder organizations actively participated to the platforms and stakeholders actively collaborated to implement the drafted plan. Some key stakeholders actively participated while for other a renewed involvement effort is required.	
	C10	Involvement of a significant number of beekeepers and farmers spread in the Area of Interest, including the high human-bear conflict risk zone individuated with Action A1	45% of interested beekeepers and 34% of interested farmers were involved; the distribution of BF production stations corresponds closely with both bear presence and high-risk zones for human-bear conflict, especially in areas prone to beehive damage; a network of Bear-Friendly producers was spontaneously established	
Participatory Decision-Making	C1	Drafting of a plan to reduce human-bear conflicts in MNP through the inputs of stakeholders	Action plan drafted including timing, things to do and responsibilities	
	C10	Involvement of target stakeholders and promotion of their active participation in the building of the Bear-friendly label	Targeted stakeholders actively participated during all the phases including the regulation drafting and the drafting of a Bear-friendly products marketing plan	
Economic diversification and opportunities	C10	Market differentiation through the establishment of "special" products (at least 50) labelled with the Bear Friendly label and increased income for Bear Friendly producers.	More than 70 products labelled with the Bear Friendly logo; 88.2% of the producers rated their experience positively; 41.2% observed increased customer interest, 41.2% did not, indicating varied market responses; nearly half reported moderate to significant business growth, however most of the producers mainly valued the recognition of their commitment to sustainability	

Key issues	Actions	Expected socio-economic outcome	Reported socio-economic outcome	Traffic light evaluation
	C5, C7, C9	Prevent illegal killing of problematic bears in order to safeguard the bear as an economic and ecological capital	Interventions on three problematic bears prevented potential illegal killings and preserved reproductive females and this ensures continuity of the bear population, which is an ecological asset with long-term socio-economic value (ecosystem services, tourism, cultural identity).	
Promotion and market visibility	C10	Creation of a Bear-Friendly logo, creation of dissemination material and implementation of local events to promote bear-friendly products	A colourful catchy logo was created; the leaflet foreseen in the project as well as additional leaflets were produced; a diversified set of supports to identify the Bear Friendly producers was delivered to granted producers; a 12-points promotional plan was drafted (8 points already implemented); MNP funds have been used to promote BF products during specific regional/national events.	
Local Community Engagement	C1	Inform local community about the platform work through the implementation of 6 workshops	More than 110 individual people/representative of organizations were reached and gave feedback on the platform work; One of the workshops addressed high-school students involving young generations (i.e. stakeholders-to-be) in the platform work	
	C6	Mobilize volunteers to implement actions aimed at reducing human-bear conflicts	Through the implementation of the Bear Tour not only volunteers were involved but also tourists and locals were reached and sensitized on the themes related to Apennine brown bear conservation; A total of about 2000 people were approached through this action	

Key issues	Actions	Expected socio-economic outcome	Reported socio-economic outcome	Traffic light evaluation
	E5	Establishment of a thematic trail to promote coexistence and promotion of the Bear Trail among teachers	An improved Bear Trail was created using MNP own funds; the trail was promoted not only among teachers but also among touristic cooperatives and guides; the locals have been involved and informed about the trail through the implementation of events and the distribution of a specific leaflet	
	E5	Establishment of a thematic trail to promote coexistence and promotion of the Bear Trail among teachers	The establishment of the Bear Trail stimulated local enterprises in realizing bear-related events; The municipality of Campo di Giove used the Bear Trail as the scenario for events and festivals also related to the inclusion of disabled people.	
Conflict Mitigation and Coexistence Planning:	C1	Reduction of conflicts through the active involvement of key stakeholders and the drafting of a plan to reduce human-bear conflicts in MNP	Action plan drafted including timing, things to do and responsibilities; Stakeholders started to collaborate the one with the other to work together toward human-bear conflict reduction.	
	C5, C7, C9	Reduction of bear damages through the distribution of 15 e-fences and 10 iron protections and through the use of Critter Gitter devices.	20 e-fences, 15 iron protections and 11 Critter Gitters were distributed, protecting 40 chicken coops; e-fences and iron protections proved to be 100% effective; strong short- to medium-term effectiveness of Critter Gitters was detected.	
	C5, C7, C9	Improve community acceptance and social attitudes toward bear through the implementation of prompt BET interventions and the delivery of effective, user-friendly damage protection measures	Local residents proved to be generally positive toward prevention measures, especially low-maintenance ones (iron protections, Critter Gitters); Over 70% of residents expressed positive or neutral attitudes toward coexistence, often accepting damages as part of living with bears.	

