



Monitoring the Project's Impact: A Comparative Stakeholder Analysis „before“ and „after“

EU LIFE EuroLargeCarnivores
Final Report and Deliverable of
Project Action #C1



*Dr. Carol Grossmann, Dr. Anne Ulrich, Felix Krause (M.Sc.)
Forest Research Institute Baden-Württemberg (FVA)*

FINAL 28.02.2022





Summary

This is the final report for the Action #C1¹: ‘Monitoring the impact: Comparative stakeholder analysis „before“ and „after“ of the LIFE Project EuroLargeCarnivores (LIFE16 GIE/DE/000661-B1) “Improving human coexistence with large carnivores in Europe through communication and transboundary cooperation”. This Action is based on the preparatory Action #A2 ‘Stakeholder analysis based on the principles of inclusiveness and transparency’. Conducted by the Forest Research Institute of Baden-Wuerttemberg (FVA) in close collaboration with all project partners, the study is based on a theoretical linear logical model of how activities evoke changes or “impacts”. The model describes the intended relations between planned actions and how their results contribute to achieving a project’s goals on different levels: activity, output, outcome and overall impact. Due to the short term time frame, the study focuses on the ‘outcome’ level, i.e. change in behavior with impact on stakeholder level. Two different social science methodological approaches were applied (qualitative and quantitative longitudinal) and triangulated, taking different viewpoints (project partners and other stakeholders) into account.

The results of this study match theoretical expectations: numbers for raised awareness of relevant issues score highest, increase of theoretical knowledge scores higher than of practical skills, and change of behavior, i.e. implementation of new skills, score lowest but in this case on target levels. Impact on the stakeholder level is achieved if changed ‘own’ behavior reaches its aim to induce changes elsewhere.

A differentiated analysis confirmed a reinforcement of positive developments by project activities. For different aspects of ‘attitudes towards large carnivores’ stagnating or negative tendencies were observed, esp. with Livestock Raisers and Hunters. Even in these cases, project engagement could partly counterbalance these tendencies.

The project’s primary achievements lie in the fields of (i) communication, negotiation, and conflict mitigation skills, (ii) transboundary cooperation, and (iii) Livestock damage prevention. Positive developments were detected for (iv) establishment and improvement of financial support instruments and (v) the uptake and provision of fact-based information in the media. All of these accomplishments are worth following up as they require more time and resources to fully establish and to have a positive impact overall.

Recommendations are addressed to the EU LIFE program and future related projects, to the European Regions, to Member States and the European Commission, how to further support and facilitate local coexistence and transboundary large carnivore management.

¹ Letters with an #hashtag indicate the respective project action as listed in the grant agreement





Content

Summary	II
Introduction	1
Objective of Action #C1 Monitoring the impact: Comparative stakeholder analysis ‘before’ and ‘after’	4
Contribution to ‘Key Performance Indicators’ (KPI)	4
Theoretical framework of the study	6
Guiding research questions	17
Methodology - Monitoring the Impact (on stakeholder level)	18
Mixed Methods Approach, Tools and Data Collection	19
Qualitative Reflection of Outcomes and Impacts	20
Quantitative Assessment of the Project's Impact - EU wide online comparative stakeholder perception surveys	22
Survey Design	22
Survey Distribution	23
Description of the return 2021 compared to 2018	23
Results	32
Qualitative reflection of project outcomes and impact	32
Monitoring the Impact - an EU wide comparative stakeholder perception survey	33
a) Improvement of self-efficacy	35
b) Development of stakeholder networks	37
c) Communication, negotiation, consensus orientation and conflict mitigation techniques	42
d) Livestock protection and control of risks related to large carnivores	48
e) Financial instruments for damage prevention and compensation	54
f) Transboundary cooperation and species population level management	62
g) Monitoring standards	68
h) Wildlife Crime	72
i) Fact-based information about large carnivores	74
j) Attitudes toward conservation and coexistence with large carnivores	77





k) Challenges and constraints in pursuing population based management	86
Discussion	92
The methodological approach	92
Assessment of selected impact related ‘Key Performance Indicators’ (KPI)	94
Answers to the four main research questions	97
Conclusions and Recommendations	104
Acknowledgements	109
Literature	110
ANNEX	115





Register of Qualitative Narratives

Box 1 Expansion of networks and improvement of relationships	40
Box 2 Communication skills used in stakeholder meetings	44
Box 3 Collaboration with farmer associations improving the practicability of damage prevention measures.....	52
Box 4 Working with Pioneers	53
Box 5 Spotlight reflections on stakeholder knowledge and behavior concerning financial support programs for large carnivore induced damage prevention and compensation.....	55
Box 6 Cooperation with government institutions in the development of financial support systems	61
Box 7 Self-reflection of conservation actors on their role within stakeholder networks - neutral facilitation of potentially conflictual meetings	64
Box 8 Challenges, improved communication techniques, trust building and consequent cooperation in monitoring	70
Box 9 Fact based and balanced media coverage.....	76
Box 10 Do we change the farmers’ attitudes towards large carnivores?	85
Box 11 Dis-continuation of activities challenging change on the ground.....	90
Box 12 Replication of methodologies developed within the project.....	91





List of Tables

Table 1 Logical framework 8

Table 2 Return of qualitative stories of change ('Reflection Sheets') 22

Table 3 Self-efficacy in regards to large carnivores 36

Table 4 Changes in stakeholder network development since 2018 (awareness, knowledge, skills, behavior and impact on stakeholder level) in relation to participation in project activities 38

Table 5 Impact of participation in project events and training on improved networking, esp. contact to new stakeholders and quality of relationships 39

Table 6 Challenges for cooperation in regional networks 41

Table 7 Improved communication and conflict resolution capacities of participants of #B5 activities 43

Table 8 Improved communication and negotiation capacities of local conservation and management actors 45

Table 9 Jobs for local stakeholders and local/regional authorities in large carnivore management upgraded through improved (communication and other) skills 47

Table 10 Improved livestock protection measures learned about, improved or implemented 49

Table 11 Factual availability of financial instruments for large carnivore induced damage compensation and prevention measures 54

Table 12 Actual and perceived availability of financial support for prevention and compensation of livestock damage and claims by Livestock Raisers 56

Table 13 Perceived availability of and application for financial support for prevention and compensation of livestock damage and claims by Livestock Raisers 57

Table 14 Accessibility of financial instruments for livestock protection measures as perceived by Livestock Raisers 58

Table 15 Development and implementation of financial support programs for damage prevention or compensation 59

Table 16 Enhancements in transboundary cooperation 63

Table 17 Engagement in transboundary exchange 65

Table 18 Challenges of cooperation in transboundary management of large carnivores 67

Table 19 Cooperation for monitoring of large carnivore populations 69

Table 20 Exchange of data, investigation or prosecution related to wildlife crime 73

Table 21 Belief in satisfactory management of increased large carnivore populations 78

Table 22 Structural support, challenges and constraints for learning and applying new skills 87

Table 23 External challenges and constraints for changing behavior: workload, resources and peer encouragement 88

Table 24 External challenges and constraints for changing behavior: supervisors' role 89





List of Figures

Figure 1 Map of transboundary populations of large carnivores in Europe	2
Figure 2 Impact Matrix as a linear logical model	6
Figure 3 #C1b Timeline and contributions by project-partners.....	20
Figure 4 Return per Country in 2021	24
Figure 5 Return of the ELC Survey 2021 by age class	25
Figure 6 Return of the ELC Survey 2021 by gender	25
Figure 7 Return of the ELC Survey 2021 by highest education	26
Figure 8 Return of the ELC Survey 2021 by size of settlement	26
Figure 9 Return of the ELC Survey 2021 by Occupations.....	27
Figure 10 Interest groups differentiated according to practiced occupation and formal organization.....	28
Figure 11 Distribution and overlap of respondents' official membership in Hunters or Livestock Raisers Associations or Nature Conservation related NGOs in 2018 and 2021	29
Figure 12 Coexistence of survey respondents with three large carnivore species 2018/2021	30
Figure 13 Distribution of different stakeholder categories in the returns per country	31
Figure 14 Participation in any ELC project activity or event	34
Figure 15 Participation in specific topic oriented ELC events	35
Figure 16 Preparedness for issues concerning large carnivores in 2021.....	35
Figure 17 Participation in a project seminar or training on negotiation and communication techniques.....	43
Figure 18 Contribution of the ELC project to the mitigation of conflicts regarding large carnivores	46
Figure 19 Contribution of ELC to improving livestock protection measures as perceived by Livestock Raisers.....	51
Figure 20 Influence of the ELC project on the ability to cooperate across administrative boundaries	68
Figure 21 Influence of the ELC project on the ability to standardize monitoring data	71
Figure 22 Influence of the ELC project on the ability to reduce wildlife crime	74
Figure 23 Qualified output attitude on the work of 43 Journalists attending our events	75
Figure 24 Rating of information sources by media representatives	76
Figure 25 Confidence in satisfactory management of increasing large carnivore populations according to three main stakeholder categories 2018/2021	79
Figure 26 Confidence in satisfactory management of increasing large carnivore populations	80
Figure 27 Attitudes towards legal protection vs. local presence of wolves in 2018 and 2021	81
Figure 28 Acceptance of Large Carnivores presence in respondents' local areas, by country	82
Figure 29 Attitude towards legal protection of wolves in respondents' local regions according to organized members of three main stakeholder categories in 2018 and 2021	83
Figure 30 Attitude about the occurrence of wolf, bear and lynx in respondents' local regions according to institutionally organized members of three main stakeholder categories HU, NC and LR in 2018 and 2021.....	84





Introduction

The EU LIFE Project EuroLargeCarnivores (LIFE16 GIE/DE/000661-B1) “Improving human coexistence with large carnivores in Europe through communication and transboundary cooperation” has been implemented by a consortium of 16 partners in 17 countries, led by WWF Germany, and supported by Elmauer Institute:managing consensus², the Forest Research Institute of Baden Wuerttemberg (FVA)³ and external assistance by ‘blue! advancing european projects’ (further on only ‘blue!’)⁴. The project, with a duration of more than four years, started in 09/2017 and came to an end in 02/2022 (WWF DE 2017). The main objective of the project was to support effective implementation of population-based conservation strategies for large carnivores, i.e. brown bears (*Ursus arctos arctos*), wolves (*Canis lupus*), Eurasian lynx (*Lynx lynx*) and wolverines (*Gulo gulo*).

To achieve this overall objective, the project consortium was active in four main European cross border regions populated by large carnivores (see Figure 1) and pursued the following specific objectives:

- Boost awareness among local and national authorities and introduce communication tools that are customized to their specific geographical and cultural situation.
- Inform and actively engage key-actors in a consensus-driven approach on their needs and responsibilities.
- Develop cross-border, interdisciplinary pathways to engage formerly passive actors and bring new perspectives and knowledge to large carnivore management (supported by A2, B1, B3, B4).
- Contribute to an EU-wide common understanding of stakeholder-oriented population-based large carnivore conservation strategies.
- Contribute to the implementation of the DG Environment's policy paper “Key actions for large carnivore populations in Europe”.
- Give added value to existing large carnivore (LIFE and other programs) projects by promoting their results and sharing best-practices.
- Provide local stakeholders such as farmers with direct engagement opportunities and custom-fit learning experiences through a trusted peer-to-peer approach.

² <https://www.managingconsensus.com>

³ <https://www.fva-bw.de/startseite> (in German only)

⁴ <https://the-blue.net/en/>



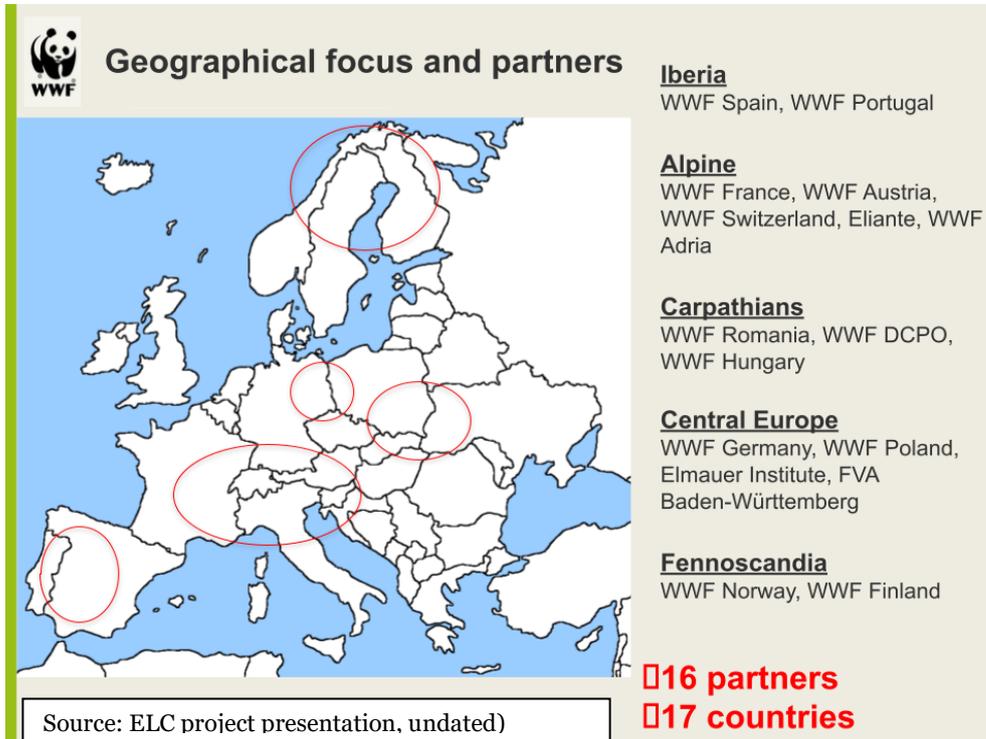


Figure 1 Map of transboundary populations of large carnivores in Europe

Based on four main preparatory actions (#A1-#A4)⁵, the project pursued nine core implementation activities (#B1-#B9)⁶ in 17 countries within Europe to achieve its objectives. In parallel monitoring

⁵ #A1: Overview of existing projects and successful instruments.

#A2: Stakeholder analysis based on the principles of inclusiveness and transparency.

#A3: EU-wide data collection on social, economic and ecological impacts of LC based on existing information.

#A4: Development of a coordinated communication plan with 12 European WWFs and three additional partners representing 16 European countries.

⁶ #B1: Promote best practices of large carnivore management and conservation and facilitate transboundary exchange through international multi-stakeholder conference(s).

#B2: Involve institutions and authorities in a long-term exchange on instruments and best practice examples of large carnivore management and conservation.

#B3: Promote case studies and best practices on implementation of transboundary monitoring of LC populations.

#B4: Foster transnational and national information exchange on transboundary cooperation.

#B5: Increase communication capacities: Train local conservation and management actors in consensus-oriented approaches.

#B6: Increase communication capacities: Motivate and engage stakeholders in continuous exchange activities

#B7: Change attitude on the ground: Initiate and moderate peer-to-peer exchange of livestock protection measures between farmers





(#C1-#C3)⁷ and communication and dissemination activities were performed (#D1-#D3)⁸. The main findings and conclusions of all these activities were then to feed into recommendations for the 'Long term sustainability and After-LIFE communication plan and monitoring of project progress' (#E2)⁹.

With its activities, the project contributes to the implementation of the EU's Habitat Directive. With its focus on transboundary cooperation and promoting dialogue amongst different stakeholders, it is in line with the recommendations of the technical report prepared by Boitani et al. (2015) under contract for the European Commission: Key actions for large carnivore populations in Europe. The report covers the most urgent actions necessary to be implemented at population level for the four large carnivore species that the present project focuses on.

The EU LIFE Project EuroLargeCarnivores thus contributes to the long-term conservation of Europe's four species of large carnivores (overall impact), by contributing towards:

- Improved ecological connectivity of large carnivore populations / increased permeability of large carnivores in border areas.
- Reduction of illegal killings of large carnivores.
- Mitigation of the level of conflict around large carnivores.

#B8: Change attitude on the ground: Establish long-term cooperation with journalists and together collect stories, build networks, exchange information

#B9: Change attitude on the ground: Increase the sense of ownership through interactive Magical Moments Campaign [During the project lifetime the "Magical Moments Campaign" was renamed 'Video Campaign: Stories of Coexistence' as a more neutral title.]

⁷ #C1: Monitoring the impact: Comparative stakeholder analysis "before" and "after"

#C2: EU-wide database for quantitative monitoring of people reached and involved

#C3: Contribution to an EU-wide socio-economic impact analysis

⁸ #D1: Project Communication toolbox on all levels

#D2: Continuous cooperation and networking with multinational platforms, macro-regional strategies and EU platforms

#D3: Media relations

⁹ #E2: Long term sustainability; After-LIFE communication plan and monitoring of project progress





Objective of Action #C1 Monitoring the impact: Comparative stakeholder analysis ‘before’ and ‘after’

The main driver of our research is our interest in the human-nature interface. The mission of the Department of Societal Change at the Forest Research Institute Baden-Wuerttemberg (FVA) is to provide social science research and consultancy based on research results in and for forest-related topics traditionally dealt with by natural sciences. In order to do so, we apply different methodological approaches in an interdisciplinary setting and work in a transdisciplinary environment with people from different professions and backgrounds in a participatory way and in step with actual practice. We are acknowledged especially for combining qualitative with quantitative research findings and taking shifts in perspective (Jürgens & Ehret, undated/ca. 2019) and further hope that our contributions provoke fruitful irritation and inspiration.

Within action #C1 *Monitoring the impact: Comparative stakeholder analysis ‘before’ and ‘after’*, the overall objective of the study and report at hand was to identify and document changes in **networks**, **attitudes**, **knowledge**, and **behavior** of stakeholders related to project activities. Furthermore, related challenges and problems experienced on the way to achieving the targeted outcomes were assessed, i.e. factors that influence the transfer of acquired knowledge or skills into behavior and habits.

The ‘comparative stakeholder analysis’ is based on the baseline data collected within the scope of the Participatory Stakeholder Identification and Comparative Network Analysis (Action #A2) and the Baseline Survey on stakeholder perceptions (Action #C1a Online Survey 2018).

The #C1 study complements in some parts #C2 *Monitoring the impact: Database of people reached and involved* and #C3 *Monitoring of impact: Contribution to a EU wide socio-economic impact analysis* by contributing relevant data for the assessment of project achievements in line with selected ‘Key Performance Indicators’.

Contribution to ‘Key Performance Indicators’ (KPI)

The results of the #C1 surveys contribute to the assessment of selected ‘Key Performance Indicators’ (KPI) that have been defined during the planning phase of the project to measure the impact of the project. The definitions and responsibilities for their assessment were developed in Action #C2 and documented in the “Full Performance Indicator Table” (blue! advancing european projects/ 2022/ Final Monitoring Report 2017-2022) as required in the Project Grant Agreement (WWF DE, 2017). The final decision of which Key Performance Indicators to address with questions in the #C1 study to provide data for their assessment was aligned between the project coordination, FVA and blue! in late 2020.





#C1/FVA is responsible to contribute to the assessment of:

KPI 3: 45 jobs for local stakeholders and local/ regional authorities are upgraded through improved (communication and other) skills in large carnivore management or adoption of best practices. The comparative stakeholder analysis (#C1) will reveal the presence and use of improved skills.

KPI 12: At least 60 livestock raisers adapt to improved herd protection practices, use protection measures in the region where the corresponding activities are conducted (#B7). The comparative stakeholder analysis (#C1) will reveal changes in awareness and knowledge about improved protection measures and the use of improved skills, techniques and tools.

KPI 13: 60 local conservation and management actors improve their skills on stakeholder's communication and conflict resolution.

KPI 14: Ten institutions are engaged in a transboundary exchange. The comparative stakeholder analysis (#C1) survey will reveal increased awareness, skills and transboundary cooperation behavior by different individual stakeholders but not identify the institutions specifically. Additional information contributing to the full assessment of this indicator will be available in the #C2 *Monitoring Database of people reached and involved* report.

#C1/FVA further complements activities by blue! for *Monitoring the impact: Database of people reached and involved*, and the Socio-Economic Impact Assessment (SEIA) by Factor Consult by providing data for the following indicators:

KPI 6: At least 10% of stakeholders involved in project activities state that their acceptance towards large carnivores and management measures has increased.

KPI 8: At least 20% of the participants of the project activities state that their self-efficacy in regards to large carnivores has improved (ability, competency or skill to perform a particular behavior to decrease level of conflict).

KPI 9: At least 30% of the participants of project activities state that they are more engaged in networking as a result of the project.

Action #C1 contributes to learning within and beyond the project. Lessons learned are identified that can contribute to plan and implement future programs and projects in this thematic field, be it financed by the EU or other donors. It may further give insights for the further elaboration of international, national and local policies and communication strategies.





Theoretical framework of the study

A broad range of literature and models exist on how activities evoke changes or ‘impacts’, whether intended or unintended. The following linear logical model of an impact matrix (see Figure 2) introduces the terminology used in this report and the different levels and dependencies of activity, output, outcome and impact. These terms are often used interchangeably or synonymously to describe the intended relations between the planned actions of a project and how their results contribute to achieving a project’s goals. The differentiation of outcome and impact is often considered a rather academic distinction as activities do induce a change, i.e. have an impact, even though on different levels. In this report, we focus on the level of ‘outcomes’ of the project, or more commonly the ‘impact on stakeholder level’.

Impact Matrix as a linear logical model

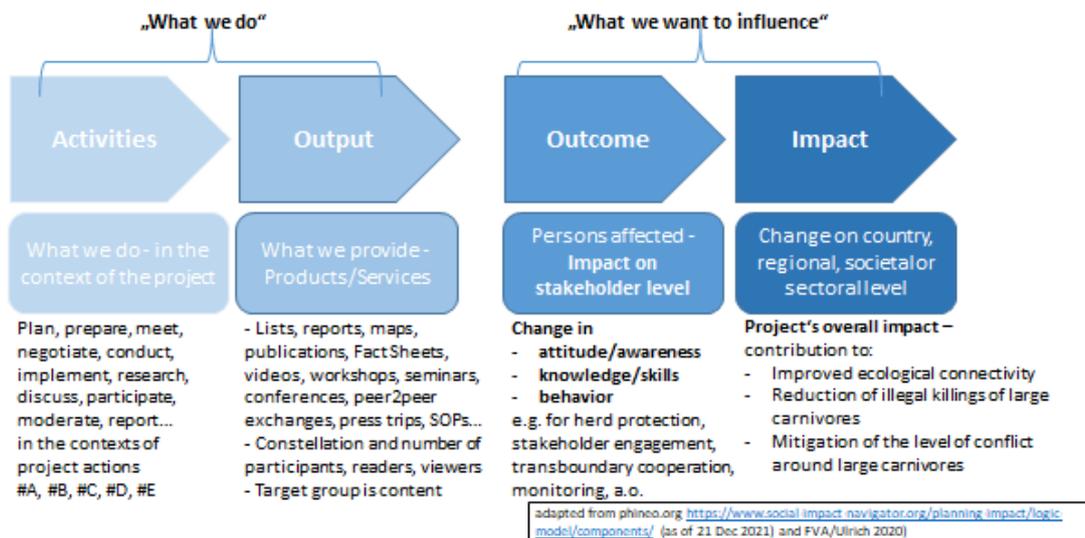


Figure 2 Impact Matrix as a linear logical model

With its focus on changes in attitude, knowledge and behavior of stakeholders, the #C1b study looks specifically at the **outcomes** of the LIFE EU Project EuroLargeCarnivores. These ‘**stakeholders**’ are project beneficiaries from different target groups addressed by project activities including the practice oriented project partners themselves. The study does not evaluate the outputs of the project nor its impact on the country, regional or sectoral level. Together with the results of the project monitoring (#C2), the results of this study give insights to the question as to what extent the objectives of the project could be achieved.





To have an outcome or impact on stakeholder level, several consecutive processes need to take place:

- Outputs need to reach relevant numbers of stakeholders (as readers, viewers or participants).
- The information given needs to be taken in and reflected by the recipients, and thereby may lead to **increased awareness** (e.g. that something previously seen as critical may be important and why).
- If this increased awareness is reflected positively this may induce **changes in attitude** (e.g. reduce previous apprehension).
- Only if deemed relevant by stakeholders, information and training provided may be received and processed in a way to actually **increase knowledge and skills** ('how to do something').
- Once informed and skilled in how to do things differently and hopefully better, stakeholders may put this knowledge and skill into practice and thereby **change their behavior or institutional structures**.
- This change in behavior is known to depend not only on knowledge and skills but also on favorable socio-economic and regulatory frame conditions, such as time and money available, peer behavior, and administrative support or constraints.

The logical framework presented in Table 1 shows the underlying logic of these project activities in detail. It focuses on the core actions (#B1–#B9) and includes the preparatory action 'Stakeholder analysis' (#A2). In addition, the table shows how the monitoring activities of the project complement each other: The **output** of the activities is monitored by #C2. The **outcome** or **impact on stakeholder level** of the project is assessed by both #C1 and #C3. Monitoring of the project's **impact** at the country, regional, societal or sectoral level is conceptualized in Action #E2.





Table 1 Logical framework

ACTIVITY <i>What are the key activities to be carried out to produce the intended outputs? (*activities should in principle be linked to corresponding output(s) through clear numbering)</i>	OUTPUT <i>The direct/tangible products (infrastructure, goods and services) delivered/generated by the intervention (*Outputs should in principle be linked to corresponding outcomes through clear numbering)</i>	OUTCOME – Level I (change in attitude, knowledge and behavior) <i>The main medium-term effect of the intervention focusing on behavioral and institutional changes resulting <u>from the intervention</u></i>	OUTCOME – Level II (changes with stakeholders contributing to project objectives) <i>The main medium-term effect of the intervention focusing on behavioral and institutional changes resulting <u>from the intervention</u></i>	IMPACT <i>The broader, long-term change to which the action contributes at country, regional or sector level, in the political, social, economic and environmental global context which will stem from interventions of all relevant actors and stakeholders.</i>
Stakeholder analysis and participatory network mapping (A2) [Lead: FVA] Main target groups: Project partners All stakeholders	<ul style="list-style-type: none"> Individual and organized stakeholders, agencies and associations relevant to LC management are identified – those already involved as well as those that should be taken into account in the future 	<p>Raised awareness</p> <ul style="list-style-type: none"> Project partners are aware of the importance to include identify and communicate all relevant stakeholders <p>Knowledge gained</p> <ul style="list-style-type: none"> Project partners know all relevant other stakeholders Project partners know how to engage with all other stakeholders (communication channels and structures) <p>Behavioral changes</p>	<p>Structural change</p> <ul style="list-style-type: none"> Project partners have expanded their networks, i.e. are now in regular contact with other stakeholder(groups) that they were not involved with before Project partners have strengthened their network, i.e. are now in more regular contact and/or have 	Conservation of four species of large carnivores in Europe by: <ul style="list-style-type: none"> Improved ecological connectivity of large carnivore populations / increased





	<ul style="list-style-type: none"> Potential communication channels and structures are identified Methodology and training material are developed Workshops are implemented Stakeholder maps are elaborated and compared 	<ul style="list-style-type: none"> Project expand their networks with contacts to stakeholder(groups) that were not involved before Project partners strengthen their network by contacting other stakeholder(groups) more regularly or establishing more trustful relationships with them 	<p>established more trustful relationships with other stakeholder(groups)</p>	<p>permeability of large carnivores in border areas has increased</p> <ul style="list-style-type: none"> Reduction of illegal killings of large carnivores Mitigation of the level of [damages and social] conflict around large carnivores
<p>Promote best practices of large carnivore management and conservation and facilitate transboundary exchange through national multi-stakeholder conference (B1) [Lead: WWF DE]</p> <p>Main target groups: Authorities, institutions and conservation actors</p>	<ul style="list-style-type: none"> Priority topics for transboundary coordination and cooperation are identified; Ways to establish transboundary cooperation are promoted (e.g. guidelines for population level [monitoring and] management plans). Awareness about the problem of illegal killings raised; investigation techniques promoted; international networks established/strengthened Monitoring standards promoted (e.g. involving stakeholders); Solutions to mitigate Habitat fragmentation through transboundary landscape planning promoted; increased permeability for LC in border areas 	<p>Raised awareness</p> <ul style="list-style-type: none"> Authorities, institutions and conservation actors are more aware of the importance of [species] population level management. Authorities, institutions and conservation actors are more aware of the need of transboundary cooperation. Authorities, institutions and conservation actors are more aware of the extent [and consequences] of the problem of illegal killings Authorities, institutions and conservation actors are more aware about the need for monitoring standards Authorities, institutions and conservation actors are more aware of the importance of stakeholder engagement/involvement <p>Knowledge gained</p> <ul style="list-style-type: none"> Authorities, institutions and conservation actors know <ul style="list-style-type: none"> how to establish transboundary cooperation for population level management how to investigate illegal killings how to standardize/harmonize their monitoring whom to engage with and how to engage stakeholders <p>Behavioral/ structural changes</p> <p>Authorities, institutions and conservation actors</p> <ul style="list-style-type: none"> increase their own transboundary cooperation 	<p>Structural change</p> <ul style="list-style-type: none"> Transboundary cooperation has increased Networks to mitigate illegal killings have been established or strengthened Investigation of illegal killings has increased Common monitoring standards are used across administrative boundaries Transboundary landscape planning is increasingly taking place Stakeholders are increasingly engaged 	





	<ul style="list-style-type: none"> • Stakeholder engagement promoted; lessons learned for stakeholder engagement shared • 4-day international conference implemented 	<ul style="list-style-type: none"> • are establishing or strengthening networks to mitigate illegal killings • increasingly Investigate illegal killings • use common monitoring standards across administrative boundaries • increasingly implement transboundary landscape planning • increasingly engage other stakeholders 		
<p>Involve institutions and authorities in a long-term exchange on instruments and best practice examples on financial instruments for large carnivore management and conservation (B2) [Lead WWF ES]</p> <p>Main target group: Authorities, institutions, conservation actors</p>	<ul style="list-style-type: none"> • Transfer of best practices of financial instruments to authorities, institutions and conservation actors • Bilateral meetings with relevant authorities and conservation actors • Min. 2 national/sub-national workshops (in all countries except AT) • Online exchange platform on project website 	<p>Raised awareness</p> <ul style="list-style-type: none"> • Institutions/authorities are more aware of existing financial instruments • Institutions/authorities are more aware of best practice examples of financial instruments <p>Knowledge gained</p> <ul style="list-style-type: none"> • Institutions/authorities know how to use/implement existing financial instruments <p>Behavioral change/ Replication</p> <ul style="list-style-type: none"> • Institutions/authorities actively seek ways to develop and implement the financial instruments 	<p>Structural change</p> <ul style="list-style-type: none"> • At least five following best practice activities are implemented in each focus region by authorities and institutions (environmental protection agencies, protected areas managers, hunting associations, NGO) 	
<p>Promote case studies and best practices on implementation of transboundary monitoring of large carnivore population (#B3) [Lead WWF RO]</p> <p>Main target group:</p>	<ul style="list-style-type: none"> • Transboundary monitoring of large carnivore population is promoted • Individual meetings on this topic took place • Transboundary workshop on this topic took place in each region 	<p>Raised awareness</p> <ul style="list-style-type: none"> • National representatives are increasingly aware about the relevance of harmonized monitoring methods across border <p>Knowledge gained</p> <ul style="list-style-type: none"> • National representatives know how to harmonize monitoring methods <p>Behavioral change</p> <p>National authorities, conservation actors and stakeholders</p> <ul style="list-style-type: none"> • exchange monitoring data and standards 	<p>Structural change</p> <p>Exchange on monitoring data and standards is increasingly taking place between national authorities, conservation actors and stakeholders</p> <ul style="list-style-type: none"> • Monitoring methods are standardized across administrative borders 	





<p>National representatives responsible for monitoring; national experts and practitioners</p>	<ul style="list-style-type: none"> • Report with recommendations is published 	<ul style="list-style-type: none"> • start standardizing monitoring methods across administrative borders • improve transparency about data acquisition and interpretation • develop common monitoring plans 	<ul style="list-style-type: none"> • Transparency about data acquisition and interpretation is improved • Common monitoring plans are developed. In least 3 regions countries with shared LC populations have agreed on joint standards for their monitoring. A Memorandum of understanding exists] 	
<p>Foster transnational and national information exchange on transboundary cooperation (#B4) [Lead: WWF DE]</p> <p>Main target group: Authorities, institutions, conservation actors</p>	<ul style="list-style-type: none"> • Best practices on investigation and prosecution of illegal killings are promoted • Effective and synchronized procedures and protocols on illegal killings are identified and made available on the exchange platform • For Germany and Romania, the development of a database on cases of illegal killings of large carnivores is planned. <ul style="list-style-type: none"> • 1-day workshop • Min. 10 national and 5 transboundary events on illegal killings • In at least 3 countries, a continuous exchange of national 	<p>Raised awareness</p> <ul style="list-style-type: none"> • Authorities, institutions and conservation actors have a better understanding of solved/investigated cases of illegal killings. <p>Knowledge gained</p> <ul style="list-style-type: none"> • Authorities, institutions and conservation actors know how to continue transnational exchange on illegal killings. • Authorities, institutions and conservation actors know with which techniques to tackle wildlife crime/ to enforce wildlife law. <p>Behavioral changes</p> <p>Authorities, institutions and conservation actors are strengthening this cooperation within the complete enforcement chain.</p>	<p>Structural change</p> <ul style="list-style-type: none"> • Authorities, institutions and conservation actors cooperate more intensively within the complete enforcement chain. 	





