

Report on the outcomes of a Virtual Mobility

**CA20101 - Plastics monitoring detection Remediation recovery
(PRIORITY)**

**Fostering Diversity and Inclusion through a Structured Mentor-
Mentee Program in the CA20101 - PRIORITY Network**

01/03/2025 to 30/09/2025

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INTRODUCTION

The EmpowerMENTOR program was developed within the framework of COST Action CA20101 – *Plastics monitoRIng detectiOn RemediaTion recoverY (PRIORITY)*, a science and technology network dedicated to advancing strategies to tackle the global challenges of micro- and nanoplastics in the environment. In addition to its core scientific mission, the Action places strong emphasis on diversity, inclusion, and capacity building as essential dimensions for fostering innovation and strengthening research collaboration.

Mentorship has long been recognized as a powerful tool for supporting career development, facilitating knowledge transfer, and creating meaningful professional relationships. In particular, structured mentorship programs can bridge gaps between early-career and senior researchers, promote gender balance, and encourage participation from researchers based in Inclusiveness Target Countries (ITC). By addressing these dimensions, the program contributes directly to COST’s overarching goals of equity, excellence, and inclusivity in research.

Against this background, the EmpowerMENTOR initiative was designed to provide a structured mentorship journey involving 23 mentor–mentee pairs across different countries, disciplines, and career stages. Through virtual meetings, shared resources, and guided discussions, the program aimed to enhance academic skills, foster intercultural exchange, and cultivate a collaborative and supportive research environment. This report presents the structure of the program, its objectives, and the outcomes achieved, highlighting both successes and areas for improvement that can inform future editions of mentorship initiatives within COST networks.

OBJECTIVES

The EmpowerMENTOR program was designed with a set of clear and interconnected objectives, aligned with the broader mission of COST Action CA20101 – PRIORITY and COST’s emphasis on inclusivity, knowledge exchange, and capacity building. The objectives reflect both the **strategic priorities of the network** and the **practical needs of its members**.

A central aim of the program was to foster an inclusive research environment by addressing three core dimensions of diversity:

- **Gender balance:** ensuring equal opportunities for women and men to participate both as mentors and mentees.
- **Geographic inclusiveness:** encouraging participation from researchers in Inclusiveness Target Countries (ITC) alongside non-ITC countries, thereby bridging regional disparities in access to mentoring opportunities.
- **Career stage:** creating professional bridges between early-career researchers and more experienced academics to reduce structural gaps and inequalities in professional development.

The program sought to provide mentees with personalized guidance to navigate the complexities of academia and research careers. This included:

- Developing academic and technical skills (e.g., scientific writing, project design, experimental methods).
- Offering career advice, from PhD progression to academic vs. industry pathways.
- Building confidence and resilience in addressing professional challenges.

Through one-to-one mentoring and collective discussions, the initiative aimed to enhance collaboration across disciplines, cultures, and research contexts. By fostering direct relationships, EmpowerMENTOR provided a platform for the exchange of knowledge, resources, and experiences, thus expanding the collective capacity of the PRIORITY network.

By documenting lessons learned, good practices, and participant feedback, the program also aimed to contribute to COST’s long-term objectives. EmpowerMENTOR was designed not only as a one-off initiative but also as a **replicable model** that can inform similar programs across other COST Actions, reinforcing COST’s role as a driver of inclusive research collaboration in Europe.

PROGRAM DESIGN AND IMPLEMENTATION

The EmpowerMENTOR initiative was conceived as a structured mentoring program under the framework of COST Action CA20101 – PRIORITY, aiming to support diversity, inclusion, and professional growth within the network. The program design combined careful planning, participant mapping, and the use of dedicated tools to ensure consistency and effectiveness across all stages.

The program included three main phases:

Kick-off Meeting (05/06/2025): The program commenced with an online meeting that introduced the mentors and mentees, outlined the objectives of the initiative, and provided guidance on expectations, roles, and available tools. This meeting also served as an opportunity to establish initial connections and set the tone for collaboration.