Key issues	Actions	Expected socio-economic outcome	Reported socio-economic outcome	Traffic light evaluation
	C5	Improve effective and rapid-response interventions (at least 50)	173 BET interventions were actually implemented and this shows high demand but also strong institutional capacity building community trust in institutions, reducing frustration, and preventing escalation of conflicts into illegal actions (e.g., bear killings).	
	C10	Include stakeholders directly interested by bear-damages in order to promote good practices to reduce human-bear conflicts.	Inclusion of beekeepers, the SH category mostly affected by bear damages in term of economic loss; Inclusion of a wider range of stakeholders through the "ecosystem approach" and recognition of their crucial role in bear conservation	
Capacity-Building and Funding Spin-Offs	C1	Improve stakeholders awareness and knowledge on the Apennine brown bear and the importance of human-bear conflict reduction.	Stakeholders achieved knowledge and competences during the platform meetings; A group of stakeholders had the opportunity to start implement the actions foreseen in the plan thanks to a funding provided by WWF Italy	
	C10	Raise producers' knowledge on bears and raise their awareness- on the importance of bear preservation	4 training workshops were successfully implemented addressing both knowledge raising on bear biology and capacity building on the use of protection means and on the application of the bear-friendly bee-farming/cultivation practices.	
	C2, C5, C9	Improve protocols and skills of the Park personnel and purchase up-to date equipment	The LIFE ARCPROM Project provided modern equipment, procedures, and strategies that remain available beyond LIFE ARCPROM.	
	E5	Creation of a thematic trail to reduce human-bear conflicts and create a tool to be used by local touristic cooperatives	The Bear Trail establishment in Campo di Giove pivoted the Campo di Giove municipality to establish two additional thematic trails in the same area thus enriching the touristic offer in the Bear Trail area.	

Key issues	Actions	Expected socio-economic outcome	Reported socio-economic outcome	Traffic light evaluation
Knowledge Transfer and Awareness-Raising:	C1	Raise awareness and knowledge of stakeholders and citizens during the implementation of the platform work as well as workshops.	Representatives of 25% of the targeted stakeholders improved their knowledge and awareness during the platform meetings; More than 110 citizens/representative of organizations improved their knowledge and awareness during the workshops	
	C10	Raising awareness of locals through the use of the Bear Friendly products	A Bear Friendly logo that directly connects to Maiella National Park identity and Apennine bear symbolism was created; more than 70 products are spread in the Area of Interest (an area bigger than the MNP); products are promoted during specific regional/national events	
	C6	Mobilize volunteers to implement actions aimed at reducing human-bear conflicts	Through the implementation of the Bear Tour not only volunteers were involved but also tourists and locals were reached and sensitized on the themes related to Apennine brown bear conservation; A total of about 2000 people were approached through this action	
	E5	Establishment of a thematic trail to promote human-bear coexistence	The Bear Trail has been included in the touristic offer of local touristic cooperatives and guides; it is not only an environmental education tool but is also visited by tourist; it is used as the location for events and festival by local enterprises and by the Campo di Giove municipality	

Basing on the analysis of questionnaire administrated, the following relevant information can be used to assess the socio-economic impact of the LIFE-ARCPROM:

### **Survey Action D1**

#### *Adoption and Acceptance of Measures*

High willingness overall; iron protections and Critter Gitters preferred; e-fences less accepted due to maintenance burden and “fatigue.”

Relevance: Adoption is critical to ensure investments translate into real protection. If tools are abandoned (e.g., e-fences), project resources are wasted and bear-damage risk resurfaces.

#### *Perceived Effectiveness*

Iron protections & Critter Gitters (88–100% satisfaction); e-fences (~10%). Failures often linked to poor maintenance.

Relevance: Perception of effectiveness strongly influences sustained use. If people view measures as useless, they may stop maintaining them, leading to recurring damage and loss of trust in conservation programs.

#### *Attitudes Toward Bears*

More than 70% positive, ~25% neutral, 5% negative. Many accept bear damage as part of coexistence.

Relevance: Tolerance is a key socio-economic factor: it reduces conflict costs (complaints, political pressure, illegal killings). High acceptance creates a favourable environment for long-term coexistence policies.

#### *Alternative Solutions Proposed by Locals*

Non-lethal removal, artificial feeding (most common), relocation to another park.

Relevance: These suggestions show knowledge gaps and reliance on bear-focused rather than prevention-focused solutions. They reveal potential resistance to sustainable strategies and highlight the need for awareness campaigns and education.

#### *Behavioural & Cultural Shifts*

Post-COVID, more acceptance of wildlife; some locals framed bear predation as “natural” (“Bears must eat something”).

Relevance: Changes in perception can alter willingness to coexist, which has indirect socio-economic effects. Understanding such shifts helps anticipate future tolerance trends.

#### *Policy and Education Needs*

Locals propose feeding bears, showing ecological misconceptions. Need for school education and stakeholder engagement (C1 better than C9 surveys).

Relevance: Education and policy support are foundational for long-term socio-economic sustainability. Without changing attitudes and knowledge, short-term solutions risk collapse.

## **Survey Action D3**

### *Producer satisfaction and commitment*

88.2% positive experience with the Bear Friendly label.

94.1% no significant economic burden linked to participation.

*Relevance:* High satisfaction and low costs show that the initiative is socio-economically sustainable and attractive.

### *Market impact and business growth*

41.2% reported increased consumer interest thanks to the label (though another 41.2% saw no effect yet).

47.1% noted moderate or significant business growth linked to the network.

76.5% value sustainability recognition as the main benefit.

*Relevance:* These data provide evidence of emerging market benefits, reputational gains, and potential for long-term economic impact.

### *Effectiveness of support tools (capacity building)*

88.2% found promotional material useful.

58.8% rated workshops as very useful/exhaustive; 23.5% as useful but insufficient.

*Relevance:* Capacity building and institutional support are seen as effective, a key socio-economic enabler for rural development and conflict prevention.

### *Future perspectives and willingness to invest*

100% intend to renew membership.

64.7% willing to contribute financially to future initiatives.

82.3% willing to help expand the network.

*Relevance:* Demonstrates strong sustainability, potential for financial autonomy, and scaling capacity—clear socio-economic benefits.