	<p>experts on illegal killings has been initiated and will continue beyond the duration of the project.</p> <ul style="list-style-type: none"> At least 5 events on improving ecological connectivity for large carnivores 			
<p>Increase communication capacities through training of local conservation and management actors in consensus-oriented approaches (B5) [Lead: Elmauer Institute]</p> <p>Main target group: Conservation actors and managers</p>	<ul style="list-style-type: none"> Are taught social norms and social control to understand stakeholder group behavior Are taught how to foster behavioral change Are taught how to build trust with stakeholders Are taught negotiation techniques Communication strategies and plans are drafted <ul style="list-style-type: none"> Min. 12 seminars in focus areas (Alps, Iberia, Carpathians, central Europe) 	<p>Raised awareness</p> <ul style="list-style-type: none"> Conservation actors and managers are aware of social norms and social control that may explain stakeholder group behavior <p>Knowledge gained</p> <p>Conservation actors and managers</p> <ul style="list-style-type: none"> know how to foster behavioral change know useful negotiation techniques feel prepared to apply new strategies to mitigate conflicts with stakeholders <p>Behavioral changes</p> <p>Conservation actors and managers</p> <ul style="list-style-type: none"> Successfully foster behavioral change with other stakeholders Apply negotiation techniques Could use their communication techniques to ease conflict situations 	<p>Structural change</p> <p>Trust between conservation and management actors and other stakeholders is strengthened</p>	
<p>Motivate and engage stakeholders in continuous exchange activities (B6) [Lead: Elmauer Institute]</p> <p>Main target group:</p>	<ul style="list-style-type: none"> Population area forums are established Regional forums have taken place 	<p>Raised awareness</p> <p>Conservation and management actors</p> <ul style="list-style-type: none"> Are <u>aware</u> of the importance of communication strategies and plans to engage with all stakeholders <p>Knowledge gained</p> <p>Conservation and management actors</p>	<p>Structural change</p> <ul style="list-style-type: none"> New or adapted communication strategies and plans are being <u>implemented</u> by conservation and management actors 	





<p>Conservation actors and managers Indirectly: All stakeholders</p>	<ul style="list-style-type: none"> • Strategies exist how to continue and transfer the forums after the project lifetime • 10 national forums are established • Two regional meetings of the forums have taken place 	<ul style="list-style-type: none"> • <u>know about</u> and have a strategy how to continue with the LC Management fora • <u>know how</u> to implement the communication strategies and plans elaborated <p>Behavioral/ structural changes</p> <ul style="list-style-type: none"> • Conservation and management actors <u>implement</u> the elaborated communication strategies and plans 		
<p>Change attitude on the ground: Initiate and moderate peer-to-peer exchange on livestock protection measures between farmers (B7) [Lead: WWF AT]</p> <p>Main target group: Livestock owners and herders</p>	<ul style="list-style-type: none"> • Information seminars and round tables have taken place • Best practices on livestock protection are promoted through conference • Transboundary event in the Iberian region bringing together livestock owners and herders has taken place • Local herd protection measures are promoted through excursion with on-site visits • Best practices on livestock protection are available on project website • Demonstration activities/ public events showcase installation of electric fences and work with livestock guarding dogs (before/during the seminars) 	<p>Raised awareness Livestock owners and herders</p> <ul style="list-style-type: none"> • are <u>aware</u> of different livestock protection measures such as <ul style="list-style-type: none"> ○ Electric fencing ○ Guarding dogs ○ ... • as well as of financial damage prevention and compensation measures <p>Knowledge gained Livestock owners and herders</p> <ul style="list-style-type: none"> • <u>feel able to use/know how to use</u> [improved] livestock protection measures to protect their stock against predation • Know how to apply for financial damage prevention and compensation <p>Behavioral/ structural changes Livestock owners and herders</p> <ul style="list-style-type: none"> • <u>use</u> improved livestock protection measures such as <ul style="list-style-type: none"> ○ Electric fencing ○ Guarding dogs ○ ... ○ Successfully apply for financial damage prevention and compensation 	<p>Structural change Livestock owners and herders</p> <ul style="list-style-type: none"> • <u>use</u> improved livestock protection measures such as <ul style="list-style-type: none"> ○ Electric fencing ○ Guarding dogs ○ ... • Successfully apply for financial damage prevention and compensation 	





<p>Change in attitude on the ground: Establish long-term cooperation with journalists and together collect stories, build networks, exchange information (B8) [Lead: WWF RO]</p> <p>Main target group: journalists</p>	<ul style="list-style-type: none"> • Media portfolio developed • Press trips organized and implemented • Information about large carnivores is regularly disseminated to journalists • Regular communication with journalists is established • 30 success stories are collected and disseminated 	<p>Raised awareness</p> <ul style="list-style-type: none"> • Local communities are more aware about large carnivore management related measures and ways to mitigate conflicts • Journalists are more aware about the need of fact-based reporting on large carnivores <p>Knowledge gained</p> <ul style="list-style-type: none"> • Journalists know relevant facts about large carnivores, challenges and ways to mitigate conflicts <p>Behavioral changes</p> <ul style="list-style-type: none"> • Journalists require or access fact based information about large carnivores during their investigation • Journalists require or access information about the project and its results 	<p>Structural change</p> <ul style="list-style-type: none"> • Reporting and storytelling about large carnivores is more fact-based • Articles about the project and its results are published or referenced <p>Monitored and evaluated by the Monitoring and Communication Teams</p>	
<p>Change attitude on the ground: Increase the sense of ownership through interactive “Magical Moment Campaign” (B9) During project lifetime the name changed to “Video Campaign: Stories of coexistence” [Lead: WWF FI]</p> <p>Main target group: General public</p>	<ul style="list-style-type: none"> • Videos with stories highlighting successful coexistence with large carnivores and/or how to counteract risks related to large carnivores are disseminated • The videos are being watched by the general public 	<p>Raised awareness/ attitude</p> <ul style="list-style-type: none"> • General public is more aware about successful coexistence with large carnivores • General public’s attitude is more positive towards large carnivores <p>Knowledge gained</p> <ul style="list-style-type: none"> • General public knows better how to counteract risks related to large carnivores 	<p>Structural change</p> <ul style="list-style-type: none"> • none 	





The study further looks into factors that influence the uptake and transfer of acquired knowledge and skills into behavior or even habits. We adapted the Learning Transfer System Inventory by Holton et al. (2000) and the fourth level of the Kirkpatrick model (1960) to the project's setting and used it as a basis for assessing specific factors that relate to the particular activities of the projects (events, trainings) as well as general factors which are likely to influence the overall impact of the project activities (see insert 'Factors influencing the transfer of acquired knowledge and skills into behavior'). The study does not look into factors that are either beneficial for or hinder the implementation of planned activities (i.e. factors that influence the output of the project). This is covered by Monitoring Action #C2.

Factors influencing the transfer of acquired knowledge and skills into behavior

Specific factors

1. Learner readiness – the extent to which individuals are prepared to enter and participate in the training/event.
2. Motivation to transfer – the direction, intensity and persistence of efforts towards utilizing new knowledge or skills in a work setting or situation where stakeholders are expected to improve co-existence with large carnivores.
3. Positive personal outcomes – the degree to which the application of lessons learned (best practices) are expected to lead to outcomes that are positive for the individual.
4. Negative personal outcomes – the extent to which individuals believe that applying new skills and knowledge learned (best practices) will lead to outcomes that are negative for themselves.
5. Personal capacity for transfer – the extent to which individuals have time, money available, energy and mental space in their (work) lives to make changes required to transfer learning on the job.
6. Peer support – the extent to which peers reinforce and support the use/replication/application of best practices or skills learned.
7. Supervisor support – the extent to which supervisors (if applicable) support and reinforce use/replication of best practices or skills learned.
8. Supervisor sanctions – the extent to which individuals perceive negative responses from their supervisors when (not?) applying the best practices/skills learned.
9. Perceived content validity – the extent to which participants perceive the content of the events/training relevant enough to reflect their usefulness for their jobs/situations requiring the improvement of co-existence with large carnivores.
10. Transfer design – the degree to which the event/training has been designed and delivered in a way that gives participants the ability to transfer what they have learned to their job/ to situations requiring improved co-existence with large carnivores.
11. Opportunity to use – the extent to which participants are provided with or obtain resources or assigned tasks to enable them to use/apply/replicate the lessons learned and new skills.





General factors

1. Transfer effort-performance expectations – the expectation that effort devoted to learning/transferring/replicating best practices and new skills will lead to positive changes in job performance.
2. Performance-outcomes expectations – the expectation that changes in job performance will lead to valued outcomes and improved co-existence.
3. Openness to change – the extent to which prevailing group norms are perceived by the individuals in a way to resist or discourage the replication of best practices, use of new skills and knowledge acquired in the events/training.
4. Performance self-efficacy – an individual’s general belief that he/she is able to change performance when he/she wants to.
5. Performance coaching – formal and informal feedback from an organization as to how well new skills/best practices learned are applied after events/training.

Not all of these factors are applicable or relevant for all stakeholder or target groups for which respective changes are intended and expected. Part of the #C1 analysis will take this aspect into account.





Guiding research questions

Based on this focus of the study, the following main research questions will guide the assessment:

1. To what extent have project activities led to changes in **awareness** and **attitude** of stakeholders about conservation and management of large carnivore populations, and the potential to proactively improve coexistence with large carnivores in Europe?
2. To what extent have project activities led to changes in **knowledge** of project beneficiaries and other stakeholders?
3. To what extent have project activities (...) led to **behavioral or structural** changes esp. with regard to herd protection and population based management of large carnivores?
4. What kind of **challenges and constraints** do stakeholders perceive in pursuing population based management for improved conservation of large carnivores?

These consecutive levels of change on the stakeholder level will be assessed along the following ten topics. These topics are synthesized from the prescribed goals of individual project actions #A2 and #B1-9 all of which were designed to have an individual or mutually reinforcing influence:

- a) Improvement of self-efficacy.
- b) Development of stakeholder networks.
- c) Communication, negotiation and conflict mitigation techniques.
- d) Livestock protection and control of risks related to large carnivores.
- e) Financial instruments for damage prevention and compensation.
- f) Transboundary cooperation and population-level management of large carnivores.
- g) Monitoring standards.
- h) Wildlife Crime.
- i) Fact-based information about large carnivores.
- j) Attitudes toward conservation and coexistence with large carnivores.
- f) Challenges and constraints.

In addition to overall assessments, the analysis of selected topics will focus on the three main stakeholder categories: Hunters (HU), Livestock Raisers (LR) and Nature Conservationists (NC). Other topics will be assessed only according to the target groups addressed specifically by certain project actions, like employees of Ministries and Administration (MA) and Journalists (MEDIA).





Methodology - Monitoring the Impact (on stakeholder level)

The different activities performed were planned and implemented in six general steps, starting in 2018. The final impact analysis was carried out in 2021, during the last year of the project. To reach its goal, this action applied a multi-component research design.

1. Comprehensive Baseline Survey - First EU wide survey “Large Carnivores in Europe 2018”

Timeframe: 2018, 3rd and 4th Quarter
Involved: FVA/Project Partners/any stakeholder
Procedure: Online questionnaire, in regional languages, distribution concept and guidelines, analysis of quantitative data

2. Preparatory phase: Guided Written Interviews (“Reflection Sheets”) - online

Timeframe: 2021, 1st Quarter
Involved: FVA/Project Partners
Procedure: Identification and systematic compilation of project partners’ perceived impacts of project activities on different stakeholders (qualitative data)

3. Monitoring the Impact - Second EU wide online comparative stakeholder perception survey

Timeframe: 2021, 3rd Quarter
Involved: FVA/Participating Project Partners
Procedure: Second online questionnaire providing quantitative data based on data and experiences with the Survey 2018, detailed distribution concept, timeline and guidelines for project partners

4. Aggregation, triangulation and interpretation of qualitative and quantitative results

Timeframe: 2021 4th Quarter and 2022 1st Quarter (FVA)
Involved: FVA; blue!
Procedure: Following the separate and comparative analysis of the standardized surveys 2018/2021 and the guided written interviews the individual and comparative quantitative and qualitative results were triangulated and supplemented with additional data and information from other project deliverables for better interpretation.

5. Discussion and assessment of selected outcome related Project Key Performance Indicators (KPI)

6. Conclusion and formulation of recommendations





Mixed Methods Approach, Tools and Data Collection

The mixed methods approach for this Impact Analysis was developed by scientists at the Forest Research Institute of Baden Wuerttemberg (FVA) adapting methods described by Dillman et al. (2014), Fuhse (2018), Holton et al. (2000), Kirkpatrick (1960), (Kruse et al. 2012), phineo.org (as of 2021) and Ulrich (2020).

At the core of the comparative stakeholder analysis was the implementation of a second stakeholder perception survey (quantitative) complemented with qualitative data to identify chains of effects associated with project activities. The study therefore comprised two main methodological stepping stones:

- Step 1 **Guided interviews in written form - The ‘Reflection Sheets’** (online, qualitative, English) filled by each partner country’s focal point with the objective:
- i. to detail changes in composition and quality of stakeholder networks (from project partners’ perspective);
 - ii. to detail changes (attitudes and behavior) that project partners noticed with other stakeholders, which they associate with project activities;
 - iii. to detail changes (attitudes and behavior) that partners have noticed with themselves, which they associate with project activities.
- Step 2 **Second stakeholder perception survey - “Large Carnivores in Europe 2021”** (online, quantitative, multilingual). The questionnaire contained selected identical questions from the Baseline Stakeholder Perception Survey “Large Carnivores in Europe 2018”, plus relevant new questions with the objective:
- i. to see quantitative changes in response behavior compared to the baseline;
 - ii. if applicable, to gain quantitative results on topics not yet covered in the baseline but relevant to answer the more comprehensive study questions.

Selected results of identical quantitative questions in the surveys carried out in 2018 and 2021 were compared to each other, relevant new questions in the survey 2021 analyzed and later on triangulated (Olsen, 2014) with the qualitative results of the Reflection Sheets.





Timeline and partner contributions

Both the qualitative regional data provision (prose team responses in the ‘Reflection Sheets’) and the quantitative data collection (translation of the English master questionnaire into the regional languages and distribution of the online surveys 2018 as well as 2021) were organized by the teams of the regional focal points. The preparation of material and guidelines as well as the partners’ contributions were coordinated and supported by the Forest Research Institute of Baden-Württemberg (FVA), according to the timeline as depicted in Figure 3. The comprehensive data analysis was also conducted by FVA.

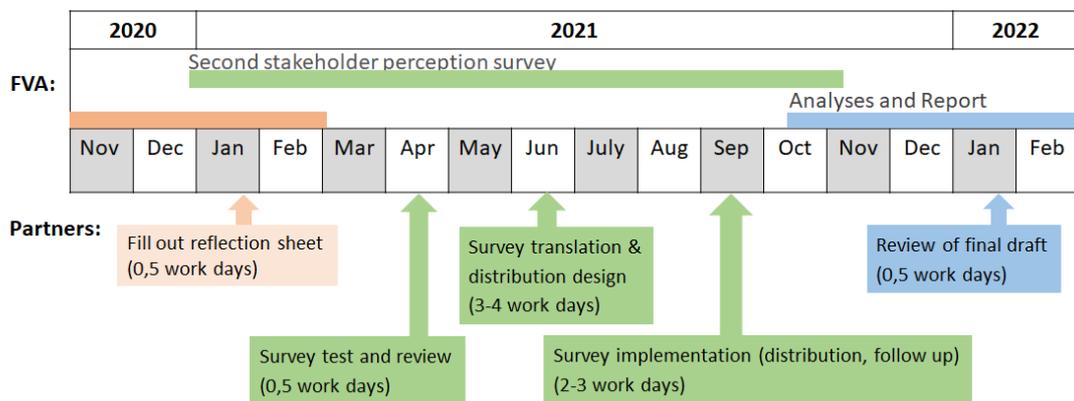


Figure 3 #C1b Timeline and contributions by project-partners

Qualitative Reflection of Outcomes and Impacts

The project partners were guided through the written interviews with the help of sophisticated templates in the form of decision trees, the so-called ‘Reflection sheets’¹⁰. They were asked to reflect on the **impact** the activities of the EuroLargeCarinvores project have on people involved. Here, the focus was primarily on the changes that project activities initiated with regards to their own and other stakeholders’ **networks, attitudes and behavior**.

The aim of the different reflection sections proposed was to gather **meaningful examples** that show **how** the project actually influences stakeholder engagement and large carnivore management.

In this case, looking at the **impact** of the project means to look beyond the activities themselves and focus on the intended (or sometimes unintended) changes that these activities triggered. For example, partners were not only asked whether or not they have expanded their networks, but whether and how an expansion of the network has supported mediation or mitigation of conflicts,

¹⁰[ELC C1 Final Report ANNEX Reflection sheet full form.pdf](#)





or has improved the implementation of large carnivore population oriented conservation and management strategies.

The reflection sheet is divided into four sections – out of which each focal point was asked to fill three preselected particular topics. For each topic, **one story of change** was requested that has been triggered by project activities.

1. Example of change in composition and quality of **networks**. What has changed in a network, how did this happen and what consequences did this have? (#A2, #B5)
2. A) Example of change in attitude and/or behavior that is associated with **best practices** shared on various topics regarding large carnivore management to **authorities, institutions and conservation actors** (#B1, #B2, #B4). How did attitudes and behavior change and in which way?
B) Example of change in attitude and/or behavior related to measures of **herd protection and their financial options** (#B7). Who has changed attitude and behavior and in which way?
3. Example of change in attitude and/or behavior as a result of improved capacities in **communication** to deal with **conflict situations** (consensus-oriented approach). What happened after participating in the respective project training?
4. Example of **challenges and constraints** to achieve intended results. What did not work out as intended and why?

Structure of the reflection sheet

For each reflection exercise/topic, the reflection sheet begins with an explanation of the specific **background** and **objective** of the exercise. Then, in the second part, **guiding questions** are provided that lead through the reflection process regarding the respective perceived changes. Finally, the third part leaves space to document **the story** in detail following the guiding questions. Partners were asked not to hesitate to also share ‘negative’ examples, as these also contribute to learning from experience.

These examples will provide a better understanding and communication tool for *how* project activities impact on stakeholders and may indirectly affect large carnivore management and human coexistence with large carnivores.

Focal points were suggested to reflect as a team on suitable examples for each section. However, partners were also welcome to fill the reflection sheets individually.

Three stories of change were thus projected for each focal point and project region. A final amount of 35 stories was received, varying from four to nine per section (Table 2), depending on the complexity of the situation in respective population areas and the capacities of the partners.





Table 2 Return of qualitative stories of change ('Reflection Sheets')

Countries covered by focal points	Sections reflected upon				
	1	2A	2B	3	4
Adria (CRO & SL)	X		X	X	
AT	X		X	X	
DE	X		X		X
ES	X	X		X	
FI & NO		X			X
FR	X	X			X
HU		X		X	X
IT	X	X			X
PL	X			X	X
PT	X	X		X	
SK	X			X	X
UA			X	X	X
Number of exemplary stories	9	6	4	8	8

Excused: CH_it and RO

The examples of change as highlighted by partners in all reflection sheets were used directly for further preparing topic- and stakeholder-specific quantitative questions for the EU-wide online comparative stakeholder perception survey 2021. A detailed qualitative comparison of the different stories allowed for a selection of the most telling examples for each topic based on three criteria: relatedness to specific project activities, relevance of the change for achieving project goals, and the comprehensiveness of the descriptions of HOW changes took place, with whom, and to what end.

Quantitative Assessment of the Project's Impact - EU wide online comparative stakeholder perception surveys

Survey Design

The questionnaires for the 2018 and 2021 surveys were designed and provided by the Forest Research Institute of Baden Wuerttemberg (FVA) during the first project year (2018) and at the end of the last year (2021) of the project lifetime. The research questions and specific topics were formulated based on the #C1 task description in the Grant Agreement taking into account developments in the different project actions throughout the project lifetime. In addition, it was agreed with blue! and the project coordinator that additional questions would be posed to contribute data for the assessment of selected 'Key Performance Indicators' (KPI) originally not considered a responsibility of #C1.





A first comprehensive version of the 2021 English Master questionnaire was designed using google forms¹¹, the project's main software tool for internal and external surveys and data collection. The content was based on 15 selected questions from the Baseline Survey in 2018 to be repeated (six topical and nine demographic ones) and addressed 25 additional questions necessary for detecting relevant changes that may have taken place during the project lifetime. The final design took experiences from the survey 2018 into account and focused on specific indicators with fewer and shorter questions which are directly related to the project activities. In sum, 40 closed and obligatory questions were posed with single or multiple choice answers, taking about 30 minutes to answer, in contrast to the rather lengthy Survey 2018 with 78 partially open questions.

The first version of the 2021 questionnaire was tested by the project partners concerning terminology, logical structure, cultural appropriateness, understandability and translatability of questions and proposed answers as well as technical faults. After revision, the questionnaire¹² was translated into the 12 languages of 14 focus regions by project partners (all but the Scandinavians, who did not include this action in the grant proposal), again using google forms.

Survey Distribution

In a concerted action led by scientists at the Forest Research Institute of Baden-Württemberg (FVA), stakeholders of these 14 focus regions were then invited to participate in the surveys. We advertised study participation using various approaches: via e-mailing lists based on the comprehensive “Logbook of contact to stakeholders”¹³ of the Project partners, followed by one reminder and the announcement of a one-week time-limit extension. According to the ‘Tailored Design Method’ described by Dillman et al. (2014) and also used by Poudyal et al. (2020), survey announcements were also spread via social media and the questionnaire was made accessible on the websites of most partner institutions. This pyramid distribution made it possible for survey participants to further share the survey via snowball system distribution (Atkinson and Flint, 2004; Lühtrath, 2011; Baumeister et al., 2021). Online participation was possible from 6th to 27th Sep. 2021.

Description of the return 2021 compared to 2018

After the closure of the survey, the country datasets were aggregated, cleaned and fully coded for analysis. The remaining database consisted of 1056 datasets.

For comparability on a European level, specific answer sets from two country surveys (Italy (IT) and Italian speaking Switzerland (CHit)) could not be included in the analysis as they were inserted individually by their focal points concerning an additional carnivore species [Golden Jackal] neither addressed by the Master Template nor in the other countries’ questionnaires.

¹¹ see <https://goo.gl/forms/Hu0ZhrdQLy5kwJby1>

¹² [ELC C1 Final Report ANNEX Quest LC in Europe 2021 EN MASTER.pdf](#)

¹³ see <https://goo.gl/forms/KAJVmEPdzSFsofuK2>





The return of the Survey 2021 was presented in descriptive statistics in comparison to the return cohort of the Baseline Survey 2018. Due to the European Union’s General Data Protection Regulation (GDPR), we could not address the respondents of the Survey 2018 directly again. Additionally, due to the open accessibility of the survey on social media, no concise distribution list of the recipient population is available. Consequently, the responses to our survey are neither statistically representative for the societies in the partner countries, nor a proportional representation of the different stakeholder categories. Neither is it possible to calculate the return rate of the final sample. We assume a comparability of the two datasets based on the following similarities:

With a total return of 1056, the Survey 2021 reached almost the scope of the Baseline Survey 2018 (n=1262) with $\Delta 16\%$. As in 2018, in 2021 the number of returns per country differed substantially, ranging from seven to 248 responses (see Figure 4). In some countries major changes in the total number of responses were observed, e.g. three times as many returns from France (108 vs. 34) to more or less a third from Hungary (133 vs. 374) or Italy (14 vs. 46). Some respondents stated to live in countries in which the survey was not actively distributed. These datasets were subsumed under ‘other’ countries, as the respondents are also European residents (e.g. from Finland, Sweden, Norway). This uneven country representation limits the potential for direct country comparisons. These will therefore only be conducted for a few questions and only for countries with $n \geq 30$.

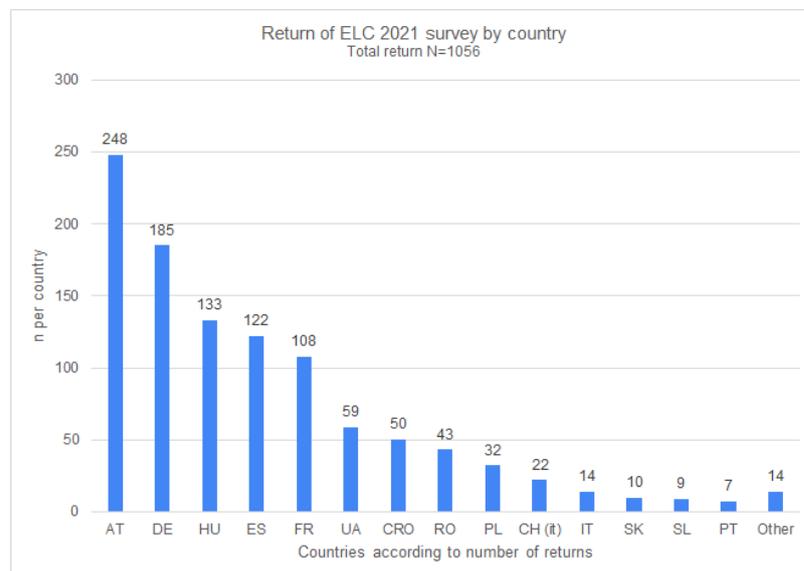


Figure 4 Return per Country in 2021





Demographic information such as age, gender, educational background and occupation of the respondents compare as follows.

Age

Overall, 83.4% of respondents in 2021 are of working age from 21-60, spanning two age classes (see Figure 5). This corresponds to the rate of 86.7 % for this age group participating in the Baseline Survey 2018. The majority of the remainder are in retirement age (14.5%).

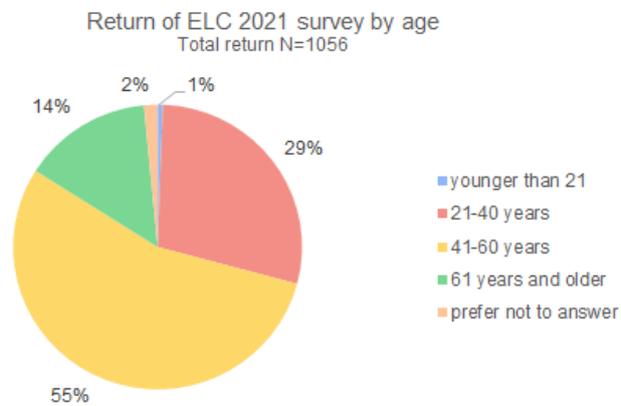


Figure 5 Return of the ELC Survey 2021 by age class

Gender

As a rough average, one third of the respondents in both surveys are women. In 2021, 30% of the respondents were female (see Figure 6), not quite reaching the 35% of women participating in the Baseline Survey 2018.

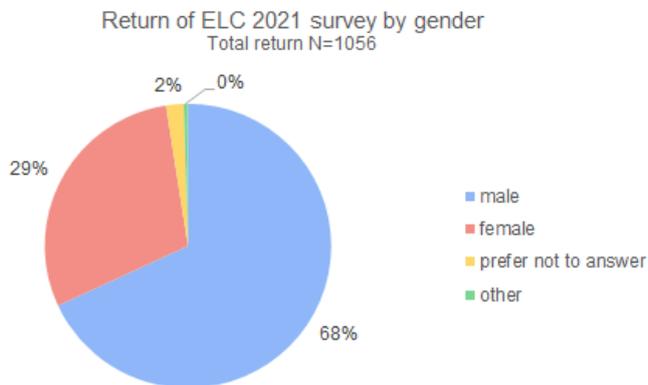


Figure 6 Return of the ELC Survey 2021 by gender





Educational background

Respondents with a College or University degree dominate the 2021 return with 72%, as they did in the Survey 2018 with a comparable 71.4%, resulting in almost three quarters and consequently an over average number of participants with an academic background (see Figure 7).

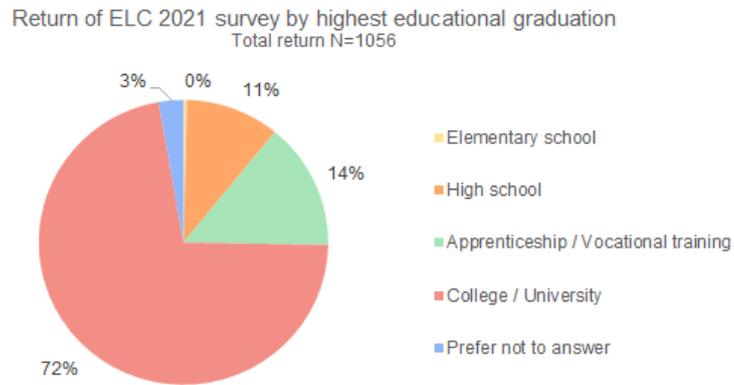


Figure 7 Return of the ELC Survey 2021 by highest education

Size of settlement

More than half (57%) of the respondents in 2021 live in rural areas and settlements with less than 5,000 inhabitants (see Figure 8), versus 44% in 2018, which makes an increase of 13%. 10% live in smaller towns between 5,000 and 10,000 inhabitants (9.8% in 2021 vs. 10.3% in 2018), while almost one third of the 2021 respondents (31%) live in cities compared to 40% in 2018, a respective decrease of 9%. These figures indicate that the 2021 cohort encompasses more respondents from rural areas than in 2018 where the representation of rural and city dwellers was more balanced.

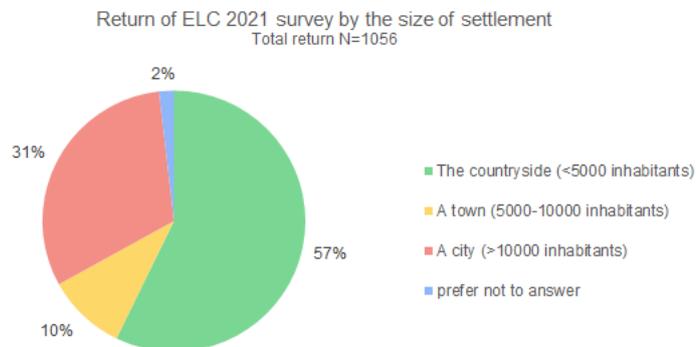


Figure 8 Return of the ELC Survey 2021 by size of settlement





Occupations and allocation to stakeholder categories

In Question 35 (Q35¹⁴), respondents were offered the unrestricted multiple choice out of 14 different occupations and membership in related types of associations they are engaged in as professionals, experts, volunteers or as a hobby (including ‘other’). The selection of given answers was linked directly to the ten main stakeholder categories identified during the project’s stakeholder identification and mapping process (#A2) supported by results from the Baseline Survey 2018. It is important to note, that almost 100% of the respondents chose two or more occupations (on average 2.4, ranging from one main (professional) occupation to one singular extreme of all 14). This is in line with the concept of Goffman (1963) who refers to extensive avocations especially in rural societies and indirectly to a more restrictive application in urban societies. Respondents were asked to differentiate a general occupation with and/or formalized memberships in a related association or NGO so that we would be able to differentiate an assumed subsample of persons with more professional engagement for a certain interest. To account for obvious overlaps in the description of the overall return, we merged these self-attributions into one category each. This reconfiguration resulted in the original ten main stakeholder categories plus ‘other’. Figure 9 depicts their distribution in the survey return.

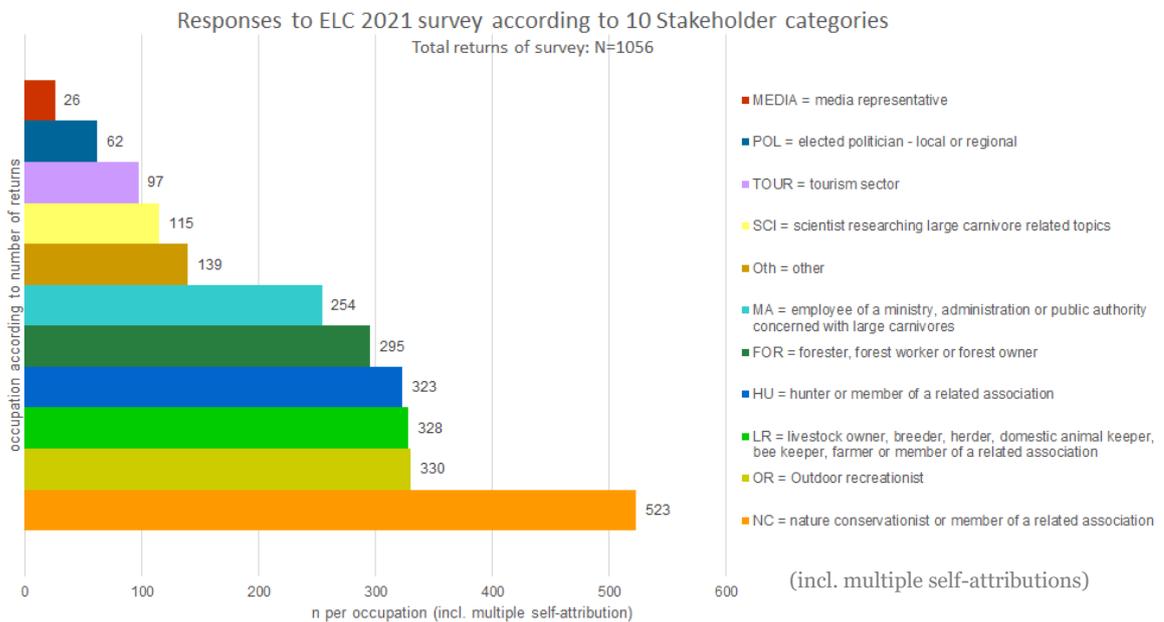


Figure 9 Return of the ELC Survey 2021 by Occupations

¹⁴ Qx indicate the number of the question addressed in the respective questionnaire (2018 or 2021)





One important finding is that responses were received from representatives of all ten stakeholder categories (Grossmann et al., 2020; Sevecke, 2018). Due to the multiple choice format and the consequential double counts, the sum of occupations listed by all respondents adds up to 2493. Comparing the distribution of the stakeholder categories in both surveys, Nature Conservationists (NC) are the stakeholder category represented most with exactly 49.6% in both surveys, while the participation of for Livestock Raisers (LR) increased in 2021 (31.1% vs. 25.4%) but decreased for Hunters (HU) (30.6% in 2021 vs. 34.2% in 2018). Outdoor Recreationists (OR; 31,2%) have a similar representation and are closely followed by Foresters (FOR; 28%) and Employees of related Ministries and Administrations (MA; 24%). Lower but appreciated return figures are observed for Scientists (SCI), the Tourism Sector (TOUR), Policy Makers (POL), and Media Representatives (MEDIA), in this order. The distribution of these stakeholder categories per country with a return of n>100 is displayed at the end of this subchapter.