### *Producers' suggestions (qualitative insights)*

Recurring themes:

Marketing & promotion (social media, fairs, visibility).

Networking & events (exchange with other Parks, national fairs).

Collaboration & supply chain (joint sales point, synergies).

Awareness & education (local communities, schools, tourists).

Economic sustainability (need for tangible economic return).

*Relevance:* These show producers' own vision of how the label can maximize socio-economic impacts (better markets, stronger branding, local identity).

### *Strategic recommendations from producers*

Integrated sales system/e-commerce.

Monitoring system for real economic impact.

Expansion of educational initiatives.

*Relevance:* Provides concrete pathways for increasing socio-economic impacts and ensuring accountability.

#### Awareness of EU funding

58.8% fully aware the action is EU-funded; 41.2% somewhat aware.

*Relevance:* Indicates that the project also contributes to EU visibility and local understanding of EU-added value.

#### **Survey Action D5**

##### Social acceptance of bear presence

In 2022, 91% of respondents were happy to coexist with bears; positive attitudes remained high in 2024.

*Relevance:* A high level of acceptance reduces potential for conflict, making conservation measures more cost-effective and sustainable.

##### Knowledge and awareness trends

2022: knowledge gaps identified (bear behaviour, waste management, educational opportunities).

2024: increased knowledge, with 35% rating their understanding as good or excellent.

*Relevance:* Better knowledge reduces risky behaviours, prevents damages, and strengthens the socio-economic resilience of local communities.

##### Role of the Park as a trusted institution

83% of respondents trust the Park as their primary source of reliable information.

*Relevance:* Trust in institutions facilitates acceptance of prevention measures, cooperation, and efficient use of resources.

##### Stakeholder Platform outcomes

From initial hesitance to 100% satisfaction by the end of the project.

Valued for actionable solutions, enhanced knowledge, and collaborative relationships.

*Relevance:* Strengthened governance capacity, empowerment of local actors, and creation of durable networks that can generate indirect socio-economic benefits (e.g. joint initiatives, reduced conflicts).

##### Community participation

Sample grew from 70 responses in 2022 to 137 in 2024, including both residents and tourists.

*Relevance:* Broader community engagement reflects stronger involvement, social cohesion, and the potential to shape behaviours that impact economic activities like tourism and local services.

##### Workshops and educational activities

High appreciation (83% positive feedback); collaboration with WWF Italy reinforced efforts.

*Relevance:* Educational efforts directly support awareness, responsible behaviours, and potential growth of eco-tourism and educational services.

#### Alignment with stakeholder needs

The project reduced complexities in planning coexistence initiatives and provided a robust framework for future activities.

*Relevance:* Ensures continuity of conservation and socio-economic benefits beyond project lifetime.

## CONCLUSIONS

The socio-economic assessment of LIFE ARCPROM activities in the Maiella National Park (MNP) demonstrates that the project not only delivered the expected outputs but also generated broader and, in many respects, unexpected benefits. The conservation of the Apennine brown bear—an emblematic yet highly vulnerable species—proved to be a catalyst for local empowerment, community dialogue, and innovation in rural development.

A first, significant conclusion concerns the general acceptance of coexistence. Across surveys and interviews, a majority of residents expressed positive or at least neutral attitudes toward the bear, often recognising damages as part of sharing the territory. This high tolerance level, which exceeded expectations, reflects a cultural shift that may have been reinforced by the COVID-19 pandemic, during which people developed a stronger recognition of the role of wildlife in natural systems. The fact that only a small minority advocated for bear removal or feeding demonstrates that conflict potential, while not absent, is increasingly manageable. This cultural change has important socio-economic implications, as tolerance reduces the risk of retaliatory behaviours, fosters trust in institutions, and supports sustainable tourism and branding opportunities linked to coexistence.

The effectiveness and acceptance of prevention measures also emerged as a decisive factor. Iron protections and Critter Gitters were widely perceived as reliable, low-maintenance solutions, while e-fences were less accepted due to maintenance challenges and “fatigue.” The mixed perception of e-fences points to the need for tailored, context-specific solutions, but the overall willingness of people to use delivered tools was very high. This is socio-economically relevant, since proper adoption ensures that investments are not wasted, damages are prevented, and local trust in conservation authorities remains intact.

From an economic diversification perspective, the Bear Friendly label was a key initiative with results that overcome expectations. While the label did not dramatically increase market appeal or sales in the short term, it was strongly valued by producers as a form of recognition for their commitment to bear- and ecosystem-friendly practices. Producers appreciated the legitimacy and visibility that came with the label, and many expressed readiness to continue investing in and expanding the network. This suggests that the label’s main socio-economic contribution lies less in immediate market returns and more in reinforcing identity, sustainability credentials, and long-term competitiveness of local products. Over time, with more systematic promotion, integration in tourism initiatives, and monitoring of real economic impacts, the label could consolidate into a stronger marketing driver.

Another key conclusion is the strengthening of governance and trust through participatory platforms and educational actions. The stakeholder platform evolved from initial hesitance to a situation of full satisfaction, with participants valuing knowledge exchange, actionable solutions, and collaborative dynamics. Although some key stakeholders (e.g. some political organizations), did not actively participate, the overall functioning of the platform exceeded expectations. It became a space where institutions, local actors, and citizens could openly discuss coexistence, reducing tensions and promoting shared responsibility. This participatory governance model is a major socio-economic asset, as it improves decision-making legitimacy, empowers local actors, and creates durable networks that may support future initiatives beyond the LIFE project.

The role of the Park as a trusted institution also emerged as essential. High levels of trust in MNP as a reliable source of information reinforced the effectiveness of awareness campaigns, workshops, and education programmes. Such trust is socio-economically critical, as it translates into smoother cooperation, reduced conflict costs, and enhanced willingness of communities to invest in coexistence strategies.

Finally, the project's focus on capacity building, knowledge transfer, and volunteer mobilisation provided lasting socio-economic dividends. Through Bear Tours, the Bear Trail, and educational workshops, the project stimulated eco-tourism opportunities, enriched the local cultural offer, and fostered a new generation of citizens with stronger ecological awareness. These outcomes expand the socio-economic benefits of bear conservation beyond immediate damage prevention and into long-term rural resilience and identity.

In conclusion, while challenges remain—such as the need to improve the practicality of some prevention tools, to engage all relevant institutional stakeholders, and to strengthen the economic appeal of bear-friendly branding—the socio-economic impacts of LIFE ARCPROM in MNP clearly surpassed initial expectations. The project has consolidated coexistence attitudes, created durable governance mechanisms, and supported producers and communities in ways that align biodiversity conservation with sustainable development. These results demonstrate that investing in bear conservation is not only an ecological necessity but also a socially and economically viable strategy for the future of the territory.

# Annex I: LIFE ARCPROM Survey: Experiences and Perspectives of Agricultural Sector Professionals on Human–Bear Coexistence in 3 National Parks in Greece

Dear Participant,

This survey is conducted by the Faculty of Veterinary Medicine at the University of Thessaly within the framework of the international LIFE ARCPROM project, which aims to organize actions and apply preventive measures to reduce incidents of brown bears approaching human settlements.

Specifically, the main objectives of the project are:

- To address incidents of bears approaching residential areas.
- To minimize illegal practices such as the use of poisoned baits.
- To implement effective preventive measures against damage caused by large carnivores to agricultural production.

The purpose of this questionnaire is to investigate the main social and economic impacts, as well as the effects on the well-being of primary sector professionals (farmers, livestock breeders, beekeepers, etc.), arising from the approach of brown bears to villages and professional facilities.

Your participation is **voluntary**, and there will be no consequences if you choose not to participate or if you decide to withdraw from the study at any stage. The information you provide will remain strictly confidential, and anonymity will be guaranteed in full compliance with the General Data Protection Regulation (EU) 2016/679. All personal data will be treated as confidential, with access strictly limited to the University of Thessaly research team.

If you choose not to participate, this will not affect you in any way. You may withdraw from the survey at any time, even if you had initially agreed to participate.

Your contribution is very important for the successful completion of this study. Completing the questionnaire will take approximately 15 minutes. We thank you in advance for your time and cooperation.

**Please mark with an X whether you agree or not to participate in the study:**

Παρακαλώ σημειώστε με ένα X εάν δέχεστε ή όχι να συμμετάσχετε στη μελέτη.

- - I agree to participate in the study.
- - I do not agree to participate in the study.

## QUESTIONNAIRE

**Q1. Questionnaire Code (to be completed by the researcher):** \_\_\_\_\_

## **SECTION 1. DEMOGRAPHIC CHARACTERISTICS AND GENERAL INFORMATION**

**Q2.** Year of birth: (please fill in) 19\_\_\_\_\_

**Q3.** Gender: (please select)

Male

Female

**Q4.** Nationality: (please select)

Greek

Other

**Q5.** What is your marital status? (please select)

Single, living alone

Cohabiting or married

Divorced or separated

**Q6.** Number of people in your household (including yourself):

Age group                      Number of persons

Under 16 years

Between 17 and 64 years

Over 65 years

**Q7.** What is your highest level of education? (please select)

- No schooling / Primary education
- Lower secondary education (Junior High School)
- Upper secondary education (Senior High School)
- Post-secondary, non-university education (e.g., Vocational training)
- University degree (Bachelor's, TEI/AEI)
- Postgraduate education (Master's, PhD)

**Q8.** What has been your main field of employment over the last 12 months? (please select)

- Livestock breeding
- Beekeeping
- Agriculture
- Other (please specify): \_\_\_\_\_

**Q9.** Please state your place of work (village, town, area) during the last 12 months:

---

**Q10.** What was your net annual family income (after taxes and deductions) during the last 12 months? (please select)

- Less than €10,000
  - €10,001 – €20,000
  - > €20,001
- 

## **SECTION 2. ECONOMIC IMPACTS OF BEAR PRESENCE IN THE AREA**

**Q11.** a. Please indicate whether you experienced any damage to your main occupation from the presence of brown bears before the implementation of LIFE ARCPROM actions (i.e., in the last decade until 2019). [More than one option may apply]

- Transmitted diseases and related livestock deaths
- Attacks on herds
- Attacks on beehives
- Crop damage
- Damage to buildings/equipment
- Destruction of stocks and products
- Traffic or other accidents

b. For the above damages, please specify the type of damage and the cost in euros as accurately as possible.

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**Q12.** a. Please indicate whether you experienced any damage to your main occupation from the presence of brown bears after the implementation of LIFE ARCPROM actions (i.e., from 2019 until today). [More than one option may apply]

- Transmitted diseases and related animal deaths
- Attacks on herds or beehives
- Crop damage
- Damage to buildings/equipment
- Destruction of stocks and products
- Traffic or other accidents

b. For the above damages, please specify the type of damage and the cost in euros as accurately as possible.