A total of 558 respondents (52.9% of 1056) state that they are official members of at least one institutional organization of the three main stakeholder categories Hunters (HU), Livestock Raisers (LR) and Nature Conservationists (NC), further on labeled as HUorg, LRorg or NCorg. By chance, the amount n=558 is exactly the same number of institutionally organized respondents of these interest groups as in the Baseline Survey. In 2021 213 were members of a hunter association (38.2%), 163 members of an association dealing with livestock and domesticated animals (29.2%), and 308 members of a nature conservation or environmental NGO (55.2%) (Figure 10), including double counts.

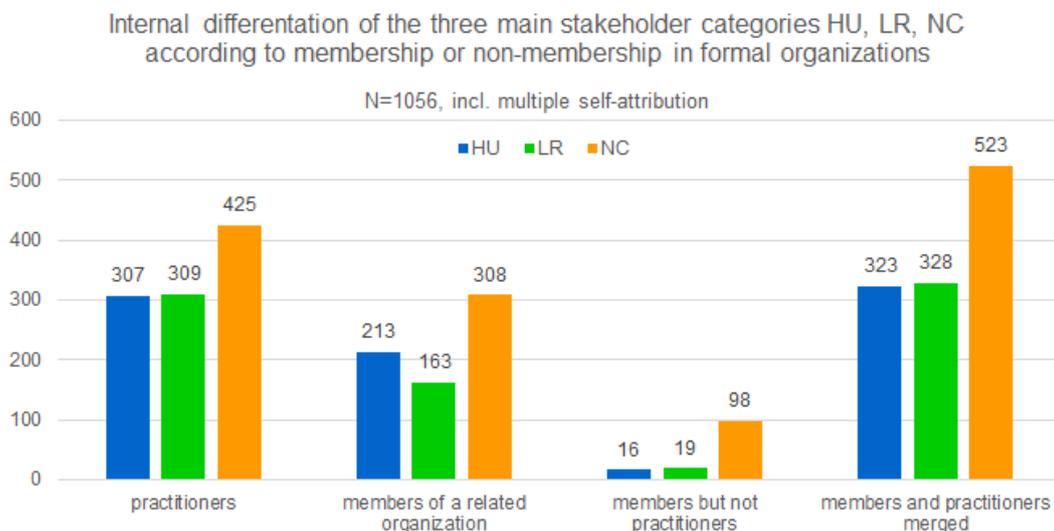


Figure 10 Interest groups differentiated according to practiced occupation and formal organization





The relevance of multiple self-allocation by individuals to more than one occupation (the so-called “double or multiple counts” for stakeholder networks has been discussed in Grossmann et al. (2020) and is visualized best by the intersections of a Venn Diagram. The following Figure 11 displays exemplarily the number of respondents who are organized members in associations of two or even three of these stakeholder categories.

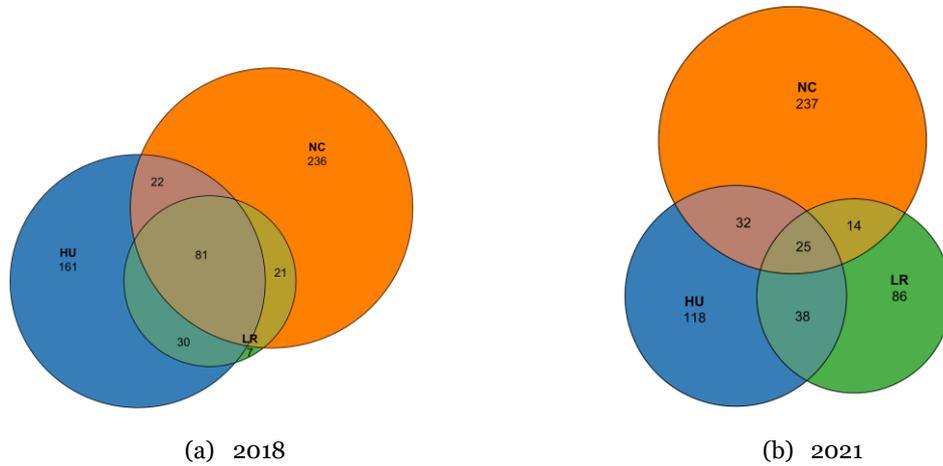


Figure 11 Distribution and overlap of respondents’ official membership in Hunters or Livestock Raisers Associations or Nature Conservation related NGOs in 2018 and 2021

These Venn Diagrams visualize that in 2021 20% (n=109) of the 550 institutionally organized stakeholders in the categories Hunters (HU), Livestock Raisers (LR) and Nature Conservationists (NC) were members of at least two organizations of different categories (compared to 27.6% in the Baseline Survey), and 4.5% (n=25) are members of organizations from all three categories (compared to 14.5% in the Baseline Survey). This reduced multi-membership needs to be taken into account when interpreting similarities and differences of the three subsamples HUorg, LRorg and NCorg.

Last not least, we distinguished the share of project partners participating in the surveys: 12.7% in 2021 compared to 4.9% in 2018, who in terms of this study are stakeholders of this project and large carnivore management in their own right.

Presence of Large Carnivores

Not all focus regions are similarly populated by different large carnivore species. Based on the question ‘The following animals are generally called “large carnivores”. Which ones are currently present in your local area?’ (2018 and 2021 Q1 resp.), Figure 12 shows that respondents are more or less directly affected by the presence of the following three species. Wolves are the species that coexist with 77.1% of the respondents, by permanently living in or sometimes entering their local areas. 52.0% of the respondents similarly coexist with lynx, followed by 32.4% of the respondents living in or near bear roaming areas.





The following animals are generally called “large carnivores”. Which ones are currently present in your local area?

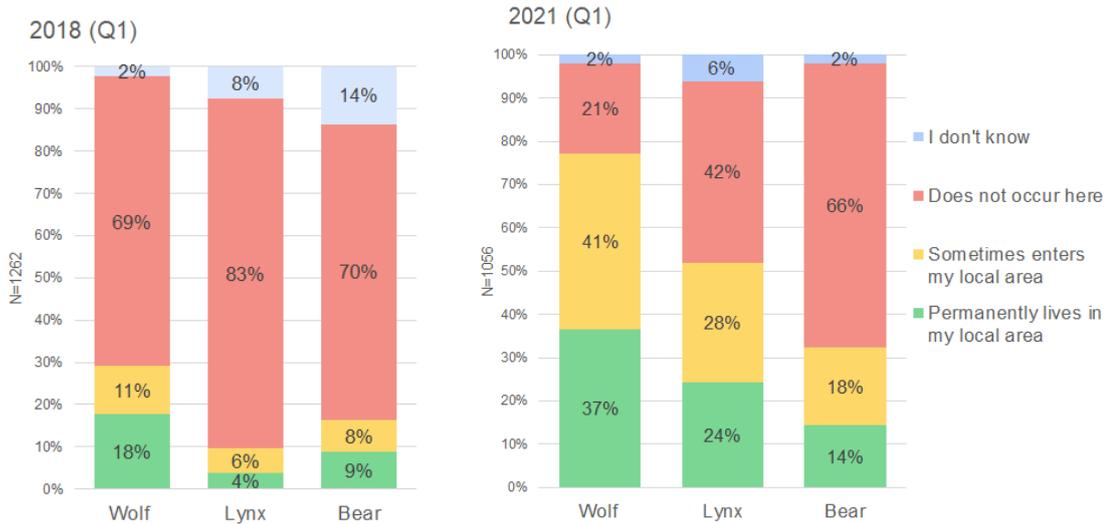


Figure 12 Coexistence of survey respondents with three large carnivore species in 2018 and 2021

Compared to 2018, permanent or infrequent coexistence of respondents with large carnivores has increased by two to three times (double for wolves, almost triple for lynx and more than triple for bears). Factual population data of these species in Europe are documented by official monitoring data. Growing populations of wolves are certain at least for BeNeLux+De area. (e.g. for Germany accessible under <https://www.dbb-wolf.de/home>).

Based on the predominant coexistence of the respondents with wolves, we concentrate our analysis of specific questions on this species. Most questions discussed in this report focus on the large carnivore issue more generally, addressing all three species together.

In addition to the uneven distribution of returns per country, the data also display an uneven distribution of stakeholder categories per country (see Figure 13), e.g. Spain with an over-average return rate of ‘Employees of ministries and public administrations (MA)’, the Hungarian sample dominated by Foresters and Hunters, Germany contributing an over average rate of Nature Conservationists (NC), while the Austrian sample displays a fairly even distribution of these three main stakeholder categories. This finding leads us to the assumption that the aggregation of all country data into a European sample evens out these differences and allows us to focus in-depth analyses more on stakeholder categories rather than the country level. Still, these observations do not allow an easy hypothesis for potential correlations and would need a more in-depth correlation analysis.



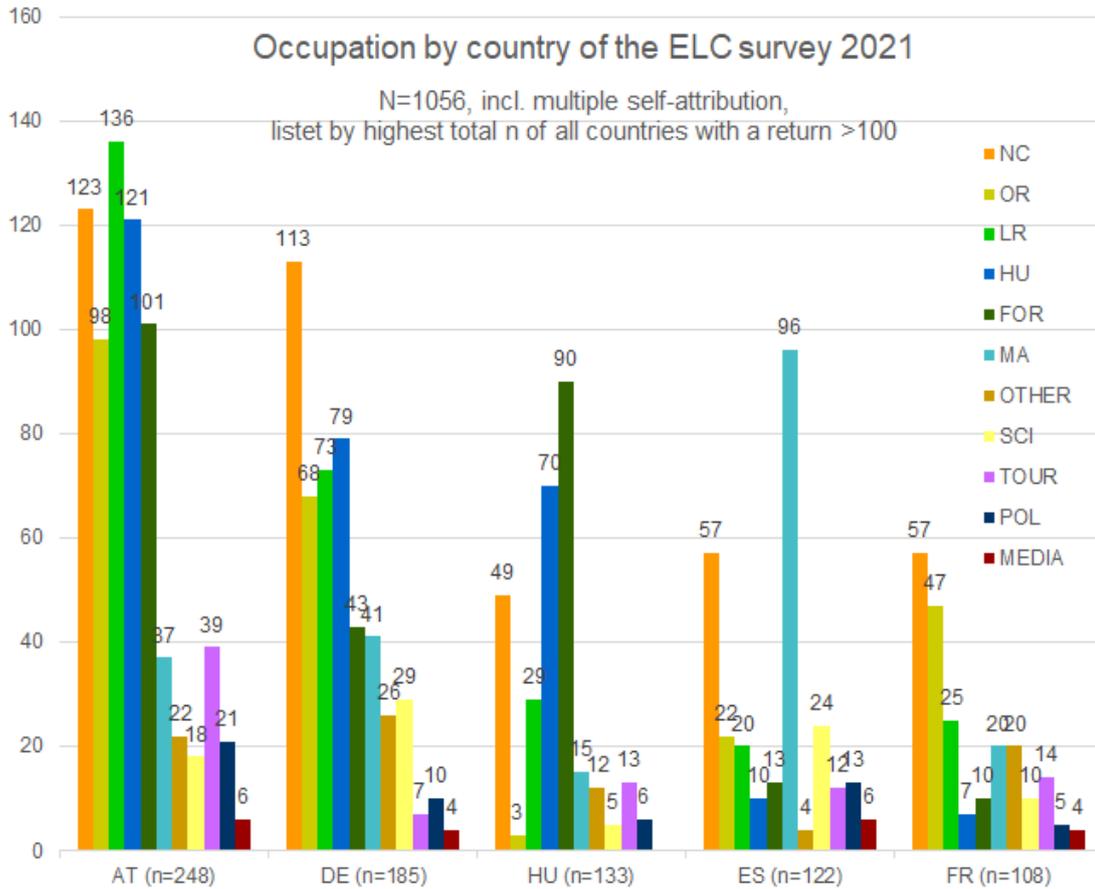


Figure 13 Distribution of different stakeholder categories in the returns per country

Summarizing these similarities and differences, the overall high returns and the fact that all ten stakeholder categories are well represented in our samples, including stakeholders who belong to often underrepresented categories (Linnell, 2013), are interpreted as indicators that a sufficiently broad range and amount of stakeholders have been compiled in our database to answer the research questions of this study. The uneven returns of stakeholder categories per country suggest a higher influence of the occupations of the respondents on the overall results than of their national origin.

Consequently, as in the Baseline Survey, mainly the aggregated dataset is analyzed, as to represent a merged European perspective (without Scandinavia). Potentially influential major differences between the samples and general changes over time are taken into account when interpreting the results. The analysis thereby focuses on the research questions dealing with perceived changes of attitude, knowledge in relation to the ten topics introduced above and the assessment of the project's influence on these changes.

Based on these demographic and project-related variables, we further assess and interpret the data according to the research questions and survey topics.





Results

Qualitative reflection of project outcomes and impact

35 stories of change were provided by the project partners narrating their individual experiences about how the project and its activities induced changes in the different focal regions, within their stakeholder networks and towards their set goals. The collected data was coded through open, axial and selective coding (Boeije, 2009). First, the narratives were openly structured in terms of contextual information and data revolving around specific project activities. Second, we distinguished how observed developments were described regarding their past, present, and (potential) future. Based on a detailed comparison of these various narratives, we selected 12 most stringent and telling examples. These stories of change are considered explicatory material serving a deeper understanding of changes detected in the quantitative stakeholder perception surveys (Olsen, 2014). We therefore present them and the conclusions derived thereof in the form of individual 'boxes' within the following results section.

- ❖ Box 1: Expansion of networks and improvement of relationships.
- ❖ Box 2: Communication skills used in stakeholder meetings.
- ❖ Box 3: Collaboration with farmer associations improving the practicability of prevention measures.
- ❖ Box 4: Working with pioneers on herd protection.
- ❖ Box 5: Spotlight reflections on stakeholder knowledge and behavior concerning financial support programs for large carnivore damage prevention and compensation.
- ❖ Box 6: Cooperation with government institutions in the development of financial support systems for herd protection.
- ❖ Box 7: Self-reflection of conservation actors on their role within stakeholder networks - neutral facilitation of potentially conflictual meetings.
- ❖ Box 8: Challenges, improved communication techniques, trust building and consequent cooperation on monitoring.
- ❖ Box 9: Fact based and balanced media coverage.
- ❖ Box 10: Do we change the farmers' attitudes towards large carnivores?
- ❖ Box 11: Dis-continuation of activities challenging change on the ground.
- ❖ Box 12: Replication of methodologies developed within the project.

Change is never mono-causal. Social and behavioral change depends on many internal and external influencing factors and frame conditions under which change is either inevitable or recommended. And change needs time! Consequently, respective outcomes and impacts on the stakeholder level of a vast project like the EU LIFE Project EuroLargeCarnivores can neither be traced back to one activity nor be assessed comprehensively.





Individual and in-person group encounters and specific situations often provide catalyzing opportunities for relevant persons to meet and for supportive factors to fall together and find fruitful ground for sparking change. The ‘stories of change’ elucidate nicely how different project activities allowed to acquire new knowledge and skills, how they were applied and how they impacted specific developments, not only by project partners. How the project and its highly motivated partners created and took up opportunities for new encounters and for intensifying cooperation with different stakeholders in the common interest of finding solutions for difficult situations evolving in parallel to the return of large carnivores. These interdependencies of different project activities were intentional from the very beginning of the project planning process, often building upon each other, and this is well reflected in these stories of change. The narratives usually address more than one aspect of project activity, change induced and impact observed. Reflections on different aspects of network development and the acquisition of communication and negotiation techniques for the purpose of improving livestock protection and a better coexistence with wolves dominate the return. Consequently, not all research topics are provided with an in-depth exemplary reflection of change. At the same time each ‘box’ could be allocated to different research topics. They can be found in those sections where they provide the most prominent explicatory information. Therefore, the box on main challenges and constraints perceived as hindering the overall impact of the project is placed in the final pages of the results section.

Monitoring the Impact - an EU wide comparative stakeholder perception survey

The results of the quantitative part of the comparative stakeholder perception survey follow the four guiding research questions assessing changes in awareness, knowledge, behavior and related challenges in relation to different project activities along topics described in the theoretical framework. Depending on the topic, the analyses focus on different selected stakeholder categories and distinct levels of impact on stakeholder level, determined by the aims and target groups of the corresponding project activities.

Impact Variable - Participation in project events

One important variable to assess the impact of the project is the respondents’ participation in project activities. According to the monitoring data more than 3000 individuals participated in one, another, or several project activities and events. In our survey 260 out of 1056 respondents stated to have participated in ‘any events or activities organized by or related to the EU LIFE EuroLargeCarnivores Project - in person or online’. For the impact study, we are therefore able to differentiate and compare subsamples of respondents who did (24.6%) or did not (62.4%) participate in such events (Figure 14). A challenge is the allocation of the remaining 13% who state that they are not sure whether or not they have participated in such an event. Comparisons of the response behavior of these three subsamples show that those certain to have participated and those ‘not sure’ about it are often fairly similar and differ clearly from those who did not participate in





such an event at all. This indicates that the ‘not sure’ respondents probably have participated in respective events but are not sure whether or not these were organized by or related to the project or offered by other institutions. At the same time, similar events and training offered by other institutions but not related to the EU LIFE EuroLargeCarnivores Project are external but comparable influences on stakeholder perceptions, knowledge and behavior. For a conservative assessment of the impact of the EU LIFE EuroLargeCarnivores Project, we therefore focus on the comparison of those two subgroups who were certain about participation or non-participation in project related activities.

Have you taken part in any events or activities organized by or related to the EU LIFE-EuroLargeCarnivores project - in person or online?
N=1056

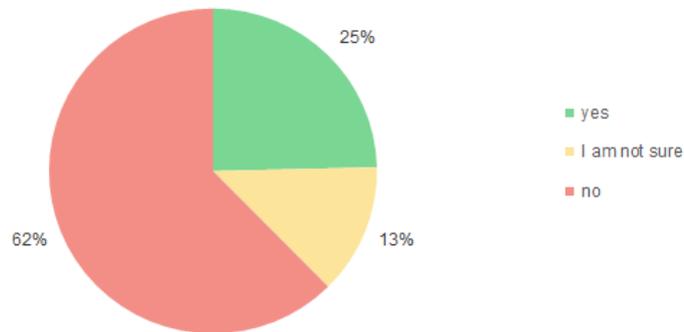


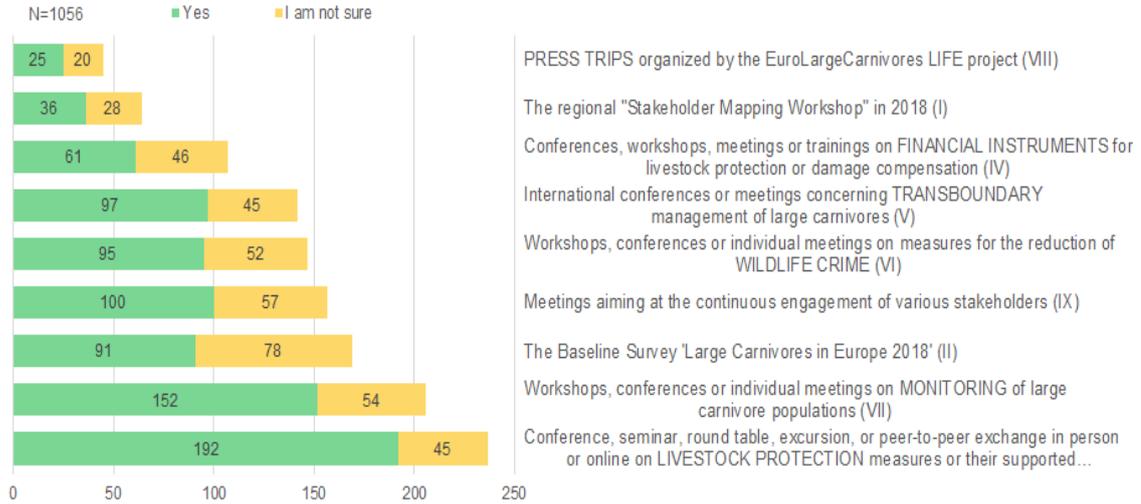
Figure 14 Participation in any ELC project activity or event

The following figure 15 differentiates the participation of survey respondents according to specific project events and activities. This question was posed only to those who stated ‘yes’ or ‘I am not sure’ for participation in any project activity (Q30), which explains the missing data for ‘non-participation’. We will refer back to these figures when describing the results of the different research topics. Overall, the sample includes participants of all different topic specific types of events, workshops, seminars, training or exchanges whose influence is also assessed in some detail.





In which of the following events/trainings have you participated - in person or online?



*n in beams include multiple choice (double counts) and exclude answers 'no' and 'not applicable'

Figure 15 Participation in specific topic oriented ELC events

a) Improvement of self-efficacy

To assess the share of persons who state that their self-efficacy in regards to large carnivores has improved, the responses to the question 'How would you rate your own preparedness to deal with issues concerning large carnivores?' posed in the two consecutive surveys were compared (Q65 in 2018; Q6 in 2021, see Figure 16) and then analyzed according to respondents' participation in project activities.

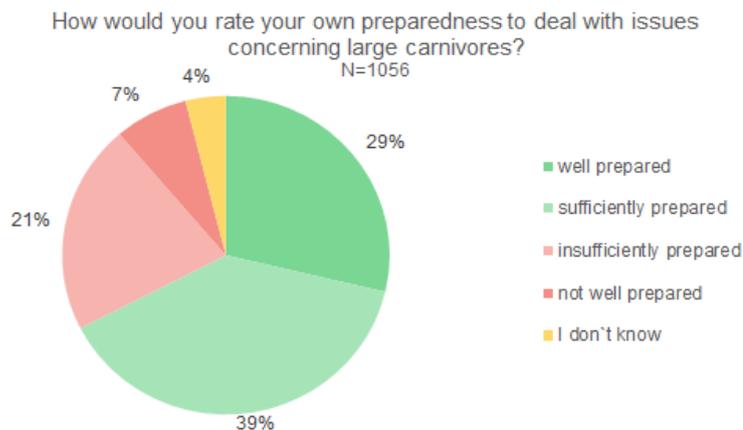


Figure 16 Preparedness for issues concerning large carnivores in 2021





In 2021 67.4% of all survey respondents stated that they were prepared (well or sufficiently) to deal with issues concerning large carnivores. This is 12% more than the respective 54.9 % respondents in 2018 (see Table 3). Focusing on the levels of preparedness, the results show that the main changes take place in the portion of ‘well prepared’ respondents rising from 15.5% in 2018 to 28.7% in 2021. This increase in ‘well prepared’ persons is mainly balanced by a decrease in the group of ‘insufficiently prepared’ persons (reduced by 14%, from 35.3% in 2019 to 21.3% in 2021).

Table 3 Self-efficacy in regards to large carnivores

How would you rate your own preparedness to deal with issues concerning large carnivores? (Q6 overall)					
% of Respondents...	... 2018	... 2021	... 2021 participated in a project activity	... 2021 not sure if participated in a project activity	... 2021 did not participate in a project activity
	(N=1262)	(N=1056)	(n=260)	(n=137)	(n=659)
well prepared	15.5%	28.7%	38.1%	27.0%	25.3%
sufficiently prepared	39.4%	38.7%	41.5%	36.5%	38.1%
insufficiently prepared	35.3%	21.3%	16.2%	27.7%	22.0%
not well prepared	7.1%	7.3%	1.5%	5.8%	9.9%
I don't know (2021) / No answer (2018)	2.8%	4.0%	2.7%	2.9%	4.7%

In a next step, the survey respondents who considered themselves ‘well prepared’ in 2021 were differentiated into one group that had participated in at least one project activity (n=260) and another group that had not (n=659). A 22.6% increase of ‘well prepared’ persons in the subsample ‘participants’ was identified (from 15.5% average in 2018 to 38.1% in 2021). This is more than twice the 9.8% increase of ‘well prepared’ respondents who were also identified in the subsamples ‘non-participants’ (from 15.5% average in 2018 to 25.3% in 2021). In the group of ‘participants’, the share of ‘sufficiently prepared’ persons also increased slightly, while the share of ‘insufficiently prepared’ and ‘not well prepared’ as well as those who seem not to be able to assess their state of preparedness (‘I don’t know’) decreased considerably, compared to those who did not participate in any project activity. The additional column for respondents who are ‘not sure if [they] participated in a project activity’ is not described in detail, as their average mainly ranges in between those respondents who did and those who did not participate. The only outlier in this group is the comparably high share of respondents (27.7%) who feel ‘insufficiently prepared’ to deal with issues concerning large carnivores. All in all, 79.6% of those respondents who had participated in a project activity considered themselves ‘prepared’ (well and sufficiently) to deal





with issues concerning large carnivores. As this figure does not allow for a direct deduction as to whether this state of preparedness is actually an improvement over time, this percentage was compared with the average of all respondents in 2018 and thereby derived an additional 25.6%, or an increase of 47%, of 'better prepared' respondents in relation to their participation in project activities.

b) Development of stakeholder networks

738 or 69.9% of all respondents in 2021 stated to be actively engaged with other people or institutions concerning the coexistence with or management of large carnivores in their region (filter question Q8¹⁵) (compared to 44.4% in 2018). This result indicates an increase of 25.5% of additional stakeholders newly engaged in networking during the past three years. Only this subsample was then requested to answer subsequent questions on regional networking.

Of these 738 active networkers almost half (49.2%) state that their current degree of networking helps them a lot with their work/everyday life, while about a quarter state that it either helps them more or less (26.6%) or only rather little (24.3%). Explicit goals of different project activities were raising awareness about the importance and helpfulness of network activities, improved network constellations and relationships, support in developing skills about how to improve them and for stakeholders to hopefully make good use of them.

To assess the different impact levels of project participation, the survey respondents were therefore asked to agree (fully or rather) or disagree (rather or fully) to the following statements (Q11I-VI; see Table 4). For a more in-depth assessment of the influence of the EU LIFE EuroLargeCarnivores Project, we further differentiated the subsample of 219 (29.7%) active networkers who stated to have also participated in a project-related event or activity in comparison to those 402 who did not (54.5%). The not listed remainder to 100% are those active networkers who were not sure whether they had participated in a project event or not.

¹⁵ Q8: Do you actively engage with other people or institutions concerning the coexistence with or management of large carnivores in your region? (Yes/no)





Table 4 Changes in stakeholder network development since 2018 (awareness, knowledge, skills, behavior and impact on stakeholder level) in relation to participation in project activities

To what extent do you agree with the following statements? Since 2018....				
Statements (Q11, n=738*)	Agree	Disagree	I don `t know	n
AWARENESS				
It is important to get in contact with newly identified relevant stakeholders in the future. (V)	78.5%	16.8%	4.7%	738
thereof:	90.0%	8.2%	1.8%	219
Participant of any ELC activity (Q30(1))				
Did not participate in any ELC activity (Q30(3))	72.1%	21.1%	6.7%	402
INTENTION				
I intend to participate in stakeholder forums concerning the management of large carnivores. (VI)	70.6%	21.0%	8.4%	738
thereof:	84.0%	10.0%	5.9%	219
Participant of any ELC activity (Q30(1))				
Did not participate in any ELC activity (Q30(3))	63.2%	27.4%	9.5%	402
KNOWLEDGE				
... I have learned about "new" stakeholders to be relevant for large carnivore management whom I was not aware of before. (I)	61.2%	34.6%	4.2%	738
thereof:	72.1%	25.1%	2.7%	219
Participant of any ELC activity (Q30(1))				
Did not participate in any ELC activity (Q30(3))	55.2%	40.0%	4.7%	402
KNOWLEDGE/SKILL				
... I have learned techniques on HOW to engage with "new" stakeholders whom I had not engaged before. (II)	50.7%	42.7%	6.6%	738
thereof:	65.8%	30.6%	3.7%	219
Participant of any ELC activity (Q30(1))				
Did not participate in any ELC activity (Q30(3))	42.8%	50.0%	7.2%	402
BEHAVIOUR/OUTCOME				
... I am now in regular contact with "new" stakeholders whom I did not engage with before. (III)	50.5%	44.6%	4.9%	738
thereof:	62.6%	36.1%	1.4%	219
Participant of any ELC activity (Q30(1))				
Did not participate in any ELC activity (Q30(3))	44.3%	49.3%	6.5%	402
OUTCOME				
... I have IMPROVED my relationship with at least one or more stakeholders in my network. (IV)	57.3%	35.6%	7.0%	738
thereof:	71.7%	23.3%	5.0%	219
Participant of any ELC activity (Q30(1))				
Did not participate in any ELC activity (Q30(3))	49.0%	43.0%	8.0%	402

*respondents who actively engage with other people or institutions concerning the coexistence with or management of large carnivores (result of filter question Q8)

672 or 91.1% of the respondents actively engaged with other people or institutions agreed to minimum one of the listed statements, ranging from raised awareness (78.0%; statement V), intentions for the future (70.6%; VI), over improved knowledge (61.2%; I) and skills (50.7%; II) to changed behavior (50.5%; III) relevant for developing successful stakeholder networks. The receding percentages within the consecutive levels of change are clearly in line with the theory that raised awareness and skills do not always and usually do not immediately lead to changes in behavior but are relevant preparatory steps.





The 57.3% positive responses to the statement ‘*I have improved my relationships with at least one or more stakeholders in my network*’ (IV) already document a positive outcome, respectively a positive impact on stakeholder networks of these improvements in skills and behavior.

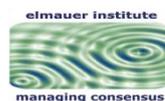
The influence of participation in project activities on networking was assessed by a closer look at the specific results for change in behavior (‘*I am now in regular contact with "new" stakeholders whom I did not engage with before*’ (Q11III) and outcome/impact on stakeholder level (‘*I have IMPROVED my relationship with at least one or more stakeholders in my network*’ (Q11VI). Participation in project events and training clearly contributed positively to a general positive development. It is rather participants of project activities than non-participants who confirm this positive development, shown here for levels of change in behavior (‘*contact with "new" stakeholders*’ (62.6% vs 44.3%) and ‘*improved relationships*’ (71.7% vs. 49.0%). The indented rows in Table 4 depict these over-average percentages of project participants with improvements for their stakeholder networks for each individual impact level.

The following Table 5 summarizes the most important finding about project outcome and impact on stakeholder level: 78.1% of those respondents who had participated in any kind of project event or activity AND are currently active in stakeholder networks related to large carnivore management are now in regular contact with ‘new’ stakeholders whom they did not engage with before and/or have improved their relationships to other stakeholders, compared to the average of 62.9%. A comparison of the two different types of impact especially indicates an improvement of relationships due to project activities. Though more diverse and more successful engagement in stakeholder networks seems to be a general tendency in the last three years, participants of the EU LIFE EuroLargeCarnivores Project have obviously benefitted from activities, training and events enabled by the project.

Table 5 Impact of participation in project events and training on improved networking, esp. contact to new stakeholders and quality of relationships

Improved networking based on selected indicators and participation in project activities					
since 2018	n	Contact to new stakeholders (Q11 III) %	Improved relationships (Q11 IV) %	... at least one of III or IV %
All respondents actively networking		738	50.5%	57.3%	62.9%
All participants of any ELC event or activity		219	62.6%	71.7%	78.1%

32 of those respondents that are actively networking also participated in “The regional ‘Stakeholder Mapping Workshop’” (#A2) in 2018 (Q31 I(1)) (see also Boxes 1 and 12). 23 (71.9%) of said





respondents also agreed to a minimum of one affirmative statement about improved networking (Q11). This project activity was led by the Forest Research Institute of Baden Wuerttemberg (FVA) at the very beginning of the project and included a guided systematic stakeholder identification process conducted by the project partners. The participatory stakeholder mapping workshops then aimed at mutually identifying further relevant stakeholders not yet active in the networks as well as providing a concerted assessment of the qualities of the relationships between different stakeholders depicted on the maps (Grossmann et al. 2019, 2020). Results suggest that the #A2 activity contributed to raising awareness and skills on how to identify and engage relevant ('new') stakeholders, especially those who were previously not active members of the project partners' networks. All other project activities, especially #B5 and all other direct encounters with stakeholders and (new) network members, offered additional opportunities to learn, practice and implement these skills to the effect of successful involvement of new stakeholders and improvement of relationships where necessary. An exemplary positive development of a regional stakeholder network and one already positive impact of successful cooperation with a new contact is described in Box 1.

Box 1 Expansion of networks and improvement of relationships

Project partner's report on new working relations with governmental institutions

During the stakeholder workshops at the beginning of the project the Ministry was identified as one key stakeholder for long-term work on the popularization of damage prevention measures, since it is responsible for a large quantity of nature and environment related spending under the EU's CAP and CFP. We engaged the Ministry through several formal and informal meetings, presenting the project and its aims. General cooperation was agreed upon, short-term related to a public call for subsidies for damage prevention measures, and long-term related to a cooperation in drafting the Croatia CAP strategic plan and ensuring better implementation of damage prevention measures in the following programming period. In the scope of this engagement, we noticed e.g. that bee keepers aren't eligible applicants for subsidies for the procurement of electric fences. We reacted and sent an argued memo to the Ministry and requested inclusion of beekeepers as eligible users. They in turn accepted our request. [...] This engagement was and is an opportunity for the project team to learn about subjects we haven't touched on before and are crucial for our long term efforts on enhancing coexistence between people and large carnivores, such as agriculture and forestry related regulations or land-use problems livestock owners have.

WWF Adria

The project enabled:

- Identification of and engagement with key stakeholders, that project partners did not engage with before; among these relevant governmental institutions and regional authorities
- Strengthened collaboration between NGOs and governmental institutions and authorities

This led to:

- Establishment of cooperation, e.g. for a public call for damage prevention measures or drafting the CAP strategic plan in the case of Croatia
- New opportunities to share technical expertise with decision makers; "being heard"
- Strengthened agency of project partners





- Knowledge exchange
- Learning and self-reflection by project partners, e.g. change of perspective leading to the capacity to better take into account the constraints of e.g. livestock owners

[Poland and Portugal report similar stories on new working relations with governmental institutions]

Challenges in regional networking

One of the results of the Baseline survey 2018 was the identification and ranking of the five ‘biggest challenges of networking within [each] country’ as perceived by respondents actively engaged in regional networking (see statements I-V in Table 6). Two of these are challenges directly addressed by the project (‘lack of knowledge/problem understanding by some groups involved’ (rank I); and ‘lack of communication’ (rank V)). The other three challenges are mainly influenced by external factors (‘contradictory economic interest’ (rank II), ‘different opinions on large carnivores’ (rank III) and ‘prejudices’ (rank IV), which the project tried to positively influence at least indirectly. In 2021, we revisited these challenges and again asked respondents actively engaged in regional networking about their perception of the respective challenges today. Has the challenging situation worsened, improved, or stayed about the same within their regional networks? For about half of the respondents all five challenges have remained unchanged (44.0% to 55.4%). For those two challenges that the project directly aimed to mitigate (I+V), more than a third of respondents (39.4% resp. 37.5%) perceive an improvement of the situation since 2018, in both cases twice as many respondents than those perceiving the situation as worsening. For the other three challenges, the pessimistic voices dominate slightly the optimistic ones.

Table 6 Challenges for cooperation in regional networks

The following challenges for cooperation in REGIONAL management of large carnivores were identified in our previous survey 2018.				
How do you rate the level of the challenges in your network today compared to 2018?				
The situation is now:	(Q12)	Worse (1)	About the same (2)	Improved (3 4 5)
I: Lack of knowledge/problem understanding by some groups involved		16.5%	44.0%	39.4%
II: Contradictory economic interests		27.0%	55.4%	17.6%
III: Different opinions on large carnivores		28.6%	47.6%	23.8%
IV: Prejudices		27.4%	48.9%	23.7%
V: Lack of communication		17.8%	44.7%	37.5%

n=738 respondents who actively engage with other people or institutions concerning the coexistence with, or management of large carnivores (result of filter question Q8 which leads to Q12)





c) Communication, negotiation, consensus orientation and conflict mitigation techniques

The main aim of Action #B5 was “[b]uilding capacity of local conservation actors (NGOs, authorities and independent conservation actors) in communication with stakeholders, including conflict resolution” (ELC FINAL Report as of 23.01.2022). Building on the stakeholder identification process and network maps (#A2), the Elmauer Institute developed and conducted a series of seminars and training introducing and teaching communication, negotiation, consensus orientation and conflict mitigation techniques in the context of nature conservation and large carnivore management issues in the first half of 2019 (#B5). In addition, both comprehensive training material, for further use on consensus driven stakeholder engagement, as well as stakeholder engagement plans for every focus area were developed. The main aim of these training workshops was to equip local motivated actors with the necessary communication techniques required for the engagement of stakeholders with different backgrounds and opinions and for the establishment of local stakeholder platforms. A total of 383 people have been reached at 16 events (ELC FINAL Report as of 23.01.2022).

The motivation and goal was to enhance these skills and to ensure that their implementation will contribute to the mitigation of human-human conflicts. In the course of the project, the target group of this #B5 Action was opened up in order to also offer participation to representatives of other institutions involved in the stakeholder networks. This prepared the ground for Action #B6 *Increase communication capacities: Motivate and engage stakeholders in continuous exchange* with the aim that “[c]onservation actors and managers will implement their plans and work collaboratively with stakeholders, on the basis of the capacities gained and engagement plans prepared in Action B5” (ELC Grant Proposal 2017). For a qualitative reflection of potential outcomes and impacts of such a process see also Box 2.

The most important variable for assessing the project's influence on the enhancement of respective skills and changes in behavior is the amount of survey respondents who attended such a specific seminar, training, or event as filtered by Q28.

279 of all 1056 survey respondents state to have ‘participated in at least one seminar or training on negotiation and communication techniques, which was associated with the EU LIFE EuroLargeCarnivores project’ (Q28). Here, we aggregated the respondents answering ‘yes’ (143) and ‘I am not sure’ (136) (Figure 17). We used this subsample under the assumption that the ‘I am not sure’ ones did participate in some related training but are not sure whether it was hosted by the project or not. This assumption is based on the fact that partners were recommended to find co-hosts from other stakeholder categories and neutral venues for these kinds of workshops as not to give the impression that this might be a one-sided lobbying activity (see #A2 Manual, 2018, and #A2 report (Grossmann et al., 2019)).





Participated in at least one seminar or training on negotiation and communication techniques associated to the ELC project

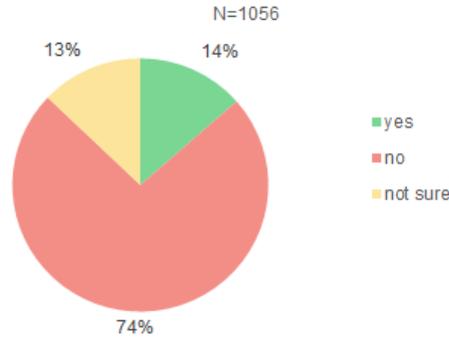


Figure 17 Participation in a project seminar or training on negotiation and communication techniques

90% (250) of these 279 participants agreed to have improved their communication and conflict resolution skills and strategies according to at least one of the five statements offered in Q29 II, III, IV, VI, VII, either by increased knowledge, changed behavior, or perceived positive impact (see Table 7).

The main result of this activity is an almost 100% awareness of the participants regarding the importance of ‘engage[ing] and listen[ing] to opinions that differ from my own’, also about two and a half years after the training took place. The communication and negotiation seminars were obviously perceived as very effective: 85% percent agree to have learned something useful and 65% already put their new skills to use in difficult or conflict situations. A first real impact on stakeholder level of this #B5 project action can already be detected as 55% or 154 of all training participants agree with the following statement: ‘Using the communication skills I have learned in one of the training has already helped to strengthen trust between me and other stakeholders’ (Q29 IV(1+2)).

Table 7 Improved communication and conflict resolution capacities of participants of #B5 activities

To what extent do you agree with the following statements?			
	Agree	Disagree	I don` t know
Communication skills and techniques			
AWARENESS			
It is important to engage and listen to opinions that differ from my own. (I)	99%	1%	0%
KNOWLEDGE/SKILL			
Since 2018, I have improved my communication skills that I can use in conflict situations. (II)	85%	7%	8%





BEHAVIOR I am using the communication skills that I have learned in one of the training, in conflict situations. (III)	65%	21%	14%
OUTCOME/IMPACT on stakeholder level Using the communication skills I have learned in one of the training has already helped to strengthen trust between me and other stakeholders. (IV)	55%	26%	19%
Communication strategies			
AWARENESS It is important for a network in a certain region to have a communication STRATEGY to engage with different kinds of stakeholders in order to improve large carnivore management. (V)	88%	7%	5%
KNOWLEDGE/SKILL Since 2018, I have learned HOW to develop and implement such a communication STRATEGY. (VI)	53%	30%	17%
BEHAVIOR I am now implementing such a communication STRATEGY to continue the dialogue. (VII)	51%	32%	17%

n=279: all respondents who “participated in at least one seminar or training on negotiation and communication techniques which was associated with the EU LIFE EuroLargeCarnivores project” (Q28(1+2)).

Box 2 Communication skills used in stakeholder meetings

Project partner’s report on successful communication training that enabled them to use consensus oriented approaches in following stakeholder meetings

I strongly believe that communication techniques that I gained during a B5 training, are a useful tool during human-wolf conflicts mitigation project activities. I feel that I am able to use them, but I want to explore them more. I think that it is a long process to improve these techniques and skills. Situations in which I was able to use communication techniques learned in action B5 took place both during physical and virtual meetings with stakeholders. [...] For example, there was an emotional discussion between supporters of wolf protection and representatives of opposing groups, who in some situations raise the issue of regulating the wolf population (hunters and livestock breeders). In the beginning it was difficult to control the development of the situation, but the focus in communication on solutions and building consensus allowed us to return to calm conversations. [...] In my opinion the use of such communication techniques and similar workshops can help in human-wolf coexistence issues in Western Poland. I would recommend running more similar workshops in small villages.*

WWF Poland

The project enabled

- Training and improving communication and mediation skills among conservation managers

This led to

- Successful use of these skills in meetings with different and conflicting stakeholders
- Mediating difficult discussions by focusing on common goals and reducing emotionality

*#B5: Increase communication capacities: Train local conservation and management actors in consensus-oriented approaches





A high 88% of the training participants are aware that a communication strategy is important. At the same time, change in respective knowledge and behavior does not quite reach the positive results found for communication and negotiation skills. But still, 53% of participants perceive an increase in skills regarding HOW to develop and implement such a communication strategy, 51% state that they already do so.

To focus this outcome on local conservation and management actors, we looked at the responses of those 98 communication training participants who are members of an association or NGO for nature conservation (Q35(6), Table 8). 88 (or 90%) of them agree that their attendance increased their respective knowledge, skills and/or active implementation of the newly acquired skills. This figure includes the subsample of 58 ‘employees of a project cooperation partner’ (Q34(1)), the original target group of the #B5 action.

Table 8 Improved communication and negotiation capacities of local conservation and management actors

Improvement of communication skills and strategies of conservationists managers			
	Participation in a communication training (Q28)	Improved own communication skills and strategies (Q29)	
	‘Yes’ and ‘Not sure’ n	Agree (%)	Disagree (%)
Members of an association or NGO for nature conservation Q35(6)	98	89.8%	10.2%
Employees of a project partner Q34(1)	58	96.6%	2.4%

n=279, all participants in at least one ELC seminar or training on negotiation and communication techniques Q28(1|2); total ‘Employees of a project partner’ n=134; total ‘Members of an association or NGO for nature conservation (NCorg)’ n=308

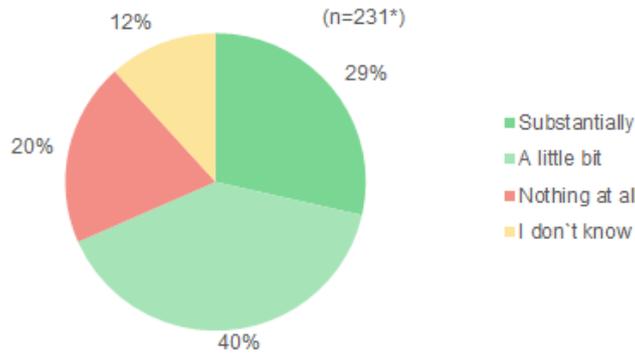
As the results show, this project action was an overwhelming success. Around 90% of the participating conservation managers, foremost the employees of the project partners, perceive an improvement of their own communication skills or strategies and more than half of them already successfully put them to practice.

Last not least, 69% of all responding participants of any project event (i.e. not only participants of the communication training) acknowledge a direct contribution of the project to their ability to mitigate conflicts between humans with regards to large carnivore management (see Figure 18).





To what extent did the ELC project contribute to your ability to MITIGATING CONFLICTS between humans, with regards to large carnivore management?



*n= 231 derived from 260 participants of any project event (Q30(1) - Q32 VII("not applicable (o))

Figure 18 Contribution of the ELC project to the mitigation of conflicts regarding large carnivores

Another project goal was to upgrade “jobs for local stakeholders and local/regional authorities through improved (communication and other) skills in large carnivore management or adoption of best-practices” (WWF DE. 2017). For the assessment, the focus lies on communication skills while the analysis followed the same patterns as the previous one focusing on conservation managers. From the return, we selected those occupations that best represent ‘local stakeholders and local/regional authorities’, i.e. ‘Hunter’ (HU), ‘Employee of a Ministry, Administration or Public Authority concerned with large carnivores’ (MA), ‘Elected Politician - local or regional’ (POL), ‘Forester, Forest Worker, or Forest Owner’ (FOR), ‘Tourism Sector’ (TOUR), and ‘Outdoor Recreationist (OR)’ (Q35(3,4,7,8,10,11,12)), while Nature Conservationists and Livestock Raisers were omitted from this specific subsample and analysis as they were and will be addressed separately in other sections.

Following this definition, 772 respondents were identified as relevant for this assessment. Thereof 95 (12%) stated to have participated in at least one seminar or training on negotiation and communication techniques which was associated with the EU LIFE EuroLargeCarnivores Project (#B5¹⁶: Q28(1)) while about the same number (97) was ‘not sure’ about having participated or not (Q28(2)).

86 or 90.5% of those 95 local stakeholders and local/regional authorities who are certain to have participated in such a project event agreed to have obtained either improved communication and other skills or even actively implemented them in their jobs since 2018 (Q29 II, III, VI, VII)¹⁷.

¹⁶#B5: Training of local conservation actors in consensus-based stakeholder engagement

¹⁷ II: Since 2018, I have improved my communication skills that I can use in conflict situations.





Comparing this figure to the collective of certain AND uncertain participants (192), we find an almost similar 90.6% (in real numbers 174) who agree to have improved skills that they can use or already implement ‘in conflict situations’, or who ‘learned and implement communication strategies to engage with different kinds of stakeholders in order to improve large carnivore management’ (Table 9). The similarity of the answering behavior of these two subsamples supports our hypothesis that these kinds of training are important and successful, even if we cannot directly allocate the outcome and impact to the EU LIFE EuroLargeCarnivores Project.

Table 9 Jobs for local stakeholders and local/regional authorities in large carnivore management upgraded through improved (communication and other) skills

Jobs for local stakeholders and local/ regional authorities in large carnivore management upgraded through improved (communication and other) skills			
	Improved communication and other skills		
	total n	Agree	Disagree
Local stakeholders and local/regional authorities n part. in #B5 (Q28 “Yes” AND “I am not sure”)	192	90.6%	9.4%
Local stakeholders and local/regional authorities n part. in #B5 (Q28 “Yes”)	95	90.5 %	9.5%

For a full assessment of further jobs upgraded through improved communication and other skills in large carnivore management or adoption of best-practices, other stakeholder categories and other improved skills would need to be included, e.g. the local Conservation and Management Actors who have improved and successfully applied newly acquired communication and conflict mitigation skills (n=168, see above) and Livestock Raisers with improved herd protection measures (n=52, see topic section d)). These additional figures further raise the number of jobs upgraded, indicating a very positive outcome of project activities.

A first real impact of these #B5 project activities could also be detected: 55% or 154 of all training participants agreed with the statement: ‘Using the communication skills I have learned in one of the training has already helped to strengthen trust between me and other stakeholders.’ (Q29 IV). To what extent this ‘upgrading’ will have an impact on the next level, like income generation, work efficiency or changes on sheep or large carnivore populations in regions of co-existence, would need

III: I am using the communication skills that I have learned in one of the trainings in conflict situations,

VI: Since 2018 I have learned HOW to develop and implement such a communication STRATEGY

V: I am now implementing such a communication STRATEGY to continue the dialogue.





further and more in-depth studies. How improved networking and communication skills can contribute to the enhancement of livestock protection is well described in Box 3 and Box 4 in the next section.

d) Livestock protection and control of risks related to large carnivores

One main aim of the EU LIFE EuroLargeCarnivores Project is to promote herd protection measures and other tools for the prevention of damages induced by large carnivores. Various activities, foremost #B7, have been developed and implemented to reach out to farmers, villagers and outdoor recreationists with information about techniques and material to reduce or prevent damages to domestic animals, not only to small livestock such as sheep and goat, but also cattle/calves and horses/foals, bee hives and dogs. They also included recommendations for human behavior in the presence of large carnivores to reduce risks of injuries. The project consortium prepared, implemented and distributed extension services, demonstration activities, peer-to-peer exchanges, demonstration material (like electric fences and direct support for installation), information material (print or online) about various other forms of herd protection and risk reducing behavior, and publicly accessible tutorials and feature stories on video, as well as contributing articles in the *CDPnews*¹⁸ (the Carnivore Damage Prevention Journal). For an exact description and amounts see the EU LIFE EuroLargeCarnivores Final Monitoring Report 2017-2022¹⁹ and the project website²⁰. The implementation and adaptation of such damage and risk prevention measures is expected to reduce damages and consequently conflicts related to the return of large carnivores.

The scientific review of LIFE project outputs (see #A1) has confirmed that electric fences are the most effective instrument implemented in past LIFE projects. There is less evidence in LIFE projects on the effectiveness of Livestock Guarding Dogs and Shepherds, but this is assumed to be due to low sample sizes. All three measures are eligible for subsidies in Europe during the new CAP period 2021-2027 (adapted from ELC FINAL Report as of 23 Jan. 2022).

As these three measures are ranking high among our team's expert opinion, the project partners included their promotion at events. 73 meetings with farmers/demonstrations and peer-to-peer events have been implemented with 2341 registered participants. Some of these events took place without recording attendance numbers, thereby underestimating the actual number of participating farmers (ibid.).

To assess the impact of these various project activities on changes in knowledge, skills and implementation of different herd protection measures, the analysis focuses on the response behavior of 'owners of domestic animals', that is people who 'own small livestock (e.g. goats, sheep), other cosmetic animals (e.g. cows, horses, dogs) or game kept in reserves, do you keep bees or work as a herder of small livestock'. 328 respondents of the 2021 survey belong to this

¹⁸ www.cdpnews.net

¹⁹ [DELIV50_MILE26.pdf](#)

²⁰ [Life Euro Large Carnivores](#)





subsample (Q13, answer= yes), equivalent to the number of respondents who stated to have the occupation ‘Livestock Raisers’ (LR) in Q35(1 ∩ 2).

52 (or 16%) of these stated to have actually taken up or adapted one or more improved herd protection practices within the project’s lifetime (*‘Since 2018, I have started to establish or have improved it’*). Another 87 (27%) state that since 2018 *‘I have learned more about HOW to use it’*. These two groups add up to 139 (42%) of the responding Livestock Raisers who have increased their knowledge and/or changed their behavior concerning herd protection practices.

In the following table 10 the question is differentiated according to types of herd protection measures promoted by the EU LIFE EuroLargeCarnivores Project (Q14, eight measures (I-VIII), multiple choices possible). The herd protection measures are ranked according to the share of practical uptake since 2018.

Table 10 Improved livestock protection measures learned about, improved or implemented

Which statement about the following livestock protection measures fits your situation best? (Q14, n= 139)			
Type of protection measure*	since 2018 started to establish or improve it Q14(6)**	learned more about HOW to use it Q14(4)**	learned about, started and/or improved it**
Permanent electric fences (wolf proof) (III)	18.0%	40.3%	58.3%
Mobile electric fences (wolf proof) (IV)	15.1%	37.4%	52.5%
Fencing in at night (night pens) (VI)	14.4%	33.8%	48.2%
Livestock guardian dog (I)	11.5%	43.9%	55.4%
Active shepherding (II)	8.6%	30.9%	39.6%
Electric fencing (bear proof) (V)	7.9%	23.7%	31.7%
Llamas or donkeys as livestock guardian animals (VII)	6.5%	22.3%	28.8%
<i>Other (VIII)</i>	<i>11.5%</i>	<i>18.0%</i>	<i>29.5%</i>

n = 139 no. of respondents having learned about or using at least one improved livestock protection measure

* The roman numbers indicate the original order of the measures as listed in the questionnaire

** Sum ≠ 100% due to multiple choice option





For a first overview of project outcomes, we focus on improved types of herd protection measures that were taken up more readily than others since 2018. ‘Permanent electric fences (wolf proof)’ were established the most, by 18% of the responding Livestock Raisers, followed directly by ‘mobile electric fences (wolf proof)’ (15.1%). The third most frequently adapted livestock protection measures were ‘fencing in at night (night pens)’, by 14.4%, and ‘livestock guardian dogs’ (11.5%). ‘Active shepherding’ was newly implemented or lately improved by 8.6% while ‘llamas or donkeys as guardian animals’ received less attention (6.5%) from all the responding Livestock Raisers.

Bear proof electric fencing, in comparison to wolf proof permanent electrical fences, has been installed by 11 of all responding Livestock Raisers (7.9% vs. 40.3%). However, it needs to be kept in mind that this type of protection for domesticated animals or bee hives is only relevant where bears are regularly present, an area that covers only a fraction of the whole study area. The adoption of bear proof electric fences may therefore be considered a great success in the regions where the corresponding project activities were conducted.

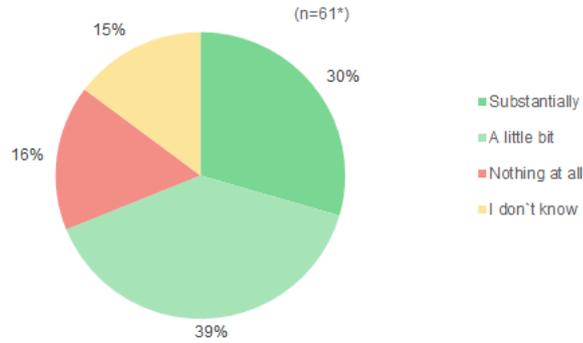
The second column in table 10 shows the numbers of Livestock Raisers (n=328) who have learned more about HOW to use the respective protection measures since 2018. These amount to about two to three times of those who actually established or improved either one of them. The total sum adds up to more than 100%, as multiple choices were possible. Livestock owners may have learned more about and implemented two or more different protection measures (e.g. starting to use guardian dogs AND night pens, while having learned about but not installed permanent electric fencing).

The impact of the project was then assessed by relating innovative Livestock Raisers to participation in a ‘conference, seminar, round table, excursion, or peer-to-peer exchange on LIVESTOCK PROTECTION measures or their supported implementation’ (Q31 III). Almost a quarter (23%) of the 52 Livestock Raisers who have actually implemented improved herd protection measures since 2018 participated in one of these project offers. This figure rises up to 27.3% of those 139 Livestock Raisers who have improved their knowledge and/or changed their behavior. Compared to the 20.4% average of trained persons (Q31 III ‘yes’ = 67) of all responding 328 Livestock Raisers, this higher percentage indicates an over-average positive effect of these project activities on knowledge increase and practical improvement of herd protection. This is a conservative figure, as ten more people stated they might have participated in such an extension activity but were not sure whether it was actually offered by the EU LIFE EuroLargeCarnivores Project (Q31 III ‘I am not sure’). At the same time this result shows that a) less than a quarter of those Livestock Raisers participating in the survey were reached by the project’s training and extension offers, while b) other sources of information and triggers of improved herd protection obviously also make an impact. Still, almost 70% of those Livestock Raisers who did participate in a herd protection related project event found these events helpful (see Figure 19).





To what extent did the ELC project contribute to your ability to establish new or improve existing LIVESTOCK PROTECTION measures?



* n=61 Livestock Raisers who participated in a 'Conference, seminar, round table, excursion or peer-to-peer exchange on livestock protection measures or their supported implementation' (Q31 III)

Figure 19 Contribution of ELC to improving livestock protection measures as perceived by Livestock Raisers

The narrative in Box 3 exemplifies how improved networking may contribute to the adaptation and uptake of improved herd protection measures.





Box 3 Collaboration with farmer associations improving the practicability of damage prevention measures

Project partner’s report about self-reflection and more effective collaboration with former “opponents” leading to higher practicability of solutions offered for damage prevention measures

The best example can be given by the deputy director of a Sheep and Goat Farmers Association, who has participated in project activities several times. This meant that we had a chance to get to know each other and clarify our views. I have started to see this gentleman as an ally rather than an opponent. At the moment, we work together on the preparation of standards for preventive measures, where we confront the nature conservation view with the view provided by real life. Disagreement on our visions was one of the barriers that divided us.

Preventive measures for the protection of livestock against large carnivore attacks that were proposed by us were assessed by farmers as inapplicable in practice due to their impracticability and elaborateness. This concerned the electric fencing and use of shepherd dogs and it was shown to us directly by the farmer in the field, who demonstrated to us a better solution. Standards for preventive measures need to include direct observations of people from the field. The main positive outcome of this change is expected in better acceptance of new measures by livestock farmers, as the measures should be easily applicable in the field. Preventive measures will then be implemented based on practical experience.

WWF Slovakia

Project enabled:

- Continuous activities with stakeholders that allowed for an exchange of perspectives and better understanding also of opposing views
- Communication skills that strengthened capacities to focus on consensus and common goals

This led to:

- Exchange and cooperation with stakeholders with “opposing” views
- Better understanding of stakeholders needs (in this case farmers’ needs with regards to livestock protection)
- Cooperating with farmers to re-formulate standards for herd protection measures towards better suitability in practice

Potential trickledown effect

- Standards that can be better accepted by their addressees (in this case livestock farmers) as they were consulted and contributed with their knowledge to their elaboration

Another example of how the project’s long-term engagement with an individual pioneer successfully contributed to increasing self-efficacy of Livestock Raisers, the promotion of improved herd protection and a potential consequential increased local acceptance of wolves is well described in Box 4.





Box 4 Working with Pioneers

Project partner's report on working with pioneers for effectively promoting livestock protection measures

A livestock farmer called us expressing the need for a better exchange between authorities and the livestock owners. He expected help in implementing livestock protection measures. He felt alone and a bit helpless, so he asked WWF Austria to step in because he had heard from the LIFE EuroLargeCarnivores project. [...] This man became the right partner for the project to build up a network around an innovative pioneer in livestock protection. So in 2019, within the framework of the project, we purchased electric fences for this farmer in order to have enough material for demonstrating livestock protection. This investment, his participation in many project activities and his go-getting nature made it possible for him to subsequently become an institution and well known expert in herd protection measures in Austria. In 2020, we organized together with this farmer a B8 event in order to establish a long term cooperation with journalists. This event took place at his pastures and many interested livestock owners have come to know him in this way. Nowadays this pioneer farmer is well visited by different livestock owners from all over Austria. He not only shows his livestock guarding dogs and llamas and how to put up electric fences in difficult terrain, but also gives talks about the importance of guided pasturing with shepherds in order to protect the sheep herds from wolves and to enhance biodiversity. Since in Austria wolves have been absent for 100 years and now are slowly returning, people have forgotten how to deal with them. So one can say that enabled by this project, this farmer brings new perspectives about conservation strategies to the people. Additionally, we have heard from some farmers who, after participating in his workshops, have changed their attitude, now also using electric fences or in some cases even getting livestock guarding dogs. [...] Still it is not always easy. There are still loud voices, accusing the farmer of being too wolf-friendly. Of course most of the livestock owners including this pioneer say that they are not happy about the return of the wolf or bear since they are not happy of any impact that brings damage to their herd. But for some of them, their attitude is changing and if they see that the herd protection measures work - we hear that they will not have anything against the wolves.*

WWF Austria

Successful outreach of the project:

- Project partners become first points of contacts for stakeholders interested in livestock protection
- Joint activities with pioneer livestock farmer, with respective out-reach to more farmers

This led to:

- Supported pioneer livestock farmer becomes an ambassador for best practices of herd protection measures, convincing other farmers that these measures can work
- Continuous collaboration with the pioneer farmer across different project activities, allowed new forms of interaction with other stakeholders (e.g. media) that led to greater outreach

Potential trickle down effects are:

- Seeing livestock protection work with their own eyes has the potential to change attitudes in the way that farmers see their self-efficacy and capability to deal with the new situation of returning wolves.
- Other farmers that were reached in this way can then again be an inspiring example for others.
- Importance to show that livestock protection measures work under real conditions as a prerequisite for farmers accepting co-existence with wolves.

* so called "press trips" within the project action #B8: Change attitude on the ground: Establish long term cooperation with journalists and together collect stories, build networks, exchange information [Germany and Hungary report similar experiences working with pioneers]





e) Financial instruments for damage prevention and compensation

Various project activities were organized in order to compare, inform about and contribute to the improvement of financial instruments for prevention and compensation of large carnivore damages within and across partner regions, mainly within the Actions #B7²¹ and #B2²².

In the first part of this section, we display the factual availability of such financial instruments in the partner countries or focus regions as reported by the project partners in 2021 (Table 11). We then assess stakeholders' knowledge about the availability of these instruments and claims filed since 2018. We focus on Livestock Raisers as the main target group and potential recipients. In the second part, we address the development and provision of these financial instruments from the point of view of public institutions and consultants.

Table 11 Factual availability of financial instruments for large carnivore induced damage compensation and prevention measures

Country	Financial instruments available* for LC damage...	
	...compensation	...prevention measures
AT	yes	yes
CH(it)	yes	yes
CRO	yes	yes
DE	yes	yes
ES	yes	yes
FI	yes	yes
IT	yes	yes
FR	yes	yes
HU	no	yes
NO	yes	yes
PL	no	yes
PT	yes	yes
RO	yes	not yet
SK	yes	no
SL	yes	yes
UA	no	no

* State as of January 2021, direct partner information

²¹#B7: Change attitude on the ground: Initiate and moderate peer-to-peer exchange of livestock protection measures between farmers

²²#B2: Involve institutions and authorities in a long-term exchange on instruments and best practice examples of large carnivore management and conservation





Livestock Raisers' (n=328; Q13(1)) knowledge and perception about, application for and success rate in receiving financial means for damage prevention or compensation of large carnivore induced damages is assessed in relation to a) the factual availability of these instrument in their countries or regions, and b) their participation in a respective informational event: *'a conference, seminar, round table, excursion, or peer-to-peer exchange on LIVESTOCK PROTECTION measures or their supported implementation'* (Q31 III (1=yes, 3=no)) (see Table 12).

The first main result shows that financial support schemes for compensation of livestock damages induced by large carnivores are unknown or inaccessible to 38.7% of all responding Livestock Raisers, who state that *'no such a program exists in my region'*. This does not reflect their factual availability but indicates a high rate of un-awareness about existing compensation schemes. They are available in 13 out of 16 focus regions (the only exceptions are Ukraine, Poland and Hungary, the latter two not providing for damage compensation but for prevention; Table 11). Correlating these responses with the return rate per country (i.e. omitting responses from countries without such a scheme) results in a conservative 27% of Livestock Raisers in countries with compensation schemes who (still) do not know about their existence. Regarding financial instruments for prevention measures, a similar rate of unawareness amongst Livestock Raisers was found. Even though the same number of, partially other, countries actually offer regular financial support for damage prevention measures (also 13 out of 16), a comparison of the 49.4% statements *'such a program does not exist in my region'* with the respective country return rates indicates that about 40% of the Livestock Raisers in countries providing such support schemes do not know about them, a result that may contradict personal expectations from project partners (see Table 12 and Box 5).

Box 5 Flashlight reflections on stakeholder knowledge and behavior concerning financial support programs for large carnivore induced damage prevention and compensation

"All our stakeholders should know about the existence of both financial support programs on this very general level. Technicalities are not always well communicated by the Kanton Tessin." (CH)

"Though financial support for damage prevention exists in Norway, the interest for prevention is rather low as it requires extra work from livestock owners, so the majority is just happy to receive the compensation for damages." (NO)





Table 12 Actual and perceived availability of financial support for prevention and compensation of livestock damage and claims by Livestock Raisers

Perceived availability of financial support for prevention measures and damage compensation by Livestock Raisers in four selected countries providing such support systems				
Since 2018, I have applied for ...	No such a program exists in my region (3)	Yes (1)	No, even though such a program is available (2)	n*
... financial COMPENSATION in case of damage. (Q15II)	38.7%	10.1%	51.2%	328
Austria (AT)	26.5%	9.7%	63.7%	113
Germany (DE)	23.9%	5.6%	70.4%	71
Spain (ES)	7.7%	7.7%	84.6%	13
France (FR)	30.4%	17.4%	52.2%	23
... financial support to install or improve livestock PROTECTION measures. (Q15I)	49.4%	12.8%	37.8%	328
AT	44.2%	13.3%	42.5%	113
DE	29.6%	15.5%	54.9%	71
ES	69.2%	0.0%	30.8%	13
FR	39.1%	26.1%	34.8%	23

*n= total number of Livestock Raisers Q13(1) in related countries

The second most important finding is that participants of project events on livestock protection a) apply four times more often for damage prevention funds and b) have a higher success rate with their claims (e.g. 85% vs. 50%) for prevention measures than non-participants (acknowledging that actually only two responding non-participants applied, see Table 13), while differences between participants and non-participants concerning damage compensation issues (not a focus of these project activities) are reflected mainly in the application rate but not in their success rates. Even though the overall figures of successful recipients of public financial support in our survey return are comparatively low, the results still indicate that the project's activities enhance Livestock Raisers' awareness and knowledge about these instruments and how to make use of them.