---

**Q13.** a. Please indicate whether you adopted any preventive or mitigation measures in your main occupation before the implementation of LIFE ARCPROM actions (i.e., in the last decade until 2019). [More than one option may apply]

- Purchase of specialized protective equipment against bears (e.g., deterrents, protective fencing, etc.)
- Technical works for repairing damages
- Changes in workforce

b. For the above measures, please specify the type of measure and the cost in euros as accurately as possible.

---

**Q14.** a. Please indicate whether you adopted any preventive or mitigation measures in your main occupation after the implementation of LIFE ARCPROM actions (i.e., from 2019 until today). [More than one option may apply]

- Purchase of specialized protective equipment against bears (e.g., deterrents, protective fencing, etc.)
- Technical works for repairing damages
- Changes in workforce

b. For the above measures, please specify the type of measure and the cost in euros as accurately as possible.

---

**Q15.** On a scale of 1–10 (where 1 = extremely negative effect and 10 = extremely positive effect), to what extent do you believe that the existence of brown bear habitat in your area affects the following activities? (please rate each item)

Activity	1	2	3	4	5	6	7	8	9	10
Your work										
Employment opportunities										
Tourism development										
Entrepreneurship opportunities (e.g., tourism or services)										
Local incomes										
Attracting investment										

**SECTION 3. SOCIAL IMPACTS OF BEAR PRESENCE**

**Q16.** Do you feel any of the following emotions, and to what degree, when you think about the possibility of encountering a bear in your area?

Scale: 1 = Not at all, 2 = A little, 3 = Neutral, 4 = Quite a lot, 5 = Very much

- Fear
- Anxiety
- Anger
- Distress
- Joy
- Excitement

**Q17.** Have you ever seen a bear in your area?

- Never
- Rarely
- Occasionally
- Several times
- Many times

**Q18.** a. Have you ever had close contact with a bear?

- Yes
- No

b. If yes, did this contact have any consequences?

- Required hospitalization or medical care
- Permanent damage to health
- Job loss or negative change in work position
- Long-term absence from work

**Q19.** Have your social relationships or leisure activities been restricted due to fear of encountering a bear?

Thinking about a bear encounter, do you...

Yes

No

On the contrary,  
I seek it because I would like  
to encounter a bear

Avoid specific places in the area

Avoid going on long walks

Avoid recreational forest walks

Thinking about a bear encounter, do you...

Yes

No

On the contrary,  
I seek it because I would like  
to encounter a bear

Avoid social visits during late-night or early-morning hours

#### **SECTION 4. CONTRIBUTION OF THE LIFE ARCPROM PROJECT**

**Q20.** a. Have you been informed about the LIFE ARCPROM project or participated in any of its actions?

- Yes
- No

b. If yes, please specify (time and type of activity): \_\_\_\_\_

\_\_\_\_\_

**Q21.** On a scale of 1–10 (where 1 = extremely negative effect and 10 = extremely positive effect), to what extent do you believe that the actions of LIFE ARCPROM as a whole have influenced the following? (please rate each item)

- Your work
- Employment in the area
- Tourism development in the area
- Entrepreneurship opportunities (e.g., tourism or services)
- Local incomes
- Attracting investment in the area
- Policy decision-making in the area
- Sense of safety in the area
- Trust among local stakeholders
- Education of residents and visitors

**Q22.** Which of the following actions of the LIFE ARCPROM project do you consider most effective in reducing negative impacts of bear presence in the area? (please select all that apply)

- Training, awareness-raising, and information activities for human–bear coexistence
- Electric or specialized fencing
- Bear-proof waste bins
- Livestock-guarding dogs
- Bear-friendly certification for tourism sites and businesses
- Other (please specify): \_\_\_\_\_

**Q23.** a. Suppose the state implements a five-year program of measures to improve and harmonize human–bear coexistence in your area. The program would aim both to protect the bear population and to mitigate negative impacts of bear–human encounters. Would you be willing to contribute financially to support such a program?

- Yes

- No

b. If yes, what would be the maximum annual amount you would contribute?

- Up to €5
- €6 - €20
- €21 - €50
- > €50

c. If yes, which activity would you prefer your contribution to support?

- Training, awareness-raising, and information activities for human–bear coexistence
- Electric or specialized fencing
- Bear-proof waste bins
- Livestock-guarding dogs
- Bear-friendly certification for tourism sites and businesses
- Other (please specify): \_\_\_\_\_

**END OF SURVEY**

**THANK YOU VERY MUCH FOR YOUR PARTICIPATION!**

## Annex II: LIFE ARCPROM Survey: Local Businesses' Perceptions of Brown Bear Presence and Human-Bear Coexistence in 3 National Parks in Greece

**Dear Participant,**

This survey is conducted by the Faculty of Veterinary Medicine at the University of Thessaly within the framework of the international LIFE ARCPROM project, which aims to organize actions and apply preventive measures to reduce incidents of brown bears approaching human settlements.

Specifically, the main objectives of the project are:

- To address incidents of bears approaching residential areas.
- To minimize illegal practices such as the use of poisoned baits.
- To implement effective preventive measures against damage caused by large carnivores to agricultural production.

The purpose of this questionnaire is to investigate the main social and economic impacts, as well as the effects on the well-being of secondary sector professionals located within the boundaries of the National Park, arising from the approach of brown bears near settlements and business premises.