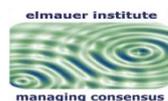




Table 13 Perceived availability of and application for financial support for prevention and compensation of livestock damage and claims by Livestock Raisers

	Application since 2018 (Q15 I+II, 2021)			Reception since 2018 (Q16 I+II, 2021)			n*
	No such a program exists in my region (3)	Yes (1)	No, even though such a program is available (2)	Yes (1)	No, even though I applied for it (2)	No (3)	
Financial COMPENSATION in case of damage.	38.7%	10.1%	51.2%	6.1%	4.6%	89.3%	328
... thereof							
participants of events on livestock protection (Q31III(1))	29.9%	16.4%	53.7%	9.0%	7.5%	83.6%	67
non-participants of such events (Q31III(3))	26.5%	5.9%	67.6%	2.9%	0.0%	97.1%	34
Financial support to install or improve livestock PROTECTION measures.	49.4%	12.8%	37.8%	10.4%	4.0%	85.7%	328
... thereof							
participants of events on livestock protection (Q31III(1))	46.3%	22.4%	31.3%	19.4%	7.5%	73.1%	67
non-participants of such events (Q31III(3))	47.1%	5.9%	47.1%	2.9%	0.0%	97.1%	34

*n= total number of Livestock Raisers Q13(1) and subsamples

Another interesting result, not shown in the table, is that respondents who are not sure about having participated in such an informational event or not, are 10% over average convinced that such programs do NOT exist. As this result is very difficult to interpret and not part of the task of this study, we focus on the comparison of participants and non-participants and omit this group in the tabular display of results.

Positive changes in the accessibility or user friendliness of financial instruments supporting livestock protection since 2018 are perceived only by a quarter of all responding Livestock Raisers, with a higher rate of participants of informational events (29.9%) compared to 23.5% of non-participants (see Table 14). Furthermore, participants' self-perceived level of knowledge about the development of such support options is clearly higher than average, regardless of whether they agree to an improvement or not.





Table 14 Accessibility of financial instruments for livestock protection measures as perceived by Livestock Raisers

Since 2018 financial instruments that support livestock protection measures are easier to apply for.				
Q17 II	Agree (1+2)	Disagree (3+4)	I don't know (0)	n
n = all Livestock Raisers (Q13(1))	25.6%	44.2%	30.2%	328
... thereof				
participants of events on LIVESTOCK PROTECTION (Q31 III(1))	29.9%	46.3%	23.9%	67
non-participants of such events (Q31 III(3))	23.5%	50.0%	26.5%	34

Based on these data, it is difficult to assess whether the formal application procedures for the various financial instruments have actually changed for the positive or whether Livestock Raisers who have participated in related information events now perceive them as easier to handle.

Development and provision of financial instruments for damage prevention and compensation

As the project attempts to contribute to the improvement and enhanced provision of financial instruments for damage compensation and especially prevention measures, data retrieved from stakeholders who are *'involved in the development or implementation of financial instruments or in the consultation of potential applicants'* (n=216, Q19(1)) were analyzed, a subsample of *'members of government institutions, hunting, agricultural or nature conservation associations/NGO, directly or indirectly concerned about or involved with the management of large carnivores'* (Q18(1)).

Table 15 displays the response behavior of two subsamples: those selected respondents who did not participate in any project-related events and those respondents who did participate in one or more project events, like *'conferences, meetings, workshops or training on financial instruments for livestock protection or damage compensation'* (Q31 IV(1) AND Q19(1)). The answering behavior of those who are not sure about their participation in any (specific) event regularly produced outliers of over-average agreement to any statement, thereby also greatly influencing the average of all respondents involved in providing financial support instruments. Due to difficulties regarding the interpretation as well as the multitude of possible external influencing factors, we omit this group in the tables.

The first result to highlight is that at least half (minimum 49.5%) of the institutions represented have developed or implemented new or improved financial instruments since 2018. Here, the focus was more on livestock protection (57.9%) than on damage compensation (49.5%).





As could be expected, it can be observed that the percentage of respondents stating improved knowledge about HOW to develop and implement financial instruments supporting livestock protection, compensating for damages, or how to consult potential applicants is higher than of those whose institutions actually implement improved instruments and of those individuals who were actually able to change their behavior (e.g. know how to consult (67.1%) and actually consult (55.1%) more potential applicants with regards to financial instruments).

The comparison of respondents who did not participate in any project event with those who did participate in a respective targeted event once again demonstrates the positive impact of the EU LIFE EuroLargeCarnivores Project. For each individual statement about improved knowledge or structural and behavioral change regarding the provision of financial support, the percentage of respondents who participated in respective specific events is higher than of those who did not participate in any project-related activities (e.g. knowledge about development or implementation of financial instruments for damage prevention: 68.5% non-participants vs. 77.8% participants).

Table 15 Development and implementation of financial support programs for damage prevention or compensation

Statements of respondents involved in the development or implementation of financial support programs and instruments or in the consultation of potential applicants					
	(Q20)	Agree (1+2)	Disagree (4+5)	I don't know (0)	n*
LIVESTOCK PROTECTION - Since 2018....					
... I know better HOW to develop or implement resp. financial instruments (II)					
All involved in providing financial support instruments, thereof:		73.6%	19.4%	6.9%	216
- Did not participate in any ELC activities Q30(3) of Q19(1)		68.5%	22.5%	9.0%	89
- Participated in respective special events (Q31 IV(1) of Q19(1))		77.8%	13.9%	8.3%	36
... I and/or my institution have developed or implemented resp. new or improved financial instruments (III)					
All involved in providing financial support instruments, thereof		57.9%	37.0%	5.1%	216
- Did not participate in any ELC activity Q30(3) of Q19(1)		56.2%	38.2%	5.6%	89
- Participated in respective special events (Q31 IV(1) of Q19(1))		61.1%	30.6%	8.3%	36
DAMAGE COMPENSATION					
... I know better HOW to develop or implement resp. financial instruments (IV)					
All involved in providing financial support instruments, thereof:		65.7%	28.2%	6.0%	216





Statements of respondents involved in the development or implementation of financial support programs and instruments or in the consultation of potential applicants				
- Did not participate in any ELC activity Q30(3) of Q19(1)	58.4%	36.0%	56.0%	89
- Participated in respective special events (Q31 IV(1) of Q19(1))	69.4%	13.9%	16.7%	36
... I and/or my institution have developed or implemented resp. new or improved financial instruments (V)				
All involved in providing financial support instruments, thereof:	49.5%	40.3%	10.2%	216
- Did not participate in any ELC activity Q30(3) of Q19(1)	43.8%	44.9%	11.2%	89
- Participated in respective special events (Q31 IV(1) of Q19(1))	47.2%	36.1%	16.7%	36
CONSULTATION				
... I know better HOW to consult potential applicants with regards to financial instruments. (VI)				
All involved in providing financial support instruments, thereof:	67.1%	25.5%	7.4%	216
- Did not participate in any ELC activity Q30(3) of Q19(1)	61.8%	28.1%	10.1%	89
- Participated in respective special events (Q31 IV(1) of Q19(1))	75.0%	11.1%	13.9%	36
... I CONSULT more potential applicants with regards to financial instruments. (VII)				
All involved in providing financial support instruments, thereof:	55.1%	37.0%	7.9%	216
- Did not participate in any ELC activity Q30(3) of Q19(1)	50.6%	38.2%	11.2%	89
- Participated in respective special events (Q31 IV(1) of Q19(1))	63.9%	25.0%	11.1%	36

*respondents involved in the development or implementation of financial instruments or in the consultation of potential applicants Q19(1)

The development of public financial instruments for any sort of subsidy takes time and is dependent on a multitude of external factors. Individual administrative employees' awareness, supportive networks and knowledge, as well as informative material and counseling, of, for instance, a LIFE project, are important prerequisites but not solely sufficient for structural changes of this magnitude. Moreover, the direct interaction with administrative and political entities by specific interest groups is on the one hand a challenging endeavor and comparatively rare occasion and, on the other hand, only constitutes a small part in complex and slowly evolving governance systems. The overall positive development of financial instruments for large carnivore-induced damage prevention and compensation schemes in Europe, documented by the high averages of enhanced knowledge, behavior and structural change in this study, is probably based on many different external driving factors and may not yet apply to each individual country. Still, together with





relatively small but traceable differences between persons and institutions directly participating in or not involved in project activities, the positive contribution of the project is well explicable does and reflect personal experiences of project partners in different focus regions (see Box 6).

Box 6 Cooperation with government institutions in the development of financial support systems

Complexity example Italy:

All Italian regions have large carnivore damage compensation schemes. Financial instruments for damage prevention are generally available but under different governance schemes:

Considering the project's focus region 'all Italian Alps', we are talking about 3 regions (Piemonte, Lombardia and Veneto), 2 autonomous regions (Valle d'Asta and Friuli Venezia Giulia) and 2 autonomous provinces (Trento and Bolzano). So, various systems are applied that can be clustered into 3 types:

- 1) Prevention measures are financed through EU Rural Development Programs (RDP)*
- 2) Prevention measures are financed directly by the autonomous provinces, like Trento, using regular public funds*
- 3) Prevention measures are not financed every year, but only in case of LIFE projects or other specific programs: but in fact, there are always LIFE projects ongoing*

Successes and Challenges

The Conservation Institute of Nature and Forest (ICNF) is the most important stakeholder in our country for wolf management. It represents the government in all management aspects of Habitats and Species. They attended our workshops and even some communication events like the 'Magical Moments/Story of Coexistence' video launch. From that we developed some relation with them, offered ourselves to be involved in National Plan to Conservation of Wolf, and in the beginning we were the 'new ones' but now we are [successfully] inviting by them to participate in [various] key moments [...] of EurolargeCarnivores, [...]

Compensation scheme is a very active and important part of coexistence, for Portugal, and for the protection of this species. So, the process associated with this needs a lot of improvements. (...) The big problem with ICNF is the difficulty to receive feedback from them, and the big machine they represent and that needs a lot of protocols and paper and authorizations and signatures to do any minimal movement. And in the end the time that this represents.

WWF Portugal

There is the possibility that during the next year this [the non-availability of financial support for herd protection] will be changed, relevant to the amendment of the decree. We had several meetings with the Ministry of Environment about it, but they have another priority now, relevant to the nature protection reform and declaration of protected areas. The amendment of the decree will be valid next year - to that time, they need to find some new financial instruments for supporting LC damage prevention measures.

WWF Slovakia

Since July 2021 the Austrian Province of Tyrol pays compensation for large carnivore induced damages from public funds, previously (if to a lesser degree) compensation was paid mainly by the hunter association's insurance. The LIFE Euro Large Carnivores Project certainly had a part in this (at least financially) positive development in Tyrol. The current public allowance for herd protection subsidies 2020/2021 is €1 Mio.

WWF Austria





Project enabled:

- Identification and engagement of stakeholders (esp. government institutions) previously not active members of partners' networks
- Continuous development of a new stakeholder-relationship which improves information exchange, and mutual support
- preparation and provision of expertise
- Accompaniment of third party processes of further developing compensation schemes

This led to

- new and improved cooperation with government institutions
- further developments or establishment of improved financial instruments supporting large carnivore management

f) Transboundary cooperation and species population level management

The EU LIFE EuroLargeCarnivores Project implemented various activities to help overcome barriers of transboundary cooperation with a special focus on network establishment and information exchange on the topics of monitoring standards and wildlife crime. The project created and maintained both physical and interactive exchange platforms (#B2, #D1), individual conferences (#B1), round tables, workshops and bilateral meetings (in person or online; #B2) in which national managing authorities from different countries were able to exchange approaches and best-practice examples concerning the management and conservation of large carnivores.

To assess changes in transboundary cooperation since 2018 and impacts of the project on stakeholder level, we selected and analyzed all '*members of a government institution, hunting, agricultural or nature conservation association/NGO, directly or indirectly concerned about or involved in the management of large carnivores*' (Q18(1)) from the 2021 survey data set who are active or interested in transboundary cooperation (Q21(2+3), n=510). The following table 16 depicts two different levels of outcome, knowledge and behavior concerning the '*establishment and strengthening of transboundary cooperation for population level management of large carnivores*', and a respective change in behavior potentially leading to an actual increase of transboundary cooperation for this subsample. It highlights the differences between those respondents who did not participate in any project-related activities (Q30(3)) and those who did participate in specific '*international conferences or meetings concerning TRANSBOUNDARY management of large carnivores*' Q31 V(1).





Table 16 Enhancements in transboundary cooperation

Statements concerning transboundary cooperation				
Since 2018	Agree (1+2)	Disagree (4+5)	I don't know (0)	n
...I have learned how to ESTABLISH transboundary cooperation for population level management of large carnivores. (Q22(I))				
all "members of a government institution, hunting, agricultural or nature conservation association/NGO, directly or indirectly concerned about or involved in the management of large carnivores" interested in transboundary cooperation	40.8%	42.7%	16.5%	510
- ... thereof did not participate in any ELC activity Q30(3)	31.4%	47.5%	21.2%	255
- did participate in "international conferences or meetings concerning TRANSBOUNDARY management of large carnivores" Q31 V(1)	73.1%	20.9%	7.5%	67
...I have learned how to STRENGTHEN transboundary cooperation for population level management of large carnivores (Q22(II))				
all the above	39.2%	43.9%	16.9%	510
- ... thereof did not participate in any ELC activity Q30(3)	29.8%	48.2%	22.0%	255
- did participate in "international conferences or meetings concerning TRANSBOUNDARY management of large carnivores" Q31 V(1)	68.7%	25.4%	6.0%	67
...I cooperate more actively across borders (Q22(III))				
all the above	41.8%	44.5%	13.7%	510
- ... thereof did not participate in any ELC activity Q30(3)	33.3%	48.2%	18.4%	255
- did participate in "international conferences or meetings concerning TRANSBOUNDARY management of large carnivores" Q31 V(1)	79.1%	17.9%	3.0%	67

The results suggest that since 2018 knowledge about how to establish or strengthen transboundary cooperation as well as actual cross-border cooperation for population-level management of large carnivores has increased for around 40% of this subsample. Striking is the difference between those who 'did not participate in any ELC activity' and those who did participate in respective specific events: around 30% of the non-participants and roughly between 70% - 80% of the participants perceive for themselves an improvement in all impact levels. For the latter subsample, 73.1% reported an increase in knowledge about the establishment, 68.7% about strengthening of transboundary cooperation for population level management of large carnivores and a remarkable 79.1% state that they cooperate more actively across borders since 2018. This is the only case in this study where behavior of relevant stakeholders is impacted more successfully by project activities than the level of specific knowledge and skills needed for transboundary cooperation.





The qualitative narrative in Box 7 describes a self-reflection of conservation actors on their role within large carnivore-related stakeholder networks. By applying a new eye-level networking strategy and by applying a professional communication tool (in this case an external facilitator), the ground was laid to create trust, to increase willingness to listen to each other, and potentially for better participation and more effective meetings and conferences. The narrative itself does not address its geographical scope but because two of the project partners from two different countries, who were cooperating closely together with other critical representatives of stakeholder categories during the project, jointly phrased it, this ‘Box’ is placed here. The insight itself, namely the benefit of employing a neutral facilitator to professionally moderate potentially conflictual meetings, can be transferred and recommended to all other stakeholder levels as well.

Box 7 Self-reflection of conservation actors on their role within stakeholder networks - neutral facilitation of potentially conflictual meetings

Project partners’ reports on changing views about the relevance to engage with other stakeholders and their own role within these networks

We think that WWF stepping a bit aside and using an external facilitator helped to create trust. [...] As we got the idea of an external facilitator after the conference at Goslar where we listened to the presentations by Alistair [Bath] and Francine [Madden]. Then we realized that it would be beneficial for the dialogue to use such a facilitator who would be seen as an impartial actor rather than leading such meetings ourselves as WWF as many have very clear and often negative views of WWF.*

WWF Finland and Norway

Project enabled:

- Self-reflection by conservation actors about their role in networks
- Opening up perspectives to improve relationships and cooperation with stakeholders with “opposing” views

This potentially leads to:

- Building up trust with different stakeholders beyond the peer group
- higher willingness by participating parties to listen to one another’s causes
- more effective meetings and conferences

*Human Dimensions of Fisheries and Wildlife Conference **Goslar**, Germany - Sept. 15-19, 2018 Conference, co-hosted by the ELC project

To assess the project’s Key Performance Indicator “10 institutions are engaged in a transboundary exchange” (KPI 14), the data analysis further focused on those 215 or 20.4% of all survey respondents who reported to be actively engaged in transboundary exchanges (Q21(3)) (i.e. excluding Q21(2) who are merely interested), comparing them directly to the subsample ‘Employee of a ministry, administration of public authority concerned with large carnivores (MA)’ (Q35(7), n=254). 29% of these Employees of Ministries and Public Administrations also stated ‘Yes, we actively cooperate across borders’ (Q21(3), n=73). The following table 17 aggregates the number





of assertive statements on two different levels: knowledge and skills about different aspects of transboundary cooperation (Q22 I, II) as well as actual cooperation (Q22 III).

Table 17 Engagement in transboundary exchange

To what extent do you agree with the following statements? Since 2018, ...				
Selected statements from Q22		Agree Disagree I don't know		
'All responsible cooperating actively across borders' (n=215)				
I have learned how to ESTABLISH transboundary cooperation for population level management of large carnivores. (I)				
- All	(n=215)	66%	29%	6%
- thereof 'MA'	(n= 73)	69%	30%	1%
I have learned how to STRENGTHEN transboundary cooperation for population level management of large carnivores. (II)				
- All	(n=215)	64%	29%	7%
- thereof 'MA'	(n= 73)	73%	25%	3%
I cooperate more actively across borders. (III)				
- All	(n=215)	75%	22%	3%
- thereof 'MA'	(n= 73)	70%	30%	0%

All = all respondents who stated: 'Yes, we actively cooperate across borders' (Q21(3), n=215)
 MA = Employees of a ministry, administration or public authority concerned with large carnivores' ((Q35(7) of (Q21(3)), n=73)

The main finding here is that 75% of those engaged in transboundary exchanges state to do so more actively since 2018 (Q22 III, agree (1+2)). 51 of these more active ones are 'Employees of a ministry, administration or public authority concerned with large carnivores (MA)' of whom 70% state to do so, too.

Together with the high percentages for increased skills regarding how to establish (66% all vs. 69% MA) and how to strengthen transboundary cooperation for population-level management of large carnivores (64% all vs. 73% MA), these figures give a strong indication that awareness concerning the necessity of transboundary cooperation and respective actions is increasing. These results are positively in line with the project's overarching aim of 'Improving coexistence with large carnivores in Europe through [increased] transboundary cooperation'.

Another interesting finding is that those 73 Employees of Ministries and Public Administrations who are actively cooperating across borders are quite certain about whether or not they have learned respective new skills while a negligible one or two of them 'don't know', compared to 6 - 7% of the average. At the same time, the percentage of Employees of Ministries and Public Administrations who are more actively engaged in transboundary cooperation since 2018 is also high (70%, n=51) but less than average (75%). One explanatory hypothesis is that while employees of public administrations are able to increase their individual knowledge about how to improve





institutional transboundary cooperation, an implementation on an institutional level may need more support and time than in other institutions. This aspect will be addressed again in topic section k) ‘Challenges and constraints’.

As several Employees of Ministries and Public Administrations respondents may work for the same institution, the indicated figure most likely overrates the institutional level of transboundary exchange. Still, it is assumed that it is unlikely that an average of five employees per administration responded to the survey. The data therefore do not allow to identify the exact number of institutions involved in this increased exchange yet even a conservative assessment of the high figures of actors' involvement points to at least ten institutions.

The total number of institutions known to partners to be actively engaged in cross-boundary cooperation for large carnivore management was collected by the Monitoring Team's additional “Partner Survey” (blue! 2022), listing a maximum of 134 and a bowdlerized 47 which is close to the maximum of 51 found in the #C1 survey. The additional benefit of this part of the #C1 study is the assessment of change over time and of the impact of different project activities on individual relevant stakeholders representing these institutions.

Main challenges of transboundary cooperation

Based on data from the 2018 survey, the five topmost perceived challenges of cooperation in transboundary management of large carnivores were identified. In 2021, respondents rated changes of these challenges compared to the situation in 2018 as depicted in table 18. For roughly half (48.6-56.1%) of the respondents, these specific challenges have not altered much during the past three years. Interestingly, between 30% - 42% perceive improvements of the hindering situations for four out of these five challenges: an improvement in cross-border communication (42%), better transboundary coordination of specific interest groups (38.2%), reduced difficulties in communication regarding language and style (32.5%), and an approximation of opinions on large carnivores (30.2%). All these challenges were directly addressed by different project activities (see Table 18). The only top challenge impeding transboundary management of large carnivore populations that is perceived as having worsened over the past few years is ‘*Confrontations of political camps*’, an issue and finding that mirrors a development in current European Societies in many different aspects of co-existence, not only with large carnivores.

More than 40% of those stakeholders already involved or interested in transboundary cooperation, 70% of the Employees of Ministries and Public Administrations currently involved, and 79% of those interested who participated in ‘*international conferences or meetings concerning TRANSBOUNDARY management of large carnivores*’ actually increased their cross-border engagement since 2018. These shares are always higher than, e.g., the respective figures for skills acquired in the same timeframe. The most likely interpretation of these results is that ‘*transboundary cooperation*’ is less a matter of awareness and specific knowledge than a matter of opportunity and suitable frame conditions for cross-border encounters and exchanges. Through its international conferences, seminars, workshops, trainings, peer-to-peer exchanges and project





meetings, the EU LIFE EuroLargeCarnivores Project provided ample occasions for stakeholders from different categories to get to know each other, to overcome diverging backgrounds, learn about common interests and respective often comparable challenges and last not least consensus-oriented strategies to identify and achieve common goals.

Table 18 Challenges of cooperation in transboundary management of large carnivores

The following challenges of cooperation in TRANSBOUNDARY management of large carnivores were identified in our previous survey in 2018. How do you rate the situation of these challenges today, compared to 2018?			
Development of the following challenges:	Worse (1)	About the same (2)	Improved (3 4 5)
Different opinions on large carnivores (2018: 1)	16.9%	52.9%	30.2%
Confrontations of political camps (2018: 2)	30.8%	51.0%	18.2%
Difficulties in communication regarding language and style (2018: 3)	11.4%	56.1%	32.5%
Lack of communication (2018: 4)	9.6%	48.4%	42.0%
Concerted actions of a specific interest group (2018: 5)	13.1%	48.6%	38.2%

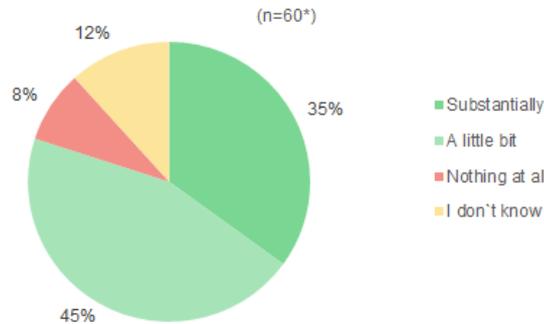
n=510 respondents who are “members of a government institution, hunting, agricultural or nature conservation association/NGO, directly or indirectly concerned about or involved with the management of large carnivores” interested in transboundary cooperation (filtered by questions Q18(1) and Q21(2+3))

This interpretation is supported by the following result summarizing that 80% of the respondents who are ‘members of a government institution, hunting, agricultural or nature conservation association/NGO, directly or indirectly concerned about or involved in the management of large carnivores’ (Q18(1)) AND interested in transboundary cooperation (Q21(2+3)) perceive that the project activities have contributed significantly or at least a bit to their ability to cooperate with other institutions across administrative boundaries (see Figure 20).





To what extent did the ELC project contribute to your ability to cooperate with other institutions across administrative boundaries?



*n= 60 derived from 67 of 'members of a government institution, hunting, agricultural or nature conservation association/NGO, directly or indirectly concerned about or involved in the management of large carnivores' (Q18(1)) AND interested in transboundary cooperation (Q21(2+3)) who participated in a related specific event (Q32II) minus "not applicable" (Q32 II(o))

Figure 20 Influence of the ELC project on the ability to cooperate across administrative boundaries

g) Monitoring standards

In the context of #B3 national and transboundary workshops were conducted, focusing on raising awareness for transboundary cooperation in large carnivore monitoring, reaching and connecting over 359 people (ELC Final Report as of 23 Jan. 2022).

Our #C1 assessment therefore focuses on awareness, skills and adapted behavior of national or regional representatives responsible for monitoring data on large carnivores and experts/practitioners in the field of large carnivore monitoring (n=244, Q26(1)) concerning exchange and harmonization of monitoring data across administrative borders (see Table 19).

The awareness that 'there is (still) a great need for harmonizing monitoring standards across administrative and national borders' is extremely high with respondents involved in large carnivore monitoring (84.8% on average) and almost half (49.2%) state that since 2018 they have 'learned HOW to better harmonize monitoring of LC across countries', confirming the hypothesis that awareness itself is important but not sufficient for change. Most interesting for our assessment are the 65.4% of those selected respondents who 'participated in workshops, conferences or meetings on MONITORING of large carnivore populations' (n=78) and now exchange more monitoring data with other national authorities, conservation actors and stakeholders, compared to the 56.3% of those who did not participate in project activities. The impact of the project activities is also reflected in the results concerning improved standardization of 'monitoring methods in collaboration with other institutions across administrative borders' by 48.7% of the respondents who participated in a specific monitoring-related event compared to 34% of those who did not participate in any project-related event.





Table 19 Cooperation for monitoring of large carnivore populations

Statements concerning monitoring of large carnivore populations					
Since 2018....	(Q27)	Agree (1+2)	Disagree (4+5)	I don't know (0)	n
AWARENESS					
There is (still) a great need for harmonizing monitoring standards across administrative and national borders. (Q27 I)					
all respondents involved in large carnivore monitoring*		84.8%	11.9%	3.3%	244
- Did not participate in any ELC activities Q30(3) of Q26(1)		78.6%	15.5%	5.8%	103
- Participated in workshops, conferences or meetings on MONITORING of large carnivore populations Q31 VII(1)		91.0%	9.0%	0.0%	78
KNOWLEDGE					
I have learned HOW to better harmonize monitoring of large carnivores across countries. (Q27(II))					
all respondents involved in large carnivore monitoring		49.2%	37.7%	13.1%	244
- Did not participate in any ELC activities Q30(3) of Q26(1)		47.6%	36.9%	15.5%	103
- Participated in workshops, conferences or meetings on MONITORING of large carnivore populations Q31 VII(1)		57.7%	33.3%	9.0%	78
BEHAVIOR					
I exchange more monitoring data with other national authorities, conservation actors and stakeholders than before 2018. (Q27(III))					
all respondents involved in large carnivore monitoring		57.0%	32.4%	10.7%	244
- Did not participate in any ELC activities Q30(3) of Q26(1)		56.3%	29.1%	14.6%	103
- Participated in workshops, conferences or meetings on MONITORING of large carnivore populations Q31 VII(1)		65.4%	26.9%	7.7%	78
BEHAVIOR					
I have standardized our monitoring methods in collaboration with other institutions across administrative borders. (Q27(IV))					
all respondents involved in large carnivore monitoring		41.8%	40.2%	18.0%	244
- Did not participate in any ELC activities Q30(3) of Q26(1)		34.0%	41.7%	24.3%	103
- Participated in workshops, conferences or meetings on MONITORING of large carnivore populations Q31 VII(1)		48.7%	42.3%	9.0%	78

*national or regional representative, responsible for monitoring data on large carnivores or expert/practitioner in the field of large carnivore monitoring (Q26(1))

The relatively high share of respondents stating to have standardized monitoring methods leaves ample room for interpretation considering the difficulties involved and described by the project's





review on large carnivore monitoring across Europe. One potential explanation could be based on enhanced knowledge acquired by participants of monitoring-related project activities about the need for comparable monitoring data and improved skills on how to apply different monitoring methods. Based on this knowledge, any improvement in local monitoring processes could be perceived as ‘I have standardized our monitoring methods in collaboration with [i.e. learning from] other institutions across administrative borders’. Such an interpretation is suggested by the narrative provided by WWF Ukraine which describes the interlinkages of different project activities leading to improved large carnivore monitoring (see Box 8).

Box 8 Challenges, improved communication techniques, trust building and consequent cooperation in monitoring

Project partner’s report about challenges, improved communication techniques, trust building and consequent cooperation in monitoring

...the development started during the A2 activity in 2018 – the stakeholder analysis workshop. We experienced a very difficult situation when during the second half of the first day of the workshop one of the stakeholders, a hunter [let’s call him Vasyl], completely disagreed with the general discussion on wolf management and demonstratively left the workshop. During the coffee break part of the other hunters joined him and left the training. As a result, 1/3 of the participants left during the first day of the workshop and never came back. But the WWF UA team never gave up and started to use the consensus oriented approach [learned in B5*] to understand the behavior of those people and their motivation. We started to communicate with them on general issues and asked them about things they were quite experienced in. During the first year, we were just interested in how they are doing and if everything is ok with their work. Trust started to establish. We found out the hunter V. is also a beekeeper and places his apiaries in remote forest meadows close to bear habitat. As we knew that in V.’s village several attacks of bear on beehives occurred, we offered him electric fences from WWF UA. And magic happened. Vasyl installed an electric fence in 2020 and it prevented bear attacks that summer. V. started advocating actively for electric fences and suggested another beekeeper from his village to whom WWF UA then presented another electric fence. [After trust-building communication on different topics] V. started to cooperate with WWF UA and helped in a bear DNA collection project by providing several samples (autumn 2020). This winter (2021) he actively participated in LC* monitoring with other hunters who had joined him leaving the event of 2018. This is the biggest progress of this project and an incredible change in the behavior of one person who was totally against the EU LC project and what we are doing here.*

For sure this behavior change has a positive impact on LC conservation, especially bear, as V. lives the most remote village in the [...] region – with a top density bear population and a key bear ecological corridor. As forestry hunter advisor he is also responsible for LC monitoring, so now he is helping to do proper LC monitoring [#B3], collect bear DNA samples and advocate for prevention measures as he had positive experience with the electric fence which protected his apiaries from bear attack (only the upper line was damaged by bear but beehives were left undamaged) in summer 2020. In total, we achieved that an enemy of a certain large carnivore species now accepts the animals.*

We are still not talking with V. about wolves, only on what he is interested – coexistence with bear and apiaries protection. I guess we need some time to strengthen relationships and be ready to negotiate about wolves in that region as they cause serious damage to villagers in that region.

WWF Ukraine





Project enabled:

- Primary encounters and engagement with stakeholders previously not part of the partner's network.
- Continuous activities with stakeholders that allowed for an exchange of perspectives and better understanding also of opposing views
- Communication skills that strengthened capacities to focus on consensus and common goals
- material and frame condition for direct support in LC damage prevention
- Learning about increased monitoring standards and participatory monitoring approaches

This led to:

- Exchange and cooperation with stakeholders with “opposing” views
- Better understanding of stakeholders needs (in this case farmers’ needs to protect his bee hives)
- Cooperating and direct support of farmers to implement damage prevention measures
- Involvement of different/new stakeholder categories in participatory LC monitoring and conservation

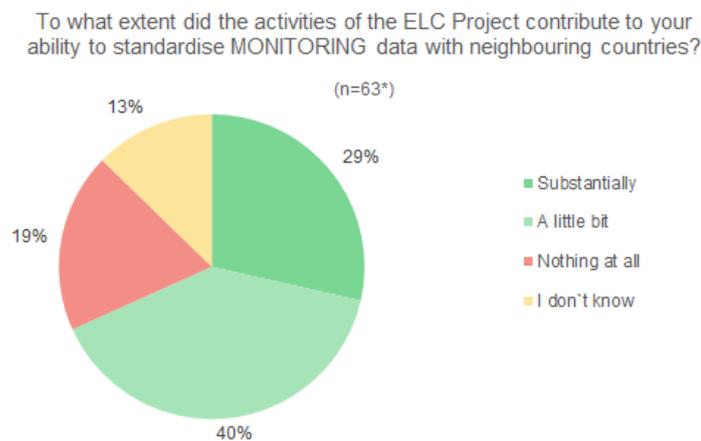
*LC = large carnivore(s)

*#A2: Stakeholder analysis based on the principles of inclusiveness and transparency

*#B5: Increase communication capacities: Train local conservation and management actors in consensus-oriented approaches

*#B3: Promote case studies and best practices on implementation of trans-boundary monitoring (monitoring standards) of large carnivore populations

This optimistic interpretation is supported by the survey result that 69% of the selected respondents perceive that the project contributed substantially (29%) or at least a little bit (40%) to their ability to standardize monitoring data with neighboring countries (see Figure 21):



*n= 63 derived from 78 national or regional representatives responsible for monitoring data on large carnivores or expert/practitioner in the field of large carnivore monitoring (Q26(1)) participating in a related ELC event (Q32 V(1)) minus “not applicable” (Q32 V(0))

Figure 21 Influence of the ELC project on the ability to standardize monitoring data





h) Wildlife Crime

The main focus of Action #B4 in the course of the project was ‘*Fostering information exchange and trans-boundary cooperation especially on the topic of illegal killings [...], in order [... that] losses to illegal killing are reduced*’. 11 events were hosted by the project on the topic of illegal killings and reached at least 668 participants (ELC FINAL REPORT as of 23.2.22). Initial contact with relevant legal experts and LIFE projects focusing on environmental crime (ENPE, LIFE Themsis, LIFE Reason For Hope) was made in autumn 2018. The lead partner for this activity (WWF Germany) then ran its own very successful kick-off conference. Later on, one of the follow-up national workshops also took place in Germany and was conducted online in December 2021 with an additional audience of over 300 regional officials (ELC FINAL report as of 23 Feb. 2022).