Your participation is **voluntary**, and there will be no consequences if you choose not to participate or if you decide to withdraw from the study at any stage. The information you provide will remain strictly confidential, and anonymity will be guaranteed in full compliance with the General Data Protection Regulation (EU) 2016/679. All personal data will be treated as confidential, with access strictly limited to the University of Thessaly research team.

If you choose not to participate, this will not affect you in any way. You may withdraw from the survey at any time, even if you had initially agreed to participate.

Your contribution is very important for the successful completion of this study. Completing the questionnaire will take approximately 15 minutes. We thank you in advance for your time and cooperation.

**Please mark with an X whether you agree or not to participate in the study:**

Παρακαλώ σημειώστε με ένα X εάν δέχεστε ή όχι να συμμετάσχετε στη μελέτη.

- - I agree to participate in the study.
- - I do not agree to participate in the study.

### QUESTIONNAIRE

**Q1. Questionnaire Code (to be completed by the researcher):** \_\_\_\_\_

**SECTION 1. DEMOGRAPHIC CHARACTERISTICS AND GENERAL INFORMATION**

**Q2.** Year of birth: (please fill in) 19\_\_\_\_\_

**Q3.** Gender: (please select)

Male

Female

**Q4.** Nationality: (please select)

Greek

Other

**Q5.** What is your marital status? (please select)

Single, living alone

Cohabiting or married

Divorced or separated

**Q6.** Number of people in your household (including yourself):

Age group	Number of persons
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Under 16 years	
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Between 17 and 64 years	
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Over 65 years	
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**Q7.** What is your highest level of education? (please select)

- Master Degree
- Bachelor Degree
- High School
- Other/secondary or less

**Q8.** What is the main sector of your business? (please select)

- Commerce
- Transport / Storage
- Food Service / Leisure (Catering, Recreation)
- Tourism Activities
- Health and Social Care
- Other (please specify): \_\_\_\_\_

**Q9.** Please state your place of work (village, town, area) during the last 12 months:

Place of work (village, town, area): \_\_\_\_\_

**Q10.** What was your net annual family income (after taxes and deductions) during the last 12 months? (please select)

- Less than €10,000
- €10,001 – €20,000
- €20,001 –€25,000
- > €25,000

**SECTION 2. ECONOMIC IMPACTS OF BEAR PRESENCE IN THE AREA**

**Q11.** a. Please indicate whether you experienced any damage or loss to your business operations due to the presence of brown bears before the implementation of LIFE ARCPROM actions (up to 2019). (*More than one option may apply.*)

- Loss of customers or reduced footfall/visitation
- Temporary closure/interruption of business operations
- Destruction of stocks and products
- Damage to buildings/equipment
- Traffic or other accident

b. For the damages you identified above, please specify the type of damage and the cost in euros as accurately as possible.

\_\_\_\_\_

\_\_\_\_\_

**Q12.** a. Please indicate whether you experienced any damage or loss to your business operations due to the presence of brown bears after the implementation of LIFE ARCPROM actions (i.e., from 2019 to the present). (*More than one option may apply.*)

- Loss of customers or reduced footfall/visitation
- Temporary closure/interruption of business operations
- Destruction of stocks and products
- Damage to buildings/equipment
- Traffic or other accident

b. For the damages you identified above, please specify the type of damage and the cost in euros as accurately as possible.

\_\_\_\_\_

\_\_\_\_\_

**Q13.** a. Please indicate whether you adopted any preventive or mitigation measures in your business before the implementation of LIFE ARCPROM actions (up to 2019). *(More than one option may apply.)*

- Purchase of specialised protective equipment against bears (e.g., deterrents, protective fencing)
- Technical works to repair damage
- Changes in workforce

b. For the measures you identified above, please specify the type of measure and the cost in euros as accurately as possible.

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**Q14.** a. Please indicate whether you adopted any preventive or mitigation measures in your business after the implementation of LIFE ARCPROM actions (from 2019 to the present). *(More than one option may apply.)*

- Purchase of specialised protective equipment against bears (e.g., deterrents, protective fencing)
- Technical works to repair damage
- Changes in workforce

b. For the measures you identified above, please specify the type of measure and the cost in euros as accurately as possible.

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**Q15.** On a scale from 1 to 10 (where 1 = extremely negative effect and 10 = extremely positive effect), to what extent do you believe that the presence of brown bear habitat in your area affects the following? *(Please rate each item.)*

Activity	1	2	3	4	5	6	7	8	9	10
Your business										
Employment opportunities										
Tourism development										
Entrepreneurship opportunities (e.g., tourism or services)										
Local incomes										
Attracting investment										

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### SECTION 3. SOCIAL IMPACTS OF BEAR PRESENCE

**Q16.** Do you feel any of the following emotions, and to what degree, when you think about the possibility of encountering a bear in your area?

Scale: 1 = Not at all, 2 = A little, 3 = Neutral, 4 = Quite a lot, 5 = Very much

- Fear
- Anxiety
- Anger
- Distress
- Joy
- Excitement

**Q17.** Have you ever seen a bear in your area?

- Never
- Rarely
- Occasionally
- Several times
- Many times

**Q18.** a. Have you ever had close contact with a bear?

- Yes
- No

b. If yes, did this contact have any consequences?

- Required hospitalization or medical care
- Permanent damage to health
- Job loss or negative change in work position
- Long-term absence from work

**Q19.** Have your social relationships or leisure activities been restricted due to fear of encountering a bear?

<u>Thinking about a bear encounter, do you...</u>	<u>Yes</u>	<u>No</u>	<u>On the contrary,</u> <u>I seek it because I would like</u> <u>to encounter a bear</u>
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Avoid specific places in the area

Avoid going on long walks

Avoid recreational forest walks

Avoid social visits during late-night or early-morning hours

#### **SECTION 4. CONTRIBUTION OF THE LIFE ARCPROM PROJECT**

**Q20.** a. Have you been informed about the LIFE ARCPROM project or participated in any of its actions?

- Yes
- No

b. If yes, please specify (time and type of activity): \_\_\_\_\_

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**Q21.** On a scale of 1–10 (where 1 = extremely negative effect and 10 = extremely positive effect), to what extent do you believe that the actions of LIFE ARCPROM as a whole have influenced the following? (please rate each item)

- Employment in the area
- Tourism development in the area
- Entrepreneurship opportunities (e.g., tourism or services)
- Local incomes
- Attracting investment in the area
- Policy decision-making in the area
- Sense of safety in the area
- Trust among local stakeholders
- Education of residents and visitors

**Q22.** Which of the following actions of the LIFE ARCPROM project do you consider most effective in reducing negative impacts of bear presence in the area? (please select all that apply)

- Training, awareness-raising, and information activities for human–bear coexistence
- Electric or specialized fencing
- Bear-proof waste bins
- Livestock-guarding dogs
- Bear-friendly certification for tourism sites and businesses
- Other (please specify): \_\_\_\_\_

**Q23.** a. Suppose the state implements a five-year program of measures to improve and harmonize human–bear coexistence in your area. The program would aim both to protect the bear population and to mitigate negative impacts of bear–human encounters. Would you be willing to contribute financially to support such a program?

- Yes
- No

b. If yes, what would be the maximum annual amount you would contribute?

- Up to €5
- €6 - €20
- €21 - €50
- > €50

c. If yes, which activity would you prefer your contribution to support?

- Training, awareness-raising, and information activities for human–bear coexistence
  - Electric or specialized fencing
  - Bear-proof waste bins
  - Livestock-guarding dogs
  - Bear-friendly certification for tourism sites and businesses
  - Other (please specify): \_\_\_\_\_
- 

**END OF SURVEY**

**Thank you very much for your participation!**

## Annex III: LIFE ARCPROM Survey: Visitors' & Customers' Perceptions of Brown Bear Presence and Human-Bear Coexistence in 3 National Parks in Greece

Dear Participant,

This survey is conducted by the Faculty of Veterinary Medicine at the University of Thessaly within the framework of the international LIFE ARCPROM project, which aims to organize actions and apply preventive measures to reduce incidents of brown bears approaching human settlements.

Specifically, the main objectives of the project are:

- To address incidents of bears approaching residential areas.
- To minimize illegal practices such as the use of poisoned baits.
- To implement effective preventive measures against damage caused by large carnivores to agricultural production.

The purpose of this questionnaire is to investigate the social and economic impact of brown bear presence within the National Park, as reported by visitors to the area

Your participation is **voluntary**, and there will be no consequences if you choose not to participate or if you decide to withdraw from the study at any stage. The information you provide will remain strictly confidential, and anonymity will be guaranteed in full compliance with the General Data Protection Regulation (EU) 2016/679. All personal data will be treated as confidential, with access strictly limited to the University of Thessaly research team.

If you choose not to participate, this will not affect you in any way. You may withdraw from the survey at any time, even if you had initially agreed to participate.

Your contribution is very important for the successful completion of this study. Completing the questionnaire will take approximately 15 minutes. We thank you in advance for your time and cooperation.

**Please mark with an X whether you agree or not to participate in the study:**

Παρακαλώ σημειώστε με ένα X εάν δέχεστε ή όχι να συμμετάσχετε στη μελέτη.

- - I agree to participate in the study.
- - I do not agree to participate in the study.

### QUESTIONNAIRE

**Q1. Questionnaire Code (to be completed by the researcher):** \_\_\_\_\_

## SECTION 1. DEMOGRAPHIC CHARACTERISTICS AND GENERAL INFORMATION

**Q2.** Year of birth: (please fill in) 19 \_\_\_\_\_

**Q3.** Gender: (please select)

Male

Female

**Q4.** Nationality: (please select)

Greek

Other

**Q5.** What is your marital status? (please select)

Single, living alone

Cohabiting or married

Divorced or separated

**Q6.** Number of people in your household (including yourself):

Age group	Number of persons
-----------	-------------------

Under 16 years	
----------------	--

Between 17 and 64 years	
-------------------------	--

Over 65 years	
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**Q7.** What is your highest level of education? (please select)

- Master Degree 12,5%

- Bachelor Degree 25,0%

- High School 62,5%

**Q8.** What is the main sector of your business? (please select)

- Commerce

- Transport / Storage

- Food Service / Leisure (Catering, Recreation)

- Tourism Activities

- Health and Social Care

- Other (please specify): \_\_\_\_\_

**Q9.** Please state your place of work (village, town, area) during the last 12 months:

Place of work (village, town, area): \_\_\_\_\_

**Q10.** What was your net annual family income (after taxes and deductions) during the last 12 months? (please select)

- < €10,000
- €10,001 – €20,000
- > €20,001

**Q11.** a. Have you visited this area before?

- Yes
- No

b. Please indicate your reason(s) for visiting:

- Tourism / Leisure
- Work
- Education / Learning
- Other

c. Please indicate how often you typically visit this area:

- Every five years
- Annually
- Every six months
- More frequently

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## **SECTION 2. ECONOMIC DIMENSIONS RELATED TO BEAR PRESENCE IN THE AREA**

**Q11.** a. Were you aware of the presence of brown bears in the area before your visit?

- Yes
- No

b. Was the presence of brown bears made clear to you during your visit (i.e., adequately signposted or communicated)?