One consequence of this timeline is that the impact of at least this last successful event cannot be assessed by #C1 as the event took place after the survey was closed in September 2021. In spite of this, 284 persons ‘*involved in exchange of data, in investigation or prosecution related to wildlife crime*’ participated in the 2021 survey, of which 57 participated in topic-related project events (‘*workshops, conferences or individual meetings on measures for the reduction of wildlife crime*’ (Q31 VI(1))).

The different tasks connected with the aim of reducing wildlife crime (i.e. exchange of data, investigation and prosecution) are clearly not within the scope of duties of all respondents in this subsample and were thus, consequently, identified as ‘*not applicable*’. The more specific the task, the fewer respondents stated to be responsible for them (207 for data exchange; 199 for investigation; 186 for prosecution). The percentages listed for perceptions per task are consequently based on the n_1 (subsample) minus n_2 (not applicable).

The following Table 20 depicts the familiar high awareness rate of 86.1% of all selected respondents who state that ‘*Wildlife crime is a great problem with regards to the achievement of conservation targets for LC*’. The expected declining rates on the different positive outcome levels again become obvious for participants of topic-related specific events, of whom 61.7% learned ‘*HOW to improve transnational exchange of data about wildlife crime and practices of law enforcement*’ (knowledge) while 57% are more effective in investigating and 37.2% in prosecuting cases of illegal killings of large carnivores (behavior).

The finding that a slightly higher proportion of ‘*Non-participants in project events*’ is more effective in prosecution of wildlife crime than participants of special topic-related events is easily interpretable, as prosecution is a state duty performed by professionals with non-discretionary authorization. Here, changing frame conditions may be more influential than individual participation in and benefits taken from informative events.





Table 20 Exchange of data, investigation or prosecution related to wildlife crime

Statements of respondents involved in exchange of data, in investigation or prosecution related to wildlife crime				
Since 20018... (Q25)	Agree* ** (1+2)	Disagree ** (4+5)	Not applicable (n)	n
Wildlife crime is a great problem with regards to the achievement of conservation targets for LC (I)				
all involved in exchange of data, in investigation or prosecution related to wildlife crime	86.1%	13.9%	4	284
... thereof	83.9%	16.1%	4	128
- did not participate in any ELC activity (Q30(3))				
- did participate in workshops, conferences or individual meetings on measures for the reduction of WILDLIFE CRIME Q31 VI(1)	89.5%	10.5%	0	57
... I have learned HOW to improve transnational exchange of data about wildlife crime and practices of law enforcement. (II)				
n = all involved*	43.0%	57.0%	77	284
- ... thereof	39.1%	60.9%	36	128
- did not participate in any ELC activities (Q30(3))				
- did participate in a specific event (see above)	61.7%	38.3%	10	57
.... I am more effectively INVESTIGATING cases of illegal killings of LC. (III)				
n = all involved*	52.3%	47.7%	85	284
- ... thereof	48.3%	51.7%	39	128
- did not participate in any ELC activities (Q30(3))				
- did participate in a specific event (see above)	58.7%	41.3%	11	57
...I am more effectively PROSECUTING cases of illegal killings of large carnivores. (IV)				
n = all involved*	41.4%	58.6%	98	284
- ... thereof	41.2%	58.8%	43	128
- did not participate in any ELC activities (Q30(3))				
- did participate in a specific event (see above)	37.2%	63.0%	14	57

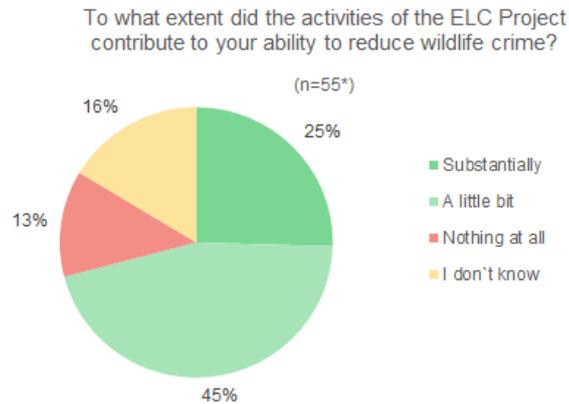
*n = respondents involved in exchange of data, in investigation or prosecution related to wildlife crime

** % of n(subsample)-n(not applicable)





The fairly high averages (41.4% to 52.3%) of respondents perceiving an improvement on the outcome levels ‘knowledge’ and ‘action’ for the reduction of wildlife crime suggest a positive overall development since 2018, to which the project has positively contributed (see Figure 22).



*n= 55 derived from 57 respondents involved in exchange of data, in investigation or prosecution related to wildlife crime (Q24(1)) participating in a related ELC event (Q32IV(1)) minus “not applicable” (Q32IV(o))

Figure 22 Influence of the ELC project on the ability to reduce wildlife crime

i) Fact-based information about large carnivores

Different activities were developed and implemented within Action #B8: ‘Change attitude on the ground: Establish long term cooperation with journalists and together collect stories, build networks, exchange information’. The declared goal of the project lead and partners was ‘... An increased awareness and realistic understanding among journalists about the importance, benefits but also real risks and challenges should result in more positive news about LCs and contribute to offer a more realistic picture about wolves, bears, lynx and wolverine for the general public including local communities’. Two main clusters of activities were pursued:

- COVID-19 notwithstanding, a total of 15 press trips involving a total of 120 journalists could be implemented.
- Factsheets with science-based data for three large carnivore species in selected European Countries, including neutral information contact addresses prepared in English (with support of FVA/WTI²³), translated into regional languages and published on the website at <https://www.eurolargecarnivores.eu/de/factsheets>.

In addition, the project website (online since March 2018) was developed (Action #D1) with spin offs in all partners’ languages. Interactive functions are active in those regions where partners would like to use them, including interactive maps, a.o. for journalists. Stories of coexistence were

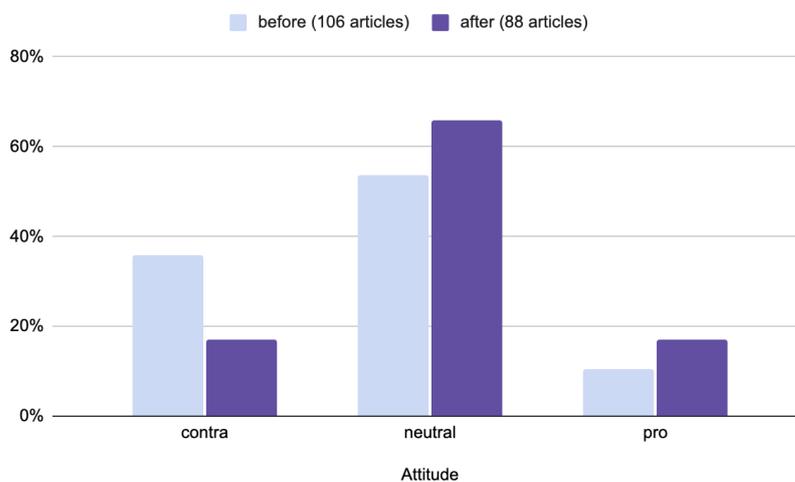
²³ FVA Wildlife Institute <https://www.fva-bw.de/top-meta-navigation/fachabteilungen/wildtierinstitut/> (German only)





enriched with videos and additional contextual information (such as lists of livestock breeders, etc.). A project communication toolbox was provided and is still continuously being filled with fact-based digital posters, leaflets, and links to more comprehensive information material.

These outputs were monitored and outcomes partially evaluated by other project partners. The Spanish project partner completed an automated analysis of media coverage on large carnivores with a sentinel analysis (see Figure 23); due to the language specificities the script, however, can only be used in the Spanish context. These selective results suggest a clear downshift of negative media coverage and an increase especially in neutral reportages by 43 journalists who had participated in local project events and were probably benefitting from the fact-based media portfolios since 2018.



[Source: ELC Final Report 2022]

Figure 23 Qualified output attitude on the work of 43 Journalists attending our events

A similar tendency toward more balanced media coverage has been observed in Austria (personal communication) and Greece (see Box 9)

In the #C1 2021 survey, 26 respondents stated to be media representatives (Q35(13)) but none of them had participated in project-organized press trips. Looked at from the other side, of the 20 journalists listed by partners to have participated in media-related project events (blue! 2022 ELC Final Monitoring Report), none participated in the survey.

Asked about how they rate 'Existing public fact-based information material and events' (Q7 I) compared to 'Current media and news coverage' (Q7 II) in terms of improving the co-existence of humans and large carnivores, more than half of the responding media representatives (53.8%) find public fact-based information helpful (a higher percentage than the average 51.4% over all survey respondents), while the other 47% of media representatives are still either not aware of them or not convinced about their quality (see Figure 24).





As a media representative:

How would you rate the following information sources and policies in terms of improving the co-existence of humans and large carnivores in your region?

n=26

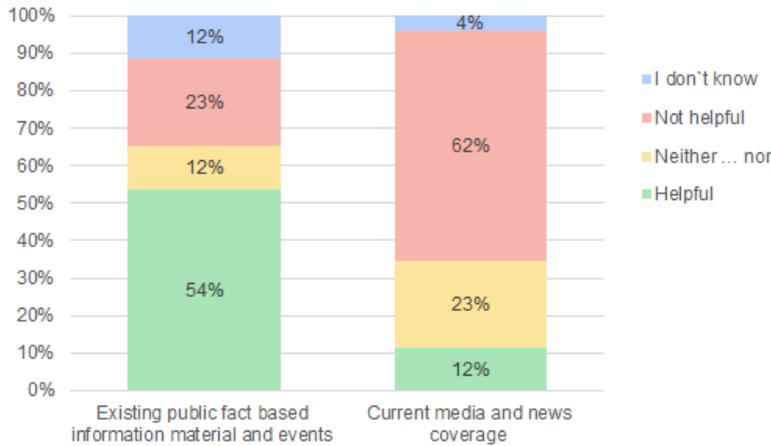


Figure 24 Rating of information sources by media representatives

As none of the 26 media representatives participating in the 2021 survey had participated in ‘Press trips organized by the EuroLargeCarnivores LIFE project’ ((Q31(VIII))), a more detailed quantitative assessment of the project impact as perceived by media-stakeholders themselves was not possible.

Box 9 Fact based and balanced media coverage

Project partners’ report on fact based and balanced media coverage

Last week [first week of January 2022] there was an incident in Parnitha mountain when a wolf attacked and picked up the 4-month old dog of a family and disappeared in the woods. The incident occurred at dusk, near one of the hiking shelters (but one easily approachable by car). Parnitha is very close to Athens and wolves returned to the mountain less than ten years ago. Because of the presence of red deer and wild boars they now have a very healthy population. It is a protected area and it is prohibited to visit it with a dog or other domestic animals. We expected and feared that the story would grow big and bloody (a puppy taken out of the hands of the 14year girl that was holding it and dropped the lease). However, we are kind of surprised to see that the following reports and articles focus more on co-existence and the measures that visitors to the mountain and the authorities should take to improve co-existence. I am reluctant to see a change in the Greek society here but for the moment feel happy with the outcome.

WWF Greece

- Best practice: Fact based and educational information available and used by media representatives for balanced news coverage





j) Attitudes toward conservation and coexistence with large carnivores

This #C1 study does not attempt to assess the change of stakeholders' attitudes depending on the impact of individual project actions but rather the overall change in attitudes between the start of the project (Baseline Survey in 2018) towards its end in the second half of 2021. Several identical questions were posed in both questionnaires. Three issues were addressed: i) expectations about future management of large carnivore populations, ii) attitudes towards legal conservation status compared to iii) the acceptance of large carnivores' physical presence in the respondents' local areas (for wolves, bears and lynx respectively).

All actions and activities developed and implemented during the project lifetime, especially in their interplay, were intended to have a positive impact on stakeholders' attitudes towards conservation and coexistence with large carnivores in Europe. Some actions even state this aim in their title (#B7, #B8, #B9: '*Change attitude on the ground: ...*'). In Action #B9 ('*Increase the sense of ownership through interactive Magical Moments Campaign*'), the project produced and disseminated a set of positive messages connected to the presence of and coexistence with large carnivores that highlighted their manageability and benefits identified to connect to them. In the course of the project not the aim and approach but the title of the campaign was neutralized to '*#storiesofcoexistence campaign*' realizing after the #B5 and #B6 activities that this previously rather one-sided promotion bears the risk of provoking rather than convincing potential spectators with different viewpoints and narratives (FVA, own observation). Overall, 70 feature stories and 72 video clips were produced, thereof 34 stories of coexistence. They were published on the EuroLargeCarnivores youtube channel²⁴ and posted 321 times across partner social media and other channels, usually in regional language and English subtitles or vice versa. An overall number of over 1.4M views (actually clicks) were reached (blue!, 2022; ELC FINAL REPORT as of 23. Feb. 2022).

Expectations about future management of large carnivore populations

The question '*Do you believe that an increase of large carnivore populations could be managed to your satisfaction?*' was posed in 2018 (Q12), and in 2021 (Q5). In 2018, 74.3% of all respondents (and presumed stakeholders of large carnivore management) positively affirmed this question with '*yes, certainly*' (43.9%) or '*yes probably*' (30.4%) compared to 71.4% in 2021 (38.1% certainly vs. 33.3% probably yes), on average suggesting a slight decrease in confidence about future management of large carnivore populations over time (see Table 21).

To assess a potential positive impact of the EU LIFE EuroLargeCarnivores Project under these challenging frame conditions, we differentiated the answering behavior of respondents according to their project involvement. The comparison of participants with those who had not participated in any related event suggests a correspondence between confidence in successful management of increasing large carnivore populations and project involvement. 86% of all survey respondents in

²⁴ <https://www.youtube.com/channel/UCltgwRnDYUiZ6yOhtahGofQ>





2021 who had participated in project activities (Q30(yes), n=260), ‘believe that an increase of large carnivore populations could be managed to [their] satisfaction’ (Q5 ‘yes, probably’; ‘yes, certainly’). Of the non-participants (Q30(no), n=659), 66% affirm this statement. From these figures, we deduce that the confidence in large carnivore management is on average 20% higher with participants than with non-participants of project activities, even if it did not increase overall. The main change observed takes place on the level of certainty for participants as, compared to the average in 2018, in the 2021 survey, an extra 9.2% opt for ‘yes, certainly’ while 8% respondents less state ‘no, certainly not’.

Table 21 Belief in satisfactory management of increased large carnivore populations

Do you believe that an increase of large carnivore populations could be managed to your satisfaction? (2018, Q12; 2021, Q5)					
	... 2018 (N=1262)	... 2021 (N=1056)	participated in project activity (n=260)	not sure about participation(n=137)	did not participate in any project activity (n=659)
Yes, certainly	43.9%	38.1%	53.1%	34.3%	32.9%
Yes, probably	30.4%	33.3%	32.7%	35.8%	33.1%
No, probably not	10.9%	15.2%	7.7%	16.1%	18.1%
No, certainly not	10.8%	11.0%	5.4%	10.2%	13.4%
I don't know/No answer	4.0%	2.4%	1.2%	3.6%	2.6%

These general findings call for a differentiation and comparison of the answering behavior of the three main stakeholder categories ‘Hunters’ (HU), ‘Livestock Raisers’ (LR) and ‘Nature Conservationists’ (NC) in 2018 and 2021. For a more concise comparison, we used the subsamples of members organized in respective associations or non-governmental institutions from both surveys, labeled HUorg, LRorg, NCorg, as described in Grossmann et al. (2020). The response rate of the respective subsamples is comparably un-proportionate in both surveys but not directly comparable for the years 2018 and 2021 (HUorg n=294/213; NCorg n=360/308; LRorg n=139/163). As a consequence, we compared the group’s internal distribution of percentages.





The results show a considerable deviation between 2018 and 2021 (see Figure 25). While in 2018 more or less 50% (47-50%) of all three subsamples believed that increasing populations of large carnivores could ‘*certainly*’ be managed to their satisfaction and another strong quarter (27-33%) believed ‘*yes, probably*’, in 2021, we find a much stronger differentiation. While the proportion of NCorg agreeing to this statement (‘*yes, certainly*’ and ‘*yes, probably*’) seems to have increased slightly (80-82%), the respective shares of organized Hunters and especially organized Livestock Raisers dropped noticeably from 74% to 56% for HUorg and from 77% to 40% for LRorg. The main decline takes place in the group that was originally (in 2018) certain that this would be possible, while certainty that this is not possible increased two to five times for HUorg and LRorg respectively.

Do you believe that an increase of large carnivore populations could be managed to your satisfaction? (Comparison of 2018 and 2021)*



* Numbers in the columns indicate the exact percentage of the respective statement.

Figure 25 Confidence in satisfactory management of increasing large carnivore populations according to organized members of three main stakeholder categories in 2018 and 2021

The analysis was then further deepened within these three subsamples by relating to their respective participation in project activities (see Figure 26). The first obvious finding is that in two out of three subsamples (HUorg and NCorg), project event participants in 2021 are more confident (‘*yes, certainly*’ and ‘*yes, probably*’) than the respective average in 2018 (HUorg 80% vs. 74% and NCorg 89% vs. 80%). This effect is clearly counterbalanced by LRorg, with 13% losing confidence

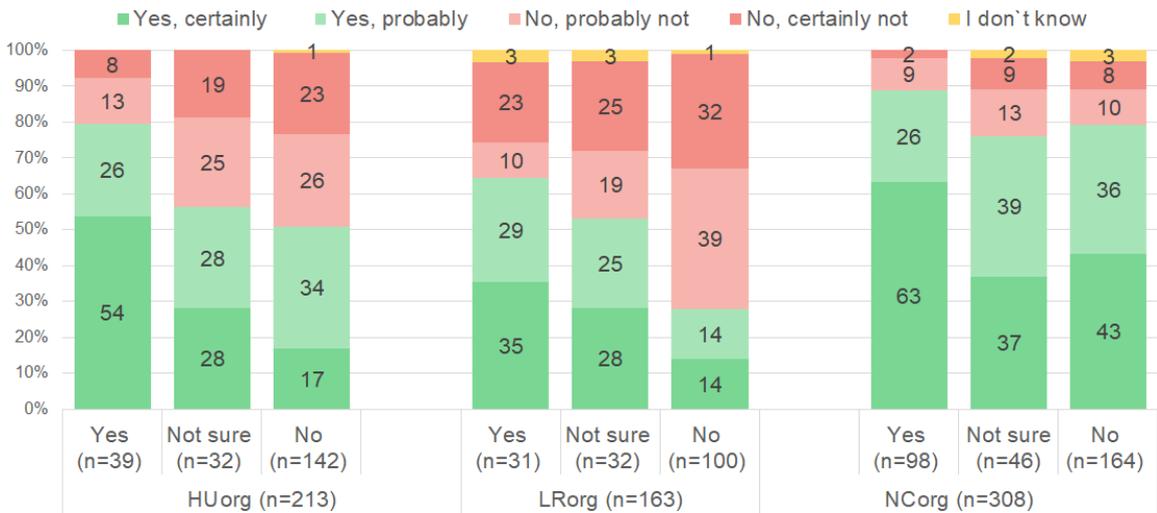




in satisfactory large carnivore management in spite of participation in project activities (average 77% in 2018 vs. 64% of the participants in 2021). The middle columns for respondents who are 'Not sure' [about participation in a project activity] are depicted just to complement the respective 100%.

In all three main stakeholder categories, the number of confident respondents who did not participate in project activities is distinctly lower than that of participants, most obviously so when looking at the percentages of 'certain' belief in satisfactory large carnivore management of growing populations: roughly 1:3 for Hunters, 1:2 for Livestock Raisers and 2:3 for Nature Conservationists. At the same time, the belief that satisfactory management is 'certainly not' possible is voiced most often by persons who did not participate in project activities.

Do you believe that an increase of large carnivore populations could be managed to your satisfaction? ... in 2021 depending on participation in an ELC activity



*Organized members of three main stakeholder categories HU, LR, NC in 2021, in relation to their participation in ELC project activities

** Column titles indicate respondents' participation in project events (Yes; Not sure; No, (Q5, 2021)). Numbers within the columns indicate the exact percentage of the respective statement.

Figure 26 Confidence in satisfactory management of increasing large carnivore populations





Acceptance of legal conservation status and local presence of wolves, bears and lynx in Europe between 2018 and 2021

In the following subsection, we focus our analysis on responses concerning the legal protection and local presence of wolves only as these animals are the widest spread in our research area, discussed most frequently in the media, and concern most of the respondents more than bears and lynxes. The local acceptance rates for the latter two species will then be presented in comparison to those concerning wolves.

In 2018, acceptance of legal protection of wolves was high on average with 76% but distinctly higher than the acceptance of their local presence (average 66%). A comparison of 2018 with 2021 reveals a clear change of attitude of respondents towards legal protection of wolves and whether or not they should be actively kept out of the respondent's local regions (Figure 27). While the majority of all respondents in both surveys still accepted the legal protection of wolves, consent dropped by 13% to 63% in the past three years. The even lower acceptance of local presence of wolves is reduced less prominently by 5% to 61%, but opposition has risen by 8% to 38%, potentially including the share of respondents who were undecided in 2018 and now tend to object to the idea.

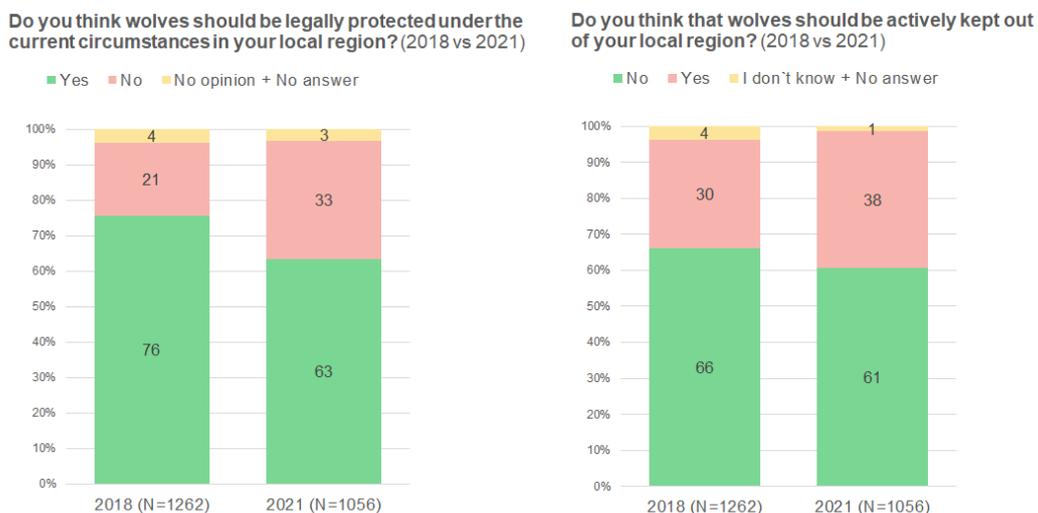


Figure 27 Attitudes towards legal protection vs. local presence of wolves in 2018 and 2021

In an additional step, we analyzed the distribution of attitudes regarding the local presence of large carnivores for the five countries with the highest returns ($n > 100$) to assess a potential dominance of positive or negative socio-political national attitudes in the overall results (see Figure 28).



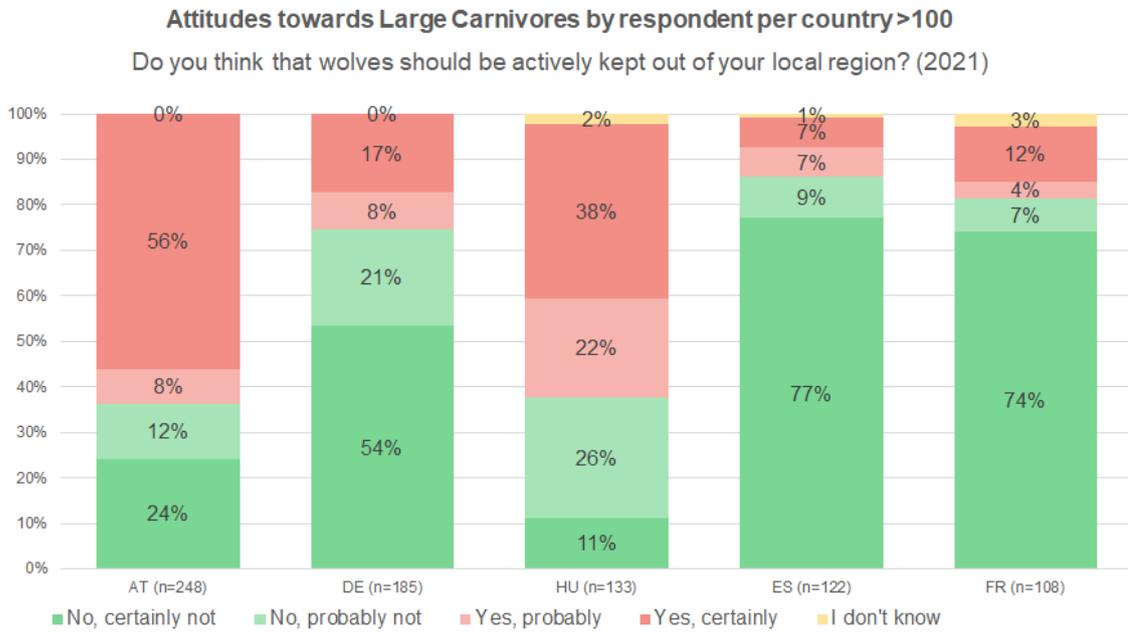


Figure 28 Acceptance of Large Carnivores presence in respondents' local areas, by country (n>100)

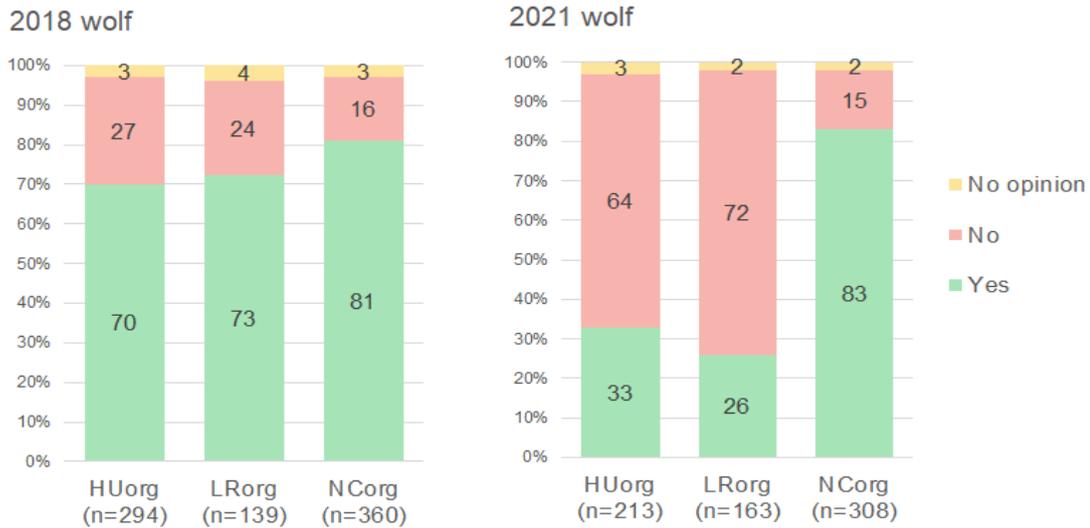
The results suggest that while, for example, the samples of Austria and Hungary encompass a specifically high amount of wolf-critics, this bias is counterbalanced by the generally more tolerant returns from Germany, Spain and France. A cross-reference with the uneven distribution of stakeholder categories per country suggests a higher influence of the occupation of the respondents than of their origin (see 'Description of the return'). For these reasons, the following analyses on the acceptance of legal protection and local presence of large carnivores are differentiated in relation to the three main stakeholder categories Hunters (HU), Livestock Raisers (LR) and Nature Conservationists (NC), and not according to country.

The results reveal distinct differences in acceptance between these categories, especially amongst their institutionally-organized members. For institutionally organized Nature Conservationists, an almost negligible change took place over the past three years, with a 2% higher 83% agreeing in 2021 that wolves should be legally protected under the current circumstances in their local region, compared to 81% in 2018, and a respective 15% (16% in 2018) who do not think so (see Figure 29). Much more distinct is the percentage of institutionally-organized Hunters and Livestock Raisers who have changed their attitude from acceptance of legal protection to rejection. The number of respondents opposing the legal protection of wolves more than doubled from 27% to 64% for members of Hunting Associations, while the number of opposing members of Livestock Raiser Associations even tripled from 24% in 2018 to 72% in 2021.





Do you think wolves should be legally protected under the current circumstances in your local region? (Comparison 2018 and 2021)*



* Numbers in columns indicate the percentages of the respective statements.

Figure 29 Attitude towards legal protection of wolves in respondents' local regions according to organized members of three main stakeholder categories in 2018 and 2021

In line with this finding, percentages of HUorg and LRorg who think *[wolves] should (certainly/probably) be actively kept out* of their local region rose distinctly and close to the reduced levels of acceptance of legal protection. Even within the subsample NCorg a slight internal shift from *'probably* to *'certainly [...] should be kept out* was observed, while 2% changed their mind in the past three years from *'I don't know* to one position or another (Figure 30 top row).

The survey data yield similar tendencies in the acceptance of legal protection and local presence of bears and lynx, if on a lower scale: Consistent high levels of acceptance with Nature Conservationists and clearly declining levels with Hunters and more so with Livestock Raisers for both species. As for wolves, legal protection of bears and lynx is proportionally more accepted than their local presence; while both acceptance rates decreased more prominently for bears than for lynx (Figure 30 middle and lower row).





Do you think that these animals should be actively kept out of your local region? (2018 vs. 2021)

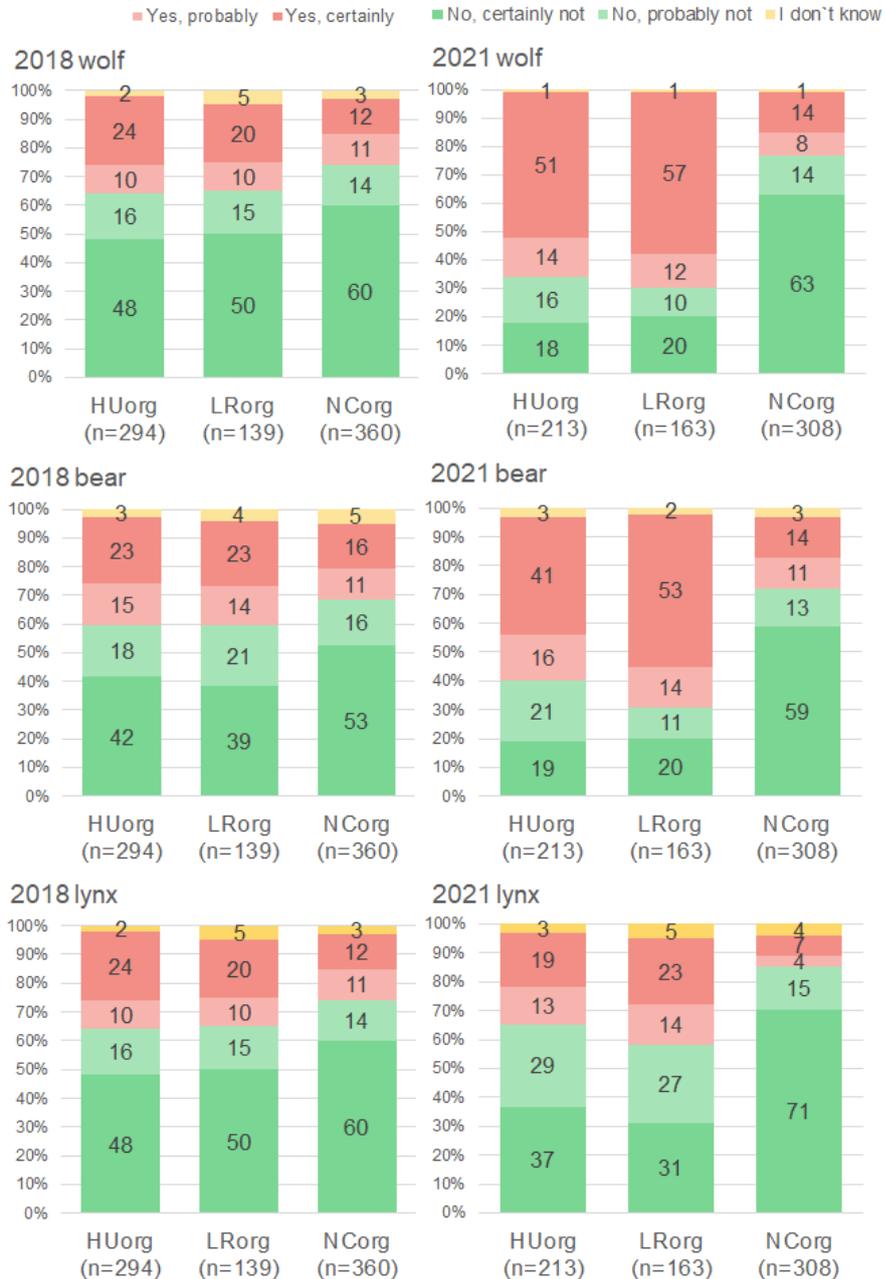


Figure 30 Attitude about the occurrence of wolf, bear and lynx in respondents' local regions according to institutionally organized members of three main stakeholder categories HU, NC and LR in 2018 and 2021





Combining the results of these two questions, we conclude that within two very relevant stakeholder categories of large carnivore management, Hunters and Livestock Raisers, the acceptance of legal protection of wolves and their presence in the respondents' local areas more or less halved over the past three years. These findings of our longitudinal study are in line with Franchini et al. (2021) who did a comprehensive review of different large carnivore acceptance studies and also detected a trend of reduced acceptance of large carnivore presence in cultural landscapes in Europe over the past years, especially with hunters and 'rural inhabitants (mainly farmers and livestock owners)' but not with nature conservationists and urban people. Ottolini et al. (2021), who analyze persisting and increasing conflicts over wolves, came to similar results. The Ukrainian partners (Box 10) described their experience about attitudes of Livestock Raisers towards large carnivores and the maximum viable impact of the project much in line with our findings.