- Yes
- No

If Yes, please specify the most influential source through which you learned about bear presence in the area:

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**Q12.** a. On a scale from 1 to 5, do you believe that the presence of brown bears in the area affects the amount of money you are willing to spend during your visit?

Scale: 1 = Not at all – I would spend the same amount regardless of bear presence; 5 = Very much – it would fully determine my spending behaviour. [Mark one: 1 / 2 / 3 / 4 / 5]

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b. If your answer above indicates any effect, how does it affect your spending?

- I would spend more, as I am interested in ecotourism and wildlife.
- I would spend less, due to concerns about personal safety.
- The total amount would not change, but the allocation would (e.g., organised activities, local products, guided tours, etc.).

**Q13.** a. Do you think that the presence of brown bears makes the area more attractive as a tourist destination?

- Not at all
- A little
- Moderately
- Quite a lot
- Very much

b. Would the presence of brown bears make you extend your stay in the area (and therefore increase your spending)?

- Yes, definitely
- Probably yes
- Neither / nor
- Probably not
- No, not at all

**Q14.** a. How likely are you to spend money on bear-related activities (e.g., ecotourism tours, visits to information centres, purchase of certified local products)?

- Not at all likely
- Slightly likely
- Moderately likely
- Very likely
- I will definitely do so

b. Would you prefer tourism services (e.g., accommodation, restaurants) that participate in organised actions to conserve the local bear population?

- Yes, definitely
- Probably yes
- It doesn't influence me
- Probably not
- No

c. Have you been informed about the meaning of the “RESPECT” label used for local products and services in the area?

- Yes
- No

If Yes, in what way? \_\_\_\_\_

d. Would you be willing to pay a higher price for tourism services (e.g., accommodation, restaurants) that carry the “RESPECT” certification?

- Yes, definitely
- Probably yes
- It doesn’t influence me
- Probably not
- No

e. Would you purchase local products or souvenirs that carry the bear symbol as part of the area’s identity?

- Yes, definitely
- Probably yes
- It doesn’t influence me
- Probably not
- No

f. Suppose there were a “bear-themed experience package” including activities and products related to brown bears. What is the maximum amount you would be willing to pay?

- Up to €20
- Up to €50
- Over €50

**Q15.** On a scale of 1–10 (where 1 = extremely negative effect and 10 = extremely positive effect), to what extent do you believe that the existence of brown bear habitat in the area affects the following? *(Please rate each item.)*

Activity	1	2	3	4	5	6	7	8	9	10
Employment opportunities										
Tourism development										
Entrepreneurship opportunities (e.g., tourism or services)										
Local incomes										
Attracting investment										

### SECTION 3. SOCIAL IMPACTS OF BEAR PRESENCE

**Q16.** Do you feel any of the following emotions, and to what degree, when you think about the possibility of encountering a bear in your area?

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<u>Thinking about a bear encounter, do you...</u>	<u>Yes</u>	<u>No</u>	<u>On the contrary, I seek it because I would like to encounter a bear</u>
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Avoid specific places in the area

Avoid going on long walks

Avoid recreational forest walks

Avoid social visits during late-night or early-morning hours

**SECTION 4. CONTRIBUTION OF THE LIFE ARCPROM PROJECT**

**Q20.** a. Have you been informed about the LIFE ARCPROM project or participated in any of its actions?

- Yes
- No

b. If yes, please specify (time and type of activity): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Q21.** On a scale of 1–10 (where 1 = extremely negative effect and 10 = extremely positive effect), to what extent do you believe that the actions of LIFE ARCPROM as a whole have influenced the following? (please rate each item)

- Employment in the area
- Tourism development in the area
- Entrepreneurship opportunities (e.g., tourism or services)
- Local incomes
- Attracting investment in the area
- Policy decision-making in the area
- Sense of safety in the area
- Trust among local stakeholders
- Education of residents and visitors

**Q22.** Which of the following actions of the LIFE ARCPROM project do you consider most effective in reducing negative impacts of bear presence in the area? (please select all that apply)

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- Electric or specialized fencing
- Bear-proof waste bins
- Livestock-guarding dogs
- Bear-friendly certification for tourism sites and businesses
- Other (please specify): \_\_\_\_\_

**Q23.** a. Suppose the state implements a five-year program of measures to improve and harmonize human–bear coexistence in your area. The program would aim both to protect the bear population and to mitigate negative impacts of bear–human encounters. Would you be willing to contribute financially to support such a program?

- Yes
- No

b. If yes, what would be the maximum annual amount you would contribute?

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- €6 - €20
- €21 - €50
- > €50

c. If yes, which activity would you prefer your contribution to support?

- Training, awareness-raising, and information activities for human–bear coexistence
- Electric or specialized fencing
- Bear-proof waste bins
- Livestock-guarding dogs
- Bear-friendly certification for tourism sites and businesses
- Other (please specify): \_\_\_\_\_

**END OF SURVEY**

**Thank you very much for your participation!**