Box 10 Do we change the farmers' attitudes towards large carnivores?

Change in attitude

Do we change the farmers' attitude towards LC? I guess not, but what we really did is persuade them that coexistence is really possible and make them advocates of prevention measures such as electric fences in the Carpathian region! (...) The aim of this project maybe not to change attitude of key stakeholders like farmers and make the them like LC, I guess idea of the project is to change their behavior in the way to learn how to coexist or avoid interactions with LC which would be beneficial to LC in total

Another aspect of success in changes in behavior is regular personal interactions with farmers during the whole year and trying to put ourselves in their shoes, not only providing coexistence tools but simply listening. In fact, good personal relationships were established between key stakeholders and nearly 10 of them became coexistence tolls advocates. WWFUA established personal working relationships not only with farmers affected by LC but also farmer associations; now we are actively working on LC damage compensation law.

WWF Ukraine

Project enabled:

- > Self-reflection by conservation actors about their role in networks
- > Opening up perspectives to improve relationships and cooperation with stakeholders with "opposing" views

This led to:

- > Building up trust with different stakeholders beyond the peer group
- > cooperation by different parties to a new common goal





k) Challenges and constraints in pursuing population based management

Whether we or anyone else puts intention into practice or not, is not only influenced by our motivation or knowledge on how to do it. It also depends on the frame conditions that we and our actions are embedded in (Holton et al., 2000). This chapter addresses in more detail what kind of direct social and structural support but also challenges and constraints stakeholders perceive in pursuing population-based management for improved conservation of large carnivores. Based on the returns to the nine statements survey question (*‘If you think about [...] activities of the EuroLargeCarnivores project that you have participated in, to what extent do you agree with the following statements?’ (2021 Q33 I-IX)*), we assessed which types and to what extent selected frame conditions influence stakeholders to practically implement what they have learned in the event(s) associated with the project (Research Question 4).

The following list of frame conditions (Table 22) starts with a selection known to positively influence any learning processes: *‘Before the event or meeting I had a good understanding of how it would fit my work/everyday life’* (Q33 I); *‘The topics of the events and meetings closely match the tasks and responsibilities in my work/everyday life’* (Q33 VI); *‘The best practice examples presented helped me to learn how to apply my new skills at work/in my everyday life’* (Q33 VII). The agreement to these statements by 70-77% of all participants of any project-related event indicates a rather good match of the project’s training offers with the needs of their addressees and also reflects good stakeholders’ choices regarding where to participate. A successful learning process generally results in motivation to use newly acquired knowledge and skills as mirrored by 90.9% of participants who *‘would like to use my new skills in my work/everyday life’* (Q33 II). Implementation then depends on time or workload and other resources available (Q33 III and IV), with about half of the participants working under favorable conditions. Other important factors are social support and encouragement (Q33 V), professional encouragement and related assignments by supervisors (Q33 VII). Social support by peers is felt by 61.6% of the participants, while 27.5% disagree, as to say they perceive no peer support for or even resentment against their endeavors. Supervisors’ direct or indirect support is received by 49.7% of the participants whereas 41.4% do not feel encouraged or positively challenged. The last statement (Q33 IX) goes one step further: some supervisors may even oppose employees who want to improve, i.e. change work approaches or innovate procedures. In the 2021 survey, 15.8% of those who participated in project activities perceived to be working in such a job environment. These last two statements obviously only apply to persons and jobs with supervisors and may not be applicable for, e.g., many Livestock Raisers or Hunters which explains the much lower numbers of respondents in these subsamples per statement.





Table 22 Structural support, challenges and constraints for learning and applying new skills

Structural and social support, challenges and constraints for learning and applying new skills in the pursuit of population based management for improved conservation of large carnivores					
	Q33	Agree (1+2)	Disagree (4+5)	I don't know (0)	n*
PREPARATORY FRAME CONDITIONS					
Before the event or meeting I had a good understanding of how it would fit my work/everyday life.		76.8%	14.2%	9.0%	233
The topics of the events and meetings closely match the tasks and responsibilities in my work/everyday life. (VI)		71,1%	25,4%	3,5%	228
The best practice examples presented helped me to learn how to apply my new skills at work/ in my everyday life. (VII)		70,3%	23,1%	6,6%	212
MOTIVATION					
I would like to use my new skills in my work/everyday life (II).		90.9%	5.2%	3.9%	231
SUPPORTIVE FRAME CONDITIONS OR CONSTRAINTS					
My workload allows me to try the new things I have learned. (III)		67.0%	26.9%	6.2%	227
I have the resources that I need to apply what I have learned in the events and meetings. (IV)		52,2%	40,3%	7,5%	226
I am encouraged by colleagues or friends to use the skills I have acquired in the events and meetings. (V)		61,6%	27,5%	10,9%	211
My supervisor sets goals for me that encourage me to apply the new skills and knowledge at work. (VIII)		49,7%	41,4%	8,9%	169
My supervisor opposes the use of the new skills and knowledge learned. (IX)		15,8%	73,9%	10,3%	165

*Number of respondents who participated in any related event (Q30(1)) minus the number of respondents who state that the underlying requirement of a statement (e.g. in statement IX to have a supervisor) is “not applicable”.

The results of this subsection on supportive, challenging or even constraining factors on a general scale mirror the results regarding different levels of impact found in previous topics, with very high motivation (90.9%) to increased practical knowledge (70.3%). At the same time, the findings elucidate which external factors are the most relevant in supporting or hindering implementation of these newly acquired skills for different stakeholders of large carnivore management.

The following Table 23 highlights external influences affecting actual behavioral change of people from different stakeholder categories in varying degrees, with a focus on Livestock Raisers, Nature Conservationists and Employees of Ministries and Administrations. Disagreements with the statements ‘My workload allows me to...’ (Q33 III(4+5)) and ‘I have the resources...’ (Q33 IV(4+5)) show that time/workload and the non-availability of other resources are limiting factors for at least a quarter of all participants of any project-related event (Q30(1) minus respondents who declare a statement as ‘Not applicable’ for them). Especially Livestock Raisers (33.7% resp. 41.4%) and Employees of Ministries and Public Administrations (31.2% resp. 47.5%) perceive over average





workload and other resource restrictions. This becomes especially apparent when comparing their responses to those of Nature Conservationists (24.2% resp. 33.7%).

Another important factor as to why people do or do not change behavior in the wake of enhanced knowledge is peer encouragement or (negative) peer pressure. While 46.7% of the Livestock Raisers in this subsample feel encouraged by colleagues or friends to use the skills they have acquired in project events and meetings, a distinct 35.6% do not perceive this social support or even report to feel the opposite (i.e. ‘strongly disagree’). A similar trend is observed for Employees of Ministries and Public Administrations with 30.4% not receiving encouragement from colleagues.

Table 23 External challenges and constraints for changing behavior: workload, resources and peer encouragement

Statements of respondents who participated in any event of the ELC project ...				
... concerning challenges and constraints for changing behavior (Q33)	Agree	Disagree	I don't know	n*
My workload allows me to try the new things I have learned (III).				
All participants of any project event , thereof	67.0%	26.9%	6.2%	227
- LR	51.5%	33.7%	14.9%	101
- NC	66.7%	24.2%	9.1%	198
- MA	60.0%	31.2%	8.8%	125
I have the resources that I need to apply what I have learned in the events and meetings. (IV)				
All participants of any project event, thereof	52.2%	40.3%	7.5%	226
- LR	43.4%	41.4%	15.2%	99
- NC	53.8%	33.7%	12.6%	199
- MA	43.4%	47.5%	9.0%	122
I am encouraged by colleagues or friends to use the skills I have acquired in the events and meetings. (V)				
All participants of any project event, thereof	61.6%	27.5%	10.9%	211
- LR	46.7%	35.6%	17.8%	90
- NC	66.1%	21.5%	12.4%	186
- MA	55.4%	30.4%	14.3%	112

*respondents participated in an ELC event Q30(1) (n=397) minus the answering option ‘Not applicable’

One more important influencing factor for changing behavior in the job context or not is the role supervisors and the institutional settings play. They may support or slow down change and





innovation by goal setting encouragement or explicit or implicit opposition to change, reflecting a potential discrepancy between formal goals of an organization and the will of the subunit or supervisor to actually foster and implement it (Ulrich, 2020). An insight into this issue helps to understand why persons who participated in project activities, now well trained and highly motivated to apply what they have learned, are not faster or more successful in inducing change. In our survey, 50% of all participants of any project-related activity feel encouraged by their supervisors to apply new skills at work, while 41% explicitly disagree (Table 24). When comparing the subsamples of Nature Conservationists (NC, many of them institutionally-organized, project participants or employees of project beneficiaries) and Employees of Ministries and Administrations (MA) engaged in large carnivore management, the effect becomes obvious. In the context of the EU LIFE EuroLargeCarnivores Project, an over-average 59% of the participating Nature Conservationists feel supported, compared to a below average 43% of Employees of Ministries and Administrations. On the other hand, 13% of Nature Conservationists and 22% of Employees of Ministries and Administrations concede that their supervisors oppose the use of their new skills and knowledge.

Table 24 External challenges and constraints for changing behavior: supervisors' role

Statements of respondents who participated in any one event of the ELC project ...				
... concerning challenges and constraints specifically in employment (Q33)	Agree	Disagree	I don't know	n*
My supervisor sets goals for me that encourage me to apply the new skills and knowledge at work. (VIII)				
all filtered by Q30(1)	49,7%	41,4%	8,9%	169
- thereof NC Q35(5 6)	59,0%	26,4%	14,6%	144
- thereof MA Q35(7)	43,6%	44,6%	11,9%	101
My supervisor opposes the use of the new skills and knowledge learned. (IX)				
all filtered by Q30(1)	15,8%	73,9%	10,3%	165
- thereof NC Q35(5 6)	12,9%	71,9%	15,1%	139
- thereof MA Q35(7)	21,6%	62,7%	15,7%	102

*respondents participated in an ELC event Q30(1) minus the answering option 'Not applicable'

MA = Employees of large carnivore management related Ministries and Administrations

NC=Nature Conservationists

An additional challenge for achieving long-term impacts is the relatively short time frame and inherent dis-continuation of project-related activities and resources provided. This issue was not





addressed in the survey but was discussed intensely in the qualitative reflections of project partners. Two examples from practitioners describe this situation (Box 11):

Box 11 Dis-continuation of activities challenging change on the ground

Project partners’ reports on need for continuous engagement in order to change things on the ground

It takes a long time to get authorities to commit to anything, so one or two meetings is not enough for them to sign a memorandum of understanding and agree on common management of the wolverine population. However, the first meeting was an important step in the right direction, and we hope that the dialogue will continue as a follow-up meeting and also after the LIFE project is over.

WWF Finland and WWF Norway

The #B5 workshop went really well and was a good start to get people together and identify ideas and approaches of how to improve large carnivore management in Brandenburg. So you get all those people – who are mostly already tired of workshops and talking – excited again and give them a feeling that there is a project now that will actually thrive to make some differences – and then there is no follow-up and you basically leave them disappointed again. I really wished we had at least focused on one of the good examples that came out of the #B5 workshop and offered the participants a concrete perspective and engagement opportunity to jointly work on this, however this never happened.

WWF Germany

Challenges for lasting changes are:

- Commitment by authorities as well as individual farmers takes time and recurrent engagement
- Follow-up and continuation of long term processes is not satisfying/fulfilled, both within the project’s capacity as well as beyond the project lifetime
- Sustainable changes may take place if continuation of activities and fostered engagement is secured

Prospect:

- Change and continuous engagement will be dependent on whether a follow up of successful encounters can be ensured after the project
- Importance to plan projects with a timeframe and goals, realistic to establish “self-running” processes and structures within their lifetime

The results described in this whole chapter indicate where project activities were and can be supportive: increasing awareness, knowledge and skills on stakeholder-level concerning different issues relevant for co-existence as well as improving accessibility of supportive resources by consultation for project participants to an over-average level. Additional external governance innovations need to take place to improve the frame conditions for actually implementing new approaches to population-based large carnivore management.

The topical results described above inherently point out several successful methodological approaches, activities, training programs, and outputs developed by the project which had positive





impacts on the stakeholder level towards coexistence with large carnivores and transboundary management of large carnivore populations. At the same time, they laid foundations for future endeavors as many challenges and constraints identified persist and promising developments induced by this EU LIFE Project take more time than the formal frame conditions could account for. Above all, this applies to the claim to gain a Europe-wide overview and at the same time to do justice to the various focus regions. Last not least, some of the methodological and training tools developed and provided by the project are recommended to be replicated in future follow-up projects and other contexts as well, especially for strategic stakeholder network development (Box 12), training concepts enhancing individual communication skills towards trust building, conflict mitigation and consensus-oriented communication and planning, and different monitoring and data exchange protocols.

Box 12 Replication of methodologies developed within the project

Replication of methodologies developed within the project

I really appreciated the setup and methodology of the stakeholder analysis and mapping developed in the project. [...] My feeling is that the analysis and mapping was very useful especially for those partners and countries that haven't been engaged so long/ so actively in large carnivore work before the ELC project. Here is a point for After-LIFE/Replication: We are in the process of beginning a Lynx Project in Thuringia and will definitely use the methodology developed within the project to map stakeholders in Thuringia.

WWF Germany

The Project enabled:

- Development of a systematic stakeholder identification and mapping procedure and manual
- Insight that the processes' value differs from country to country depending on the history of being engaged with LC issues.

This potentially leads to:

- Replication of methodology, approach considered useful for other topics or projects!





Discussion

In this chapter, we will first discuss the methodological approach of data collection and analysis. Second, we will assess the achievement of seven impact related ‘Key Performance Indicators’ (KPI) based on a cumulative interpretation of selected and aggregated results. Thirdly, the four main research questions will be answered in a consolidated way.

The methodological approach

The design of the impact assessment surveys was founded upon the results of the stakeholder identification and network mapping process (#A2) and the first online “Baseline” Survey in 2018 (Grossmann et al., 2019, 2020).

General criticism of yet another online survey about large carnivores, as voiced by some partners and other stakeholders, could not be adhered to, as it was agreed upon already in the grant agreement of the project. The suggestion to apply for a ‘LIFE action about how to harmonize different polls on the same topic’ or to conduct a meta-analysis of related surveys on more specific questions either on micro or macro levels should be seriously considered.

For the 2021 online survey, project partners invited both participants from the previous 2018 survey as well as additional new people. The prearranged multi-channel and pyramid distribution rendered high returns from many countries (Dillman et al., 2014). In other countries, only a few selected stakeholders were contacted individually by the partners. The two final data sets from 2018 and 2021 are therefore neither statistically and geographically representative nor distinctive for a defined stakeholder population. For these reasons, descriptive statistics have been applied, allowing for viable explorative results.

As was already the case in 2018, in 2021 the number of returns per country differed substantially. Again, the Scandinavian partners did not participate in this Action, limiting the overall results to central and southern European perspectives. In 2021, we observed major changes in the total number of responses for some countries, from triplicating to plummeting to a third of the previous return figures. In the absence of data concerning the motivation of non-respondents to the survey, we developed the following hypotheses for these differences:

- (a) different distribution lists used by the project partners in 2018 and 2021 (step one in the pyramid distribution) and (b) different channels (distribution modes);
- in case of a substantial increase of returns it can be assumed that (a) the active regional stakeholder network has expanded and stakeholder engagement has increased considerably or (b) the distribution channels, esp. more prominent use of social media or using neutral addresses instead of WWF addresses as dispatchers of the survey reached more respondents not actively involved in project activities. In some focus regions it is suspected that critical voices may have participated over-proportionally; if so this may also





be an indicator of active eye-level participation in regional negotiation processes concerning the management of large carnivores;

- substantial decrease of returns in a country may be a result of different factors such as (a) potentially unsatisfactory experience with length and complexity of the Baseline Survey in 2018, (b) unsatisfactory experience within the regional stakeholder networks and therefore reduced willingness to contribute to a survey, or (c) a reduced distribution of the survey by partners to fewer selected stakeholders compared to 2018 and refraining from snowball distribution and public access via websites and social media.

Elands and Wiersum (2003) experienced a similar challenge of uneven returns from different countries for a comparative European study on *Forestry and rural development in Europe* and developed sophisticated statistical methods to overcome these restrictions that were not feasible within the scope of this study. Consequently, the results are reliable conservative assessments but cannot be systematically extrapolated.

The period under review was restricted to only three years and therefore too short to assess mid- and long-term developments. The study also excludes potential outcomes and impacts of any project activity conducted during its last half year, beginning in October 2021.

In spite of the uneven return overall and per country, we presume a comparability of these two samples based on various similarities in demographic traits and the overall representation of all ten main stakeholder categories identified in the stakeholder identification and mapping process (Grossmann et al., 2019, 2020).

One difficulty encountered, however, was once again the distinction of ‘Local Residents’, i.e. stakeholders with residence in or near large carnivore territories of migration paths, in particular people without specific affiliation to one of the other categories (Ericsson and Heberlein, 2003; Linnell, 2013, Grossmann et al., 2020) assumed to encompass persons not professionally related to large carnivore management, living in rural settlements and roaming the local outdoors such as berry and mushroom pickers, strollers, dog walkers, joggers as well as touristic outdoor recreationists. (For a specific study on villagers living in European wolf habitat see Anthony and Tarr, 2019). The approach to ask for ‘outdoor recreation’ as an occupation in the 2021 survey did not prove sufficient. This multiple choice option was chosen by so many respondents (31.2%) that we have to assume that most of them are double counts of respondents self-affiliating also to professional occupations offered. A large overlap is also assumed for Hunters and Foresters, as found for Shepherds *and* Hunters or Scientists *and* Nature Conservationists by a qualitative study performed by Ottolini et al. (2021). Potential future data evaluations should therefore consider a correlation analysis of the multiple choice occupations. Another aspect to be discussed is the domination by academics in both samples, with almost three quarters in both samples, independent of their actual occupation. This high return rate of academics is often found in studies with written surveys relying on self-recruitment for participation. This leaves the question of how to better reach non-academic survey participants for future endeavors.





When comparing identical questions posed in 2018 and 2021, we described comparative tendencies, but applied no statistical analysis. New independent questions posed in 2021 focused on stakeholders' perceived changes during the past three years. To assess a direct impact of the project on these changes, which may also be subject of several external trends and influences independent of the EU LIFE Project, and acknowledging the overrepresentation of certain occupations in different countries, we chose to compare averages to either specific occupations overall, or to subsamples related to participation in project activities.

Assessment of selected impact related 'Key Performance Indicators' (KPI)

In this section, the Forest Research Institute of Baden Wuerttemberg (FVA) provides its findings and conclusions from the #C1 activity for 'Key Performance Indicators' 3, 12, 13, 14 and contributes findings to the assessment of 'Key Performance Indicators' 6, 8, and 9 that are subject to further assessments on the part of the monitoring team (lead by blue!).

KPI 3: 45 jobs upgraded

Full indicator: 45 jobs for local stakeholders and local/regional authorities are upgraded through improved (communication and other) skills in LC management or adoption of best-practices.

Achieved: 174 jobs for local stakeholders and local/ regional authorities have been upgraded by enhanced communication and other skills of their jobholders during the project's lifetime. At least 86 (49%) of these jobholders with improved skills can be related directly to participation in project-organized training events and seminars. Based on the project's underlying hypothesis that better communication skills and strategies are key to large carnivore management or adoption of best practices, we conclude with a full (over-)achievement of the KPI's target of 45 upgraded jobs for local stakeholders and local/regional authorities through EU LIFE EuroLargeCarnivores Project activities.

First real impact could also be detected: 55% or 154 of all #B5 training participants agreed to the statement of *'Using the communication skills I have learned in one of the training has already helped to strengthen trust between me and other stakeholders.'* (Q29 IV). How far this 'upgrading' will have an impact on the next level in regions of co-existence such as rural income generation, work efficiency, or changes in sheep or large carnivore populations, would need further and more in-depth studies in the future five to ten years.





KPI 12: At least 60 livestock raisers adapt to improved herd protection practices.

Full indicator: At least 60 livestock raisers adapt to improved herd protection practices, use protection measures in the region where the corresponding activities are conducted (mainly #B7²⁵).

Target number nearly achieved in the survey return and expected to be fulfilled overall:

In the 2021 survey, 52, i.e. close to 60 Livestock Raisers, were identified to have taken up or adapted improved herd protection practices since 2018. Even though 328 Livestock Raisers participated in the survey, and not all of these participated in a project activity, this is obviously only a fraction of those 2314 Livestock Raisers reported to have participated in B7 activities, of whom 2111 are perceived by project partners to 'have gained a better understanding of coexistence practices' as documented in the blue! Final Monitoring Report (2022)²⁶. In the end, the #C1 results closely correspond to those 50 Livestock Raisers reported in the Final Monitoring Report who actually adapted and implemented improved herd protection measures. The uptake and implementation of newly acquired knowledge and skills take time (Kirkpatrick, 1960) and supportive frame conditions. The data indicate that at least two to three times as many Livestock Raisers have 'learned more about HOW to use [improved herd protection measures] since 2018' compared to those who already implement them. Even though some Livestock raisers started to implement or learn about improved herd protection measures without having participated in respective project activities, proportionally more so have done it in the project's context. The relevance and positive impact of the project activities is therefore well reflected in the survey results. Based on these findings, we conclude that the project's target figure for KPI 12 has been reached and this development can be attributed in large part to the project activities.

KPI 13: 60 local conservation and management actors improve their communication skills

Full indicator: 60 local conservation and management actors improve their skills on stakeholder's communication and conflict resolution.

Achieved: The 2021 survey documents an overwhelming preparatory achievement for 'Improving human coexistence with large carnivores in Europe through communication...'. Almost 90%, or at least 88 local Conservation and Management Actors (NCorg) who participated in communication and conflict resolution training (mainly #B5 activities), report to have improved their respective skills and a majority already implement them. More than half (154 of 279) of all training participants, independent of their occupation, already perceive a positive impact of actually implementing these newly acquired skills, such as strengthened trust between different stakeholder groups. Based on these findings, we conclude that this KPI13 has been very well achieved, even

²⁵ #B7: Initiating and facilitating peer-to-peer exchange of livestock protection measures between farmers

²⁶ https://drive.google.com/file/d/1ntfA73ewnwoOvLP8I_v1UEjXSGToLNfI/view





more than doubled its target, and the respective project activities were of great value to its overall aim.

KPI 14: 10 institutions are engaged in a transboundary exchange.

Achieved: 215 or 20.4% of all survey respondents report to be actively engaged in transboundary exchanges. Thereof 162 (75%) state to cooperate more actively across borders since 2018. 51 or 32% of these are ‘Employees of a Ministry, Administration or Public Authority concerned with large carnivores’ (MA) (see topic section f) for details). These results are positively in line with the project’s overarching aim of ‘*Improving coexistence with large carnivores in Europe through [increased] transboundary cooperation*’. This increased individual engagement gives a strong indication that awareness about the necessity of transboundary exchanges and skills for respective actions are on the rise (see also Nita et al., 2016).

As several of those MA respondents may work for the same institution, the indicated figure most likely overrates the institutional level of transboundary exchange but it is assumed that not more than five employees per administration responded to the survey. The data therefore do not allow to identify the exact number of institutions involved in this increased exchange but even a conservative assessment of the high figures of actors’ involvement points to at least ten institutions.

The total number and names of over 100 institutions known to project partners to be actively engaged in cross-boundary cooperation for large carnivore management were collected by the Monitoring Team. The benefit of this part of the #C1 study was the assessment of change over time and of the impact of different project activities on individual relevant stakeholders.

Complementary results for #C2 “Monitoring and Evaluation” for KPI 6, 8 and 9

For the following three ‘Key Performance Indicators’ (6, 8, and 9), the main monitoring activities are primarily assigned to #C2 and/or #C3 conducted by blue! The #C1 Survey 2021 provides complementary data and results.

KPI 6: 10% of stakeholders involved in project activities increase acceptance of large carnivores

Full indicator: At least 10% of stakeholders involved in project activities state that their acceptance towards large carnivores and management measures has increased.

Not achieved: Based on results described in detail in topic section j), we have to conclude that the project’s KPI 6 target was not reached. A comparative and differentiated analysis between 2018 and 2021 shows a general reduced acceptance of large carnivores, most probably beyond the project’s realm (see also Franchini et al., 2021). This tendency could partly be counteracted by project activities. The percentage of respondents who had participated in project activities and believed in





satisfactory management of growing large carnivore populations is distinctly higher than that of respondents who did not participate. The project's activities were therefore important to keep baseline levels (2018) of large carnivore acceptance and confidence in their management at least with participants of project activities of Hunters and Nature Conservationists.

KPI 8: 20% of the participants of project activities state that their self-efficacy has improved

Full indicator: At least 20% of the participants of the project activities state that their self-efficacy in regards to large carnivores has improved (ability, competency or skill to perform a particular behavior to decrease level of conflict).

Achieved: Based on the survey results it can be concluded that KPI 8's target has been reached: more than 20% (at least 25%) of participants of project activities have improved their self-efficacy in regards to large carnivores over the project's lifetime. For details see topic section a).

KPI 9: 30% of the participants of project activities are more engaged in networking

Full indicator: At least 30% of the participants of project activities state that they are more engaged in networking as a result of the project.

Achieved: Based on results described in detail in topic section b), we conclude that KPI 9 has been well reached. A conservative assessment indicates that at least three quarters (79.1%) of the participants of project activities are more engaged in and better prepared for networking since 2018 as a result of the project, and therefore many more than the targeted 30%.

Answers to the four main research questions

1. To what extent have project activities led to changes in **awareness** and **attitude** of stakeholders about conservation and management of large carnivore populations, and the potential to proactively improve coexistence with large carnivores in Europe?

Over all topics addressed, the survey results show that awareness about important issues fostering or hindering coexistence with and transboundary management of large carnivore populations is generally very high throughout different stakeholder categories, on average ranging above 80%. Examples are:

- It is important to get in contact with newly identified relevant stakeholders in the future (79%).
- It is important to engage and listen to opinions that differ from my own (99%).
- There is (still) a great need for harmonizing monitoring standards across administrative and national borders (84%).





- Wildlife crime is a great problem with regards to the achievement of conservation targets for large carnivores (86%).

In all cases, respective awareness rates were considerably higher with respondents who had participated in project activities than average.

The question on awareness about the need for transboundary cooperation was not posed directly. But we found a high awareness with those 71% of 721 responding ‘*Members of a government institution, hunting, agricultural or nature conservation associations/NGO*’, directly or indirectly concerned about or involved with the management of large carnivores who were already actively engaged (41%) or interested (30%) in transboundary cooperation, while only 7% explicitly said they were neither actively engaged nor interested (22% found the request not applicable to them).

Concerning the need for and helpfulness of fact-based information, more than half of the responding media representatives found public fact-based information helpful, a higher percentage than over all respondents. The other half of the media representatives were either not aware of them or not convinced about their quality. In Spain, the amount of positive, more fact-based or more balanced media coverage rose during the past three years (comp. Houston et al. 2010). Similar individual observations were reported from Austria and Greece.

Answering the question about the **attitude** of stakeholders about conservation and management of large carnivore populations and the potential to proactively improve coexistence with large carnivores in Europe is more complex.

The 2021 survey recruited more rural residents than in 2018. While this is a positive result in terms of their increased engagement, the increased participation in the survey may also have influenced the average tendency for less acceptance of large carnivores, assuming a general tendency for less acceptance in the countryside.

We therefore analyzed potential changes in attitude in relation to project participation, acknowledging that attitudes are deeply rooted in people’s general worldviews (Jürgens and Hackett, 2021) and that, in turn, wolf-specific beliefs influence the acceptance of wildlife conservation and management more intensively than new information or increased objective knowledge (Hunziker et al., 2001; Skogen and Kränge, 2020). In addition, there may be a connection that people who ‘per se’ do not believe in the possibility of satisfactory management of growing large carnivore populations also chose not to participate in coexistence-oriented project activities or do, in general, not inform themselves about such opportunities (Jürgens et al., submitted).

Based on our results, we have to conclude that the project’s target ‘*...stakeholders involved in project activities state that their acceptance towards large carnivores and management measures has increased*’ was reached for some, in qualitative terms, but not quantitatively for all stakeholders.





A differentiated analysis of three main stakeholder categories suggests at least a stagnation of large carnivore acceptance and a clearly negative tendency with hunters and livestock raisers. The observed tendency towards decreasing acceptance of legal protection and local presence of large carnivores and reduced confidence of satisfactory management of increasing populations may be attributed to different changes in socio-political, socio-economic and ecological frame conditions in recent years (Franchini et al., 2021) which, in addition, mutually influence one another (Blok, 1980), most probably beyond the project's influence.

As shown in our 2018 and 2021 surveys, acceptance of legal protection of large carnivores was usually over average (see also Franklin, 1999) but always higher than the acceptance of their local presence (see also Ericsson et al., 2006; Ericsson et al., 2008). This position is one of 'NIMBY' ('not in my backyard') and applies to stakeholders who support principles but not practices, as described for hunters and wolves in Sweden by Von Essen (2020) and for bears in Switzerland by Mondini (2011).

Focusing on the findings within our samples, one additional explanation for a declining acceptance may also lie in the increased presence of large carnivores in the local areas of our survey respondents since 2018, or, alternatively, in a higher representation of respondents living in or near large carnivore habitats in the 2021 sample compared to 2018. Either way, factual or expected increased presence of large carnivores and related damages or heightened workload for damage prevention as well as resulting anxieties and conflicts with stakeholders of different viewpoints on the issues such as distribution of costs and benefits, lifestyles, environmental harm and environmental good most probably are important variables for this development of acceptance levels within different stakeholder categories (Houston et al. 2010; Jacobsen and Linell, 2016).

Still, the project activities did have a positive impact on the stakeholder level as this tendency could partly be counteracted as is reflected by the distinctly higher percentage of respondents who had participated in project activities and believed in satisfactory management of growing large carnivore populations, compared to respondents who did not participate. For Hunters and Nature Conservationists it could even be shown that participation in project activities slightly increased the share of stakeholders confident in future management measures beyond levels of 2018, if not with an overall effect, while participating Livestock Raisers could not balance off the general negative tendency within their sample. The project's activities were therefore important on the one hand to keep baseline levels of confidence (2018), at least with participants of project activities of two main stakeholder categories, and, on the other hand, to further develop strategies how to better engage, inform and train stakeholders how to improve coexistence with large carnivores against a current general negative trend.





2. To what extent have project activities led to changes in **knowledge** of project beneficiaries and other stakeholders?

Over all topics, the data show two main trends: in all stakeholder categories knowledge and skills about management issues concerning co-existence with and management of large carnivores are on the rise, with or without the project. This includes increased knowledge about networking strategies, communication and conflict mitigation techniques, different herd protection measures, financial support instruments, transboundary cooperation for population-level management, developing effective monitoring standards, approaches to reduce wildlife crime, as well as the provision and use of fact-based information. Knowledge and skills necessary for dealing with all these topics have increased with the majority of the respective target groups if on lower average than the levels of awareness of their importance.

It could be shown that the project activities have contributed substantially to this general development. On the one hand, the subsamples of project participants always score higher than the average and higher than non-participants. On the other hand, the contribution of the project to improved knowledge and skills - sometimes also to their implementation - was rated positively by about 70% of the respective subsamples for each topic: 30% (+/-5%) stated that the EU LIFE EuroLargeCarnivores Project contributed '*substantially*' and 43% (+/-3%) said that it contributed '*a little bit*'.

3. To what extent have project activities (...) led to **behavioral or structural** changes, especially with regard to herd protection and population based management of large carnivores?

The largest positive impacts of the project on stakeholder behavior and outcome levels were found for project activities and goals addressing stakeholder network development, communication and conflict resolution skills and techniques, with 62% - 65% of the training participants reporting an application of these skills and the perception of positive impacts: 71% report a positive expansion or development of relationships within their stakeholder networks. 65% of all participants and 96.6% of the project partners, the original and primary target group of these activities, state an improvement of their communication skills with 55% already perceiving a positive impact due to their application.

Improved transboundary cooperation is the second biggest achievement of the project. While an average of 42% of all representatives of institutions potentially engaged in population-based management of large carnivores, state to have increased their cross-border activities since 2018, the impact of the project becomes obvious when 79% of those respondents who had attended at least one of the project's specific transboundary events and activities agree to this statement, compared to 33% of respondents who did not participate in any project activity. According to the survey, this has already contributed to an increased active exchange of monitoring data (57% on





average and 66% for project event participants) and further steps to standardization of monitoring across administrative borders (42% on average and 59% for participants).

The project's target of increased and improved herd protection in the project's focus regions has been achieved, if probably not quite on the scale as was hoped. Extension service and cooperation with livestock and domestic animal owners is a challenging, resource and time consuming activity, last not least greatly inhibited by the COVID19 pandemic raging in Europe during two of the four project years. While many other project activities could be successfully rearranged into digital formats in due time, the very important personal encounters, informational events and cooperation in the field, especially with Livestock Raisers and probably other, mainly non-academic, stakeholders were extremely impeded by lockdowns and other severe restrictions for travel and 'real' meetings. Still, the project's goal to foster contacts in the countryside was achieved as is mirrored by the good return rate of 328 Livestock Raisers in 2021, of which 27% have learned HOW to use improved herd protection measures and 16% already apply them, adding up to 139 (42%) of the responding Livestock Raisers.

The project's positive impact is reflected by 69% of the 61 responding Livestock Raisers who participated in a *'Conference, seminar, round table, excursion or peer-to peer exchange on livestock protection measures or their supported implementation'* and stated that the EU LIFE EuroLargeCarnivores Project contributed substantially (30%) or a little bit (39%) to their ability to establish new or improve existing livestock protection measures. At the same time, these results show that less than a quarter of those Livestock Raisers participating in the survey could be reached by the project's training and extension offers while other sources of information and triggers of improved herd protection already have an important impact, too.

The respective figures for institutional and structural changes in financial instruments for protection against or compensation for large carnivore-induced damages as well as for investigation and prosecution of wildlife crime, as impact of topic-specific project events, are not quite as distinct. The most interesting finding is that new or improved financial instruments have rather been developed or implemented for protection measures (58%) than for damage compensation (50%). Direct positive impact of the projects could not be clearly assessed in relation to respondent's participation in topic-specific project events as the difference to the average ranged only between +2% for protection and -2% for compensation. Still, the underlying tendency in both findings is much in line with research-based recommendations propagating the support of prevention measures before compensation schemes and recommending to make the latter dependent on prevention (Naughton-Treves, 2003), as is also emphasized by the EU LIFE EuroLargeCarnivores Project. A positive impact of the project could be detected for increased actual consultation of applicants by 55% on average and +9% for participants of related project events.

An extra 5% of institutionally relevant respondents who had participated in specific project activities aiming at reducing wildlife crime report investigating wildlife crime more successfully within the past three years, compared to the average 52%, and -4% (less than the average of 41%) state to be prosecuting it more actively. The latter 'negative' figure may also be considered a positive impact of the project. The legitimacy of different institutions and interest groups actually





investigating and possibly prosecuting wildlife crime was discussed repeatedly on different levels within the consortium.

4. What kind of **challenges and constraints** do stakeholders perceive in pursuing population based management for improved conservation of large carnivores?

Transferring increased awareness and newly acquired knowledge and skills into action needs good preparation, readiness to learn, motivation and structural support (Holton, 2000). At the same time, practitioners in any occupation encounter challenges and constraints when willing to apply new skills in the pursuit of population-based management for improved conservation of large carnivores.

We found very high levels of motivation to use new newly acquired skills at work and in everyday life with participants of any project event (90.6%). Positive frame conditions needed to do so are experienced by only two thirds to less than half of these respondents (67% to 49%), in terms of sufficient margins in workload, encouragement by colleagues or friends, resources available, and positively challenging or supporting supervisors (where applicable), in that order. The other side of the coin is that, for example, for 40% of respondents resources are missing and for about a quarter each the existing workload is an explicit hindrance. The same percentage perceives peers as critical about their endeavor. 41% do not feel encouraged by their supervisors and 16% even state that *'my supervisor opposes the use of the new skills and knowledge learned'* (e.g. 13% for employed Nature Conservationists and 22% for Employees of Ministries and Administrations). In detail, more Livestock Raisers claim restraining workload and least peer support, compared, for example, to Nature Conservationists and Employees of Ministries and Administrations, while the latter score highest (47%) in perceived unavailability of resources.

The recent development of the top five general challenges on regional level impeding stakeholder networks and cooperation towards coexistence with large carnivores was perceived as unchanged by about half of the respondents. Interesting are the differences in numbers of respondents who perceive positive or negative developments for those challenges that were and could be directly addressed by the project activities. For those two challenges the project directly aimed to mitigate (*'Lack of knowledge/problem understanding by some groups involved'* and general *'Lack of communication'*), more than a third of respondents (39.4% resp. 37.5%) perceive an improvement of the situation since 2018, in both cases twice as many respondents as those perceiving the situation as worsening. For the other three challenges beyond the project's direct influence (*'Contradictory economic interests'*, *'Different opinions on large carnivores'* as well as *'Prejudices'*), the pessimistic voices dominate at least slightly. On the one hand, this backs our findings concerning stagnating to declining acceptance of large carnivores' legal protection and local presence in Europe. On the other hand, it may be due to the early timing of this study which detects a shorter term positive impact of the project of improved communication on stakeholder





level (change in behavior/outcome) compared to aspired longer term (positive) impacts on general attitudes including prejudices.

Networking across administrative and national borders is challenged by similar but also other constraints. Again, more or less half (48-56%) of the respondents perceive no changes in the respective situations, while 30-42% of the respondents perceive an improvement in challenging situations encountered. Interesting is the finding that on a transboundary level the *'different opinions on large carnivores'* seem to have aligned much more often (30% improvement vs. 17% worsening) compared to the discrepancies on regional levels (24% improvement vs. 29% worsening). Our explanatory hypothesis is that on a political level and within stakeholder categories from different regions, the opportunities provided by the project to meet across administrative borders have contributed to a mutual understanding and alignment of opinions and more so than between different stakeholder categories in a certain region. The only top challenge increasingly impeding transboundary management of large carnivore populations for 30% of the respondents are the *'Confrontations of political camps'*, an issue and finding that mirrors a development in current European societies in many different aspects of co-existence, not only concerning large carnivores.

Trends in attitudes and human-human conflicts revolving around large carnivore management are multifaceted, ever-changing within surrounding societal changes but also path-dependent (see also Redpath et al., 2015; Peterson et al., 2010) and persisting (Andersen et al., 2003; Eklund et al., 2017). Different coexistence strategies, whether economic support and compensation schemes or land sharing or sparing approaches, create severe, often unacknowledged trade-offs between livestock production and carnivore conservation, or unforeseen new ethical and social injustice (Bruskotter et al., 2021). Any perceived shortcoming of a solution-oriented compromise may then become a new spark for a continuation of the conflict with a different focus. We argue, in line with Ottolini et al. (2021), to adopt and adapt interventions that aim at mitigating or at least preventing escalation of conflicts but not necessarily at resolving them. Instead, consider an open-mindedness toward the multitude of sources of conflict. Follow and monitor the enduring lives of conflict, especially over wolves, to be able to address critical issues that are directly induced by the presence of large carnivores but can be practically improved, and keep the prudence of trying to overly manage these human-human conflicts.





Conclusions and Recommendations

The EU LIFE EuroLargeCarnivores Project has been designed for a very broad and comprehensive approach to enhance successful cross-border management of large carnivore populations and improve coexistence with them in Europe. This very ambitious endeavor was greatly challenged by the COVID19 pandemic that started about half way into the project and consequential life- and work-impeding restrictions that lasted throughout and beyond the project lifetime. Still, the project succeeded in fulfilling all its obligations, with only minor changes, and reached basically all of its targets as defined by 67 Key Performance Indicators. This was only possible due to the enormous motivation, dedication and stamina, sometimes beyond reasonable limits, of every single person involved in the project activities.

Discussions about the political will and practical consequences of successful conservation and increasing large carnivore populations in Europe constitute a very dynamic field and concern many sectors and disciplines. In this broader and longer term context, the EU LIFE EuroLargeCarnivores Project was neither the first nor the only project or institutionalized process active on many different levels and fields of action to enhance large carnivore conservation.

The ELC study ‘Monitoring the impact ‘before’ and ‘after’ was conducted by the Forest Research Institute of Baden-Wuerttemberg (FVA) in close collaboration with all project partners. The study’s concept was based on a theoretical linear logical model of how activities evoke changes or ‘impacts’, whether intended or unintended. The model describes the intended relations between planned actions of a project and how their results contribute to achieving a project’s goals on different levels: activity, output, outcome (change in behavior) and overall impact of the changed behavior (e.g. further increase of large carnivore populations, less damages, coordinated transboundary management), as well as their interdependencies. In this report, we focused on the ‘outcomes’ of the project, or, more commonly, on the ‘impact on the stakeholder level’. The study applied two different social science based methodological approaches (qualitative and quantitative longitudinal) and took different viewpoints (project partners and other stakeholders) into account to appraise the impact of project activities on stakeholders of large carnivore management and coexistence in Europe.

The results of the study are in line with theoretical expectations: numbers for raised awareness of relevant issues always scoring highest, the increase of theoretical knowledge and skills scoring higher than practical knowledge of how to actually do it, and change of behavior (outcome), i.e. implementation of new skills acquired, scoring lowest but in this case on very satisfactory levels. The actual impacts on the stakeholder level are the results of an iterative process of sending, interpreting, and reacting to information which involves the persons addressed, as is discussed in interactional or transactional models of communication but also conflict research (Leeuwis and Aarts, 2011). In this case, it is how one’s own changed behavior consequently contributes to reaching its aim, such as cooperation with relevant stakeholders one was previously not engaged with; identification and commitment to common goals with parties starting from different





viewpoints; improvement of herd protection and subsequent reduction of damages induced by large carnivores; mitigation of human-human conflicts; augmentation of skills relevant for pursuing jobs in the context of large carnivores conservation and management or enhanced transboundary cooperation of administrations for data exchange and increased standardization of management tools. Examples of the evolution of such ‘impacts’ were provided in the form of qualitative narratives to substantiate and potentially explain the quantitative findings of the study.

The quantitative results show that the targets set by the project for impacts on the stakeholder level (the Key Performance Indicators) were all reached, but one. A differentiation of general trends and the potential impact of the project detected several general positive developments in large carnivore management and coexistence but also confirms that these were reinforced by project activities, visible through higher scores for project event participants than for non-participants. For different aspects of ‘attitudes towards large carnivores’, stagnating or negative general tendencies were observed overall as well as for specific stakeholder categories. The study indicates that even in these cases, project engagement with these stakeholders could partly counterbalance these tendencies, if not overall.

The project’s primary achievements, as observed in this study, lie in the fields of (i) improved communication, negotiation and conflict mitigation skills and behavior, (ii) enhanced transboundary cooperation, including aspects of monitoring and wildlife crime and (iii) livestock damage prevention, in that order. Positive developments were identified for (iv) establishment and improvement of financial support instruments for damage prevention measures and related extension services and (v) the provision and uptake of fact-based information. Some of the main general challenges and constraints for successful large carnivore population management and coexistence identified in 2018 did not change much overall but could be positively influenced by project activities within the respective stakeholder networks. All of these accomplishments are worth following up as they require more time and resources to either fully establish or to continue to successfully counteract negative tendencies.

Based on these findings, we deduce the following recommendations and address them to the EU LIFE program and future related projects, to the European Regions and their respective subnational administrations, to Member States and the European Commission, in accordance with their different important roles in supporting and facilitating local and transboundary large carnivore management and coexistence-related endeavors.





Communication, consensus oriented negotiation, and conflict mitigation

- Request and ensure proactive, systematic, inclusive and transparent participatory identification^{27,28} and eye-level give-and-take engagement of people from diverse backgrounds and diverging viewpoints in carnivore-related projects.
- Be aware, plan and provide for challenges in terms of time and different channels of communication to engage with, especially public authorities and not professionally involved 'local' people and non-academics from other fields.
- Take up, further develop, facilitate or implement training programs on consensus-oriented communication²⁹ and mediation for employees of regional and local administrations and other institutions and associations working on large carnivore topics, or provide for respective external services.
- Request and provide capacity for external professional moderation of potentially conflictual meetings/processes, especially if situations appear to escalate.
- Show readiness to engage in meaningful goal-oriented negotiation and participatory development processes and ensure that all stakeholders communicate on eye-level, including the organizers.
- Engage in meaningful goal-oriented negotiation processes to include practical and scientific expertise from different viewpoints in any type of regulation or service development.
- Consider and recommend the use of methods and manuals, materials, publications and services developed throughout the EU LIFE EuroLargeCarnivores Project, accessible via <https://www.eurolargecarnivores.eu/en/>.

Transboundary exchange

- Facilitate and support staff meetings to exchange information with their counterparts in all neighboring European regions, inside a Member State and across Member States, especially for monitoring of large carnivore populations, damages, as well as wildlife crime.
- Promote and support population-level, cross-border management of large carnivores by providing projects and opportunities to meet across administrative borders, especially for employees of authorities commissioned with large carnivore management but with little resources available.
- Continue to standardize monitoring procedures, especially for large carnivore populations, protection measures and damages as well as wildlife crime and develop a population-based large carnivore management system that is implemented in a coordinated manner with neighboring countries.

²⁷ Grossmann et al. (2019): EuroLargeCarnivores A2 Final Report; publicly accessible [EuroLargeCarnivores Final Report #A2 revised 20190404 copy with new links.pdf](#)

²⁸FVA 2018: Stakeholder Analysis Manual [EuroLargeCarnivores A2 Manual.pdf](#)

²⁹Elmauer Institute 2018: Facilitators Notebook - LIFE EuroLargeCarnivores Project Communication and Collaboration Training for Facilitators, 22. - 26. January 2019 [DELIV15 PV1 Consensus Training Material.pdf](#)





Protection measures for livestock other domestic animals

- Implement and further improve strategies to more efficiently contact and engage with more Livestock and Domestic Animal Raisers.
- Directly make use of local (public) support instruments for engaging pioneers and for exemplary best management practices and techniques in large carnivore conservation.
- Provide farmers more broadly with low-threshold damage prevention extension services addressing viable fact-based practical measures and tools, their sources and implementation as well as the financial support available to reach high-quality coverage of damage prevention.
- Stipulate frequent peer-to-peer exchanges of livestock and other domestic animal owners, shepherds, livestock guardian dog breeders, hunters, and other occupations related to large carnivore management within or across neighboring European regions.

Financial instruments for large carnivore-induced damage prevention and compensation

Qualitative data suggest that promising developments are evolving independently or are induced by project activities. Many of these are long term processes and their outcomes and impacts are thus not detectable within the project lifetime. The following recommendations are based on research based literature and short term positive experiences and successes. Where not yet standard,

- develop and implement financial support instruments for damage prevention measures available not only to livestock owners but also bee-keepers and owners of other domestic animals;
- aim for reasonable percentages of reimbursement for costs of appliances AND extra working time;
- make financial compensation of damages caused by large carnivores conditional on previous implementation of preventative measures with adequate advance information and transition periods;
- provide for an efficient extension service to inform about and apply for financial support instruments.

Fact-based information

Sometimes neutrality and conflict resolution may not always be in the interest of the parties involved. In the media, their existence is enlivened by dramatization and polarization as it depends vitally on serving specific interest groups (e.g. readers or contributors). Increased balanced reporting (not neutral, but reflecting different views) and fact-based information is considered an achievement. We recommend...

- facilitating and continuing to develop and update comparative and rhetorically neutral fact-based information material for the media (e.g. press kits, species fact sheets), the tourism sector (on risk reducing behavior) and for other specific stakeholder groups;





- requesting, providing for or translating fact-based, neutrally formulated information material into local and ‘easy’ language.

Further research needs

- Viability of different herd protection measures in different geographical settings and with different large carnivore population densities (including comparative settings without herd protection).
- Effectiveness of different financial support instruments for damage prevention as prerequisites or single alternatives for damage compensation schemes. Identification and evaluation of the effectiveness of alternative pilot schemes, like performance bonuses.
- Comparative local-level socio-economic appraisals of large carnivore-related costs and benefits and options of sharing them between different stakeholder groups within or across different European Regions.
- Systematic long-term impact studies five and ten years after project termination (requiring baseline surveys, measurable project-related targets, retaining raw data, e.g. also names of people that participated in the project, in line with the European General Data Protection Regulation (GDPR)).

The LIFE Program and the EuroLargeCarnivore Project proposal considered and successfully addressed all these recommended aspects from the very beginning but had to embed them in a very ambitious timeline, probably too ambitious, especially for developing self-sustaining, partially transboundary multi-stakeholder governance schemes to be facilitated by public bodies. We therefore recommend the European Commission and the European Member States to continue to provide for a continuation of the LIFE Programs for follow-up transdisciplinary research and implementation projects as well as to continue to request and facilitate regional authorities to engage in coordinated transboundary large carnivore management and support for coexistence.





Acknowledgements

The study has been performed within the EU LIFE EuroLargeCarnivore Project (LIFE16GIE/DE/000661-B1) funded by the European Commission.

The authors would like to thank all members of the FVA EuroLargeCarnivore team, from student volunteers, part time temporary scientific employees, to full-fledged full time scientist, for their various helpful contributions to the ground laying preparatory studies: Johannes Erretkamps, Lena Holzapfel, Eva Kimmig, Dominik Ortseifen, Ulrich Schraml, Pieter Van der Lei, and Kaja Weinandi. Thanks go to our colleagues in the FVA-Wildlife Institute, Judith Ehrlicher, Micha Herdtfelder, Laura Huber-Eustachi and Rudi Suchant, for supporting the survey distribution and sharing their species-related expertise. We thank Ben Helmich for his technical support in the design of the online questionnaire and data template for this specific study, Tabea Klinger for advising us in the process of data analysis, Anna Kaufmann, Kristina Wirth and Lara Koppelman for their short-notice reviews of the report and Stephanie Bethmann for her valuable strategic support.

We greatly appreciate the great work and time invested by all our project partners to contribute their knowledge and experience in the form of qualitative and quantitative data, to support quantitative data collection with other stakeholders by translating and distributing the questionnaire in their focus regions and for contributing to the discussion of the results: Zanete Anderson-Lilley; Roberto Aquerreta, Marta Barata, Rui Barreira, Gavril Marius Berchi, Mauro Belardi, Blanca Berzosa, Eva-Maria Cattoen, Roman Cherepanyn, Piotr Chmielewski, Livia Cimpoeru, Yolanda Cortés, Anna Crimella, Kai Elmauer, Magdalena Erich, Linda Esche, Raffael Hickisch, Barbara Immerová, Ioana Ismail, Béatrice Jouenne, Moritz Klose, Ana Kvaric, Adrian Lutrzykowski, László Patkó, Ramón Pérez de Ayala, Christian Pichler, Miroslava Plassmann, Irma Popovic Dujmovic, Jean-Christophe Poupet, Bohdan Prots, Ján Rohác, Barbara Sallee, Joanna Schonenberger, Neven Slopar, Christine Sourd, Katharina Schuhmacher, Jergus Tesák, Petteri Tolvanen, Suzanna Tymochko, Romana Uhrinová, Gabor von Bethlenfalvy, Bohdan Vykhov, Stella Webeler, and Elena Wenz.

Sincere thanks go to all individual anonymous respondents of the online surveys.

Disclaimer: The content of this specific report is the full responsibility of the authors and does not necessarily reflect the opinion of all project participants.

Funding: The study has been funded by the European Commission and the State of Baden-Württemberg within the framework of the EU LIFE Project EuroLargeCarnivores (LIFE16GIE/DE/000661-B1)





Literature

- Andersen, R.; Linnell, J.; Hustad, H.; and Brainerd, S. (2003):** Large predators and human communities in Norway. A guide to coexistence for the 21st century. Trondheim, Norway: NORwegian Institute for Nature Research.
- Anthony, Brandon P. and Tarr, Katalin (2019):** The wolves are back! local attitudes towards the recently re-populated grey wolf and wolf management in Bukk National Park, Hungary. *Acta Zoologica Academiae Scientiarum Hungaricae* 65(2), pp. 195–214, DOI: [10.17109/AZH.65.2.195.2019](https://doi.org/10.17109/AZH.65.2.195.2019)
- Atkinson, Rowland and Flint, John (2004):** Snowball sampling. In: Lewis-Beck, M.S., Bryman, A. and Liao, T.F. (eds.) *The Encyclopaedia of Social Science Research Methods*. Sage. ISBN 9780761923633
- Baumeister, Christoph; Gerstenberg, Tina; Plieniger, Tobias; Schraml, Ulrich (2022):** Geography of disservices in urban forests: public participation mapping for closing the loop, *Ecosystems and People*, 18:1, 44-63, DOI: [10.1080/26395916.2021.2021289](https://doi.org/10.1080/26395916.2021.2021289)
- Blok, Anton (1980):** Anthropologische Perspektiven. Einführung, Kritik und Plädoyer. ISBN 13: 9783608930405
- blue! 2022:** LIFE-EuroLargeCarnivore Final Monitoring Report 2017-2022. [DELIV50_MILE26.pdf](#)
- Boitani, L., F. Alvarez, O. Anders, H. Andren, E. Avanzinelli, V. Balys, J. C. Blanco, U. Breitenmoser, G. Chapron, et al. (2015):** Key actions for Large Carnivore populations in Europe. Institute of Applied Ecology (Rome, Italy). Report to DG Environment, European Commission, Bruxelles. Contract no. 07.0307/2013/654446/SER/B3
- Bruskotter, Jeremy T., Vucetich, John A., Gilbert, Sophie L., Carter, Neil H., George, Kelly A. (2021):** Tragic trade-offs accompany carnivore coexistence in the modern world. *Conservation Letters* 2021; e12839 <https://doi.org/10.1111/conl.12841>
- Dillman, D. A.; Smyth, J. D. and Christian, L. M. (2014):** Internet, Phone, Mail and Mixed-Mode Surveys. *The Tailored Design Method*. Hoboken, NJ; Wiley, 509
- Elands, Birgit H.M. and Wiersum, K. Freerk (2003):** Forestry and rural development in Europe. Research results and policy implications of a comparative European study. EU/FAIR research project 'Multifor.RD': Multifunctional Forestry as a means to Rural Development (FAIR6-CT98-4223). Forest and Nature Conservation Policy Group Wageningen University, the Netherlands.
- Eklund, A.; López-Bao, J.; Tourani, M.; Chapron, G.; Frank, J. (2017):** Limited evidence on the effectiveness of interventions to reduce livestock predation by large carnivores. *Scientific Reports* 7(1):1-9.



- Elmauer Institute (2018):** Facilitators Notebook - LIFE EuroLargeCarnivores Project Communication and Collaboration Training for Facilitators, 22. - 26. January 2019 [DELIV15 PV1 Consensus Training Material.pdf](#)
- Ericsson, G., and Heberlein, T. A. (2003):** Attitudes of hunters, locals and the general public in Sweden now that the wolves are back. *Biol. Conserv.* 111, 149-159. doi: 10.1016/S0006-3207(02)00258-6
- Ericsson, Göran; Bostedt, Göran; Kindberg, Jonas (2008):** Wolves as a Symbol of People's Willingness to Pay for Large Carnivore Conservation. *Society and Natural Resources*, 21:294–309; DOI: 10.1080/08941920701861266
- Ericsson, G., Sandström, C., & Bostedt, G. (2006):** The problem of spatial scale when studying the human dimensions of a natural resource conflict: Humans and wolves in Sweden. *International Journal of Biodiversity Science & Management*, 2(4), 343–349. <https://doi.org/10.1080/17451590609618155>
- Fuhse, Jan A. (2018):** Soziale Netzwerke. Konzepte und Forschungsmethoden. Konstanz.
- Ulrich, Anne/Forstliche Versuchs- und Forschungsanstalt Baden-Württemberg (FVA) (2020):** Evaluation des Waldbautrainings Baden-Württemberg, Grundlage für eine zielgerichtete Weiterentwicklung, Evaluationsbericht 11/2020, [*Evaluation of staff training concerning the regulations on forest stand developments types in Baden-Wuerttemberg*], in German, 71 pages
- Franklin, A. (1999).** *Animals & modern cultures – A sociology of human-animal relations in modernity.* SAGE.
- Goffman, Erving 1963:** *Behavior in Public Places. Notes on the Social Organization of Gatherings* (1963), as discussed by Joller, Stefan (2012) in <https://www.rkm-journal.de/archives/9393>
- Grossmann, Carol; Erretkamps, Johannes; Ortseifen, Dominik; Van der Lei, Pieter; Weinandi, Kaja (2019):** EuroLargeCarnivores A2 Final Report; publicly accessible [EuroLargeCarnivores Final Report #A2 revised 20190404 copy with new links.pdf](#)
- Grossmann, Carol May; Patkó, László; Ortseifen, Dominik; Kimmig, Eva; Cattoen, Eva-Maria; Schraml, Ulrich (2020):** Human-Large Carnivore Co-existence in Europe - A Comparative Stakeholder Network Analysis. *Front. Ecol. Evol.* 8:266. doi: 10.3389/fevo.2020.00266
- Holton, E.F. III; Bates, R.A.; and Ruona, W.E.A. 2000:** Development and validation of a generalized learning transfer system inventory. *Human Resource Development Quarterly* 11, no. 4: 333–60:
- Houston, Melanie J.; Bruskotter, Jeremy, T.; Fan, David (2010):** Attitudes Toward Wolves in the United States and Canada: A Content Analysis of the Print News Media, 1999–2008. *Human Dimensions of Wildlife*, 15:389–403, 2010; ISSN: 1087-1209 print / 1533-158X online, DOI: 10.1080/10871209.2010.507563
- Hunziker, Marcel; Hoffmann, Christian W. and Wild-Eck, Stephan (2001):** Die Akzeptanz von Wolf, Luchs und “Stadtfuchs” - Ergebnisse einer gesamtschweizerisch-repräsentativen Umfrage. *Forest Snow and Landscape Research*, 76(1/2), 301-326.





- Jacobsen, Kim S.; Linnell, John D. C. (2016):** Perceptions of environmental justice and the conflict surrounding large carnivore management in Norway - Implications for conflict management. *BIOLOGICAL CONSERVATION* 203, pp. 197-206. DOI: 10.1016/j.biocon.2016.08.041
- Jürgens, Uta M.; Ehret, Sebastian (undated, ca. 2019):** Reviews and Recommendations – Two social scientists’ views on five works conducted within the EuroLargeCarnivores project (Internal Report)
- Jürgens, Uta M.; Hackett, Paul M.W. (2021):** Wolves, Crows, and Spiders: An eclectic Literature Review inspires a Model explaining Human’s similar Reactions to ecologically different Wildlife. *Frontiers in Environmental Science*, 9, 1-17. <https://doi.org/10.3389/fenvs.2021.593501>
- Jürgens, Uta M.; Grinko, Margarita; Szameitat, Annelie; Hieber, Lena; Fischbach, Robert; Hunziker, Marcel (submitted in 2/2022):** Managing Wolves is managing Narratives: Views of Wolves and Nature spawn People’s Proposals for navigating Human-Wolf Relations.
- Kirkpatrick, Donald L. (1960):** Techniques for evaluating training programs. *Journal of the American Society of Training Directors*, 4, 13–32.
- Kruse, Jan; Bethmann, Stephanie; Niermann, Debora; Schmieder Christian (eds.) (2012):** Qualitative Interviewforschung in und mit fremden Sprachen. Eine Einführung in Theorie und Praxis. Beltz Juventa, Weinheim. [*Qualitative Interview Research in and with foreign languages. An Introduction to Theory and Implementation*]
- Leeuwis, Cees; Aarts, Noelle (2011):** Rethinking communication in innovation processes: Creating space for change in complex systems. *The Journal of Agricultural Education and Extension* 17 (1):21-36.
- Linnell, John D. C. (2013):** From conflict to coexistence? Insights from multidisciplinary research into the relationships between people, large carnivores and institutions. IUCN/SSC Large Carnivore Initiative for Europe, N°070307/2012/629085/SER/B3, 55p
- Lüchtrath, Angela (2011):** Bewertung von Bestrebungen zum Schutz großer Beutegreifer Durch Betroffene Bevölkerungsgruppen am Beispiel des Luchses [Perception of Lynx Protection Measures by affected Stakeholder Groups]. Inaugural-Dissertation. Freiburg im Breisgau: Albert-Ludwigs-Universität. Available online at: <https://freidok.uni-freiburg.de/data/8347>
- Lüchtrath, A. (2017, unpublished).** #A2 Stakeholder Analysis Manual. Prepared for the Action #A2 “Stakeholder Analysis” within the EU LIFE project ‘Improving human coexistence with large carnivores in Europe through communication and transboundary cooperation’ (LIFE EuroLargeCarnivores). LIFE Environmental and Information, Technical Application Forms. LIFE16GIE/DE/000661.
- Lundmark, Carina et al. (2014):** Adaptive co-management: How social networks, deliberation and learning affect legitimacy in carnivore management. *Eur J Wildl Res* (2014) 60:637–644; DOI 10.1007/s10344-014-0827-y





- McKenzie-Mohr, Doug** (~1995): Fostering Sustainable Behavior - Community-based social marketing. "Online book", 77 p. accessible at https://www.uwsp.edu/cnr-ap/UWEXLakes/Documents/ecology/shoreland/marketing/fostering_sustainable_behavior_dmm.pdf
- McKenzie-Mohr, Doug (2000)**: Fostering Sustainable Behavior - Community-based social marketing. *Am Psychol.* 2000 May; 55(5):531-7
- Mondini, Maria (2011)**: Akzeptanz des Bären: Auf den Spuren der Einstellungen gegenüber den Braunbären in Graubünden und Tessin. Lizentiatsarbeit geleitet von Marcel Hunziker, WSL Birmensdorf und Heinz Gutscher, Universität Zürich.
- Naughton-Treves, Lisa; Grossberg, Rebecca; Treves, Adrian (2003)**: Paying for Tolerance: Rural Citizens' Attitudes toward Wolf Depredation and Compensation. *Conservation Biology*, 17(6), 1500-1511
- Nita, A., et al. 2016**: Collaboration Networks in Applied Conservation Projects across Europe, *PLoS ONE* 11, e0164503
- Olsen, Wendy (2004)**: Triangulation in social research: Qualitative and quantitative methods can really be mixed. *Development in Sociology* Vol. 20, 103-118
- Ottolini, I.; De Vries, J. R. and A. Pellis (2021)**: Living with Conflicts over Wolves. The Case of Redes Natural Park, *Society & Natural Resources*, 34:1, 82-98, doi: 10.1080/08941920.2020.1750746
- Peterson, M. N., Birkhead, J. L., Leong, K., Peterson, M. J., and Peterson, T. R. (2010)**. Rearticulating the myth of human-wildlife conflict. *Conserv. Lett.* 3, 74-82. doi: 10.1111/j.1755-263x.2010.00099.x
- phineo.org** (as of 21 Dec 2021): <https://www.social-impact-navigator.org/planning-impact/logic-model/components/>
- Poudyal, N. C.; Watkins, C.; Omkar, J. (2020)**: Economic contribution of wildlife management areas to local and state economies. *Human Dimensions Wildlife* 25, 291-295. doi: 10.1080/10871209.2020.1716114
- Redpath, Steve M.; Juliette Young, Anna Evelyn, William M. Adams, William J. Sutherland, Andrew Whitehouse, Arjun Amar, Robert A. Lambert, John D.C. Linnell, Allan Watt, and R.J. Gutierrez (2012)**: Understanding and managing conservation conflicts. *Trends in Ecology & Evolution*, Feb 2013 Vol 28 No.2 , ELSEVIER (p 101 - 109)
- Redpath, Steve M.; Bhatia S.; Young, J. (2015)**: Tilting at wildlife: Reconsidering human-wildlife conflict. *Oryx* 49(2):222-5
- Sevecke, Katharina and Martín-López, Berta (2018)**: Stakeholder characterization in a human-carnivore context. Presentation at Pathways Europe 2018 - Human Dimensions of Wildlife, Goslar, Germany
- Silva, J.P. et al. (2011)**: LIFE and European Mammals: Improving their conservation status. European Commission, Luxembourg 64 pp.





- Skogen, Ketil (2003):** Adapting adaptive management to a cultural understanding of land use conflicts. *Society & Natural Resources* 16(5):435-450
- Skogen, Ketil and Krangle, Olve (2020):** The Political Dimensions of Illegal Wolf hunting: Anti-Elitism, Lack of Trust in Institutions and Acceptance of Illegal Wolf Killing among Norwegians. *Sociologia Ruralis*, 60(3), 551-573. <https://doi.org/10.1111/soru.12309>
- Navarro, Alberto; Köhncke, Arnulf; Oliveria, Teresa; Krofel, Miha; López-Bao, José Vicente (submitted 01/2022):** European conservation funding gaps: Large Carnivores and the EU LIFE programme
- World Wide Fund For Nature Germany et al. 2017:** LIFE16 GIE/DE/000661. LIFE Environmental Governance and Information TECHNICAL APPLICATION FORMS. Improving human coexistence with large carnivores in Europe through communication and transboundary cooperation, Project acronym: LIFE EUROLARGE CARNIVORES. Part B - technical summary and overall context of the project
- Von Essen, Erica; Allen, Michael (2020):** ‘Not the Wolf Itself’: Distinguishing Hunters’ Criticisms of Wolves from Procedures for Making Wolf Management Decisions. *Ethics, Policy & Environment* 2020, VOL. 23, No. 1, 97–113 <https://doi.org/10.1080/21550085.2020.1746009>





ANNEX

ANNEX: Reflection Sheet - Guiding questions

<https://drive.google.com/file/d/1tPnk6NFEqbIjOIOPABIG8YRh1640jG2z/view>

ANNEX: Large Carnivores in Europe 2021 - English Master Questionnaire

<https://drive.google.com/file/d/1CAKI5nXUravokewi5ZHDL3ebVI7ISJTx/view>