Three Mentoring Sessions (June–July 2025): Each mentor–mentee pair engaged in three individual virtual meetings. These were scheduled flexibly, allowing participants to adapt the frequency and duration according to their availability. The sessions covered a range of topics including academic development, career planning, grant writing, and technical training, as suggested in the discussion guide.

Closing Meeting (27/07/2025): A final collective session was held to reflect on the mentoring journey, share personal experiences, and collect best practices. This meeting provided valuable input for shaping recommendations for future editions.

A central element of the program design was the careful **matching of mentors and mentees**, as the quality of these pairings directly determined the effectiveness of the mentoring experience. The matching process was not random, but guided by three complementary sets of criteria, designed to balance academic relevance with the program’s inclusivity goals.

Research field: The first criterion focused on ensuring an adequate alignment between the academic or technical expertise of the mentor and the research interests of the mentee. This was particularly important in the context of PRIORITY, where participants came from diverse disciplines, including environmental science, toxicology, engineering, and the social sciences. By considering thematic overlaps, the program aimed to maximize the added value of the exchanges, allowing mentors to provide targeted scientific guidance and mentees to situate their work within broader disciplinary conversations.

Academic level: The second criterion concerned the professional stage of participants. Mentors were generally senior or mid-career researchers, while mentees were predominantly doctoral candidates or early-career postdoctoral fellows. Pairings were designed to ensure that mentees’ developmental needs, such as navigating PhD requirements, publishing, or applying for research funding, were met with mentors’ corresponding experience in supervising students, leading projects, and building academic careers. This approach strengthened the relevance of the advice offered and facilitated a more effective transfer of tacit knowledge.

Diversity dimensions: The program also explicitly incorporated diversity considerations into the matching process. This involved striving for balance across **gender**, to encourage equal representation and role modeling; **geography**, by fostering exchanges between Inclusiveness Target Countries (ITC) and non-ITC countries; and **seniority**, by recognizing that different professional perspectives enrich the mentoring dialogue. These dimensions were not only symbolic but instrumental in ensuring that EmpowerMENTOR delivered on its core mission of inclusivity. Pairings, therefore, became opportunities for cross-cultural exchange, intercultural learning, and the breaking down of structural barriers to participation in international research networks.

Taken together, these three criteria ensured that the 23 mentor–mentee pairs were not only technically well-matched, but also diverse and representative of the COST Action community. The deliberate balancing of expertise, experience, and diversity created the conditions for a mentorship process that was both academically meaningful and socially transformative, reflecting COST’s vision of a collaborative and inclusive European research ecosystem.

The program was implemented and coordinated by Chiara Leggerini (Virtual Mobility Grantee), in her capacity as a member of the Diversity, Equity and Inclusion (DEI) group of COST Action PRIORITY, under the leadership of the Equality Manager (Professor Mariasole Bannò) and the Equality Advisor (Doc Camilla Federici). Their role was pivotal in ensuring that EmpowerMENTOR was not only implemented smoothly but also remained consistent with the Action’s broader mission of fostering inclusivity, representation, and equitable access to opportunities.

Mapping participants and managing the matching process: One of the group’s primary responsibilities was to oversee the process of identifying and mapping mentors and mentees. This involved collecting detailed information on participants’ research fields, academic levels, and diversity-related dimensions (gender, ITC/non-ITC affiliation, seniority). The DEI group applied this information to design mentor–mentee pairs that balanced academic relevance with diversity and inclusivity criteria. This task required careful coordination, as it was essential to ensure meaningful professional alignments while promoting cross-cultural and interdisciplinary exchange.

Providing mentoring tools and guidelines: The DEI group also developed and distributed a set of structured tools to support participants. These included a guide with suggested topics for discussion, a framework of good practices in mentorship, and the evaluation form. The purpose of these tools was to ensure that all pairs had a common reference point, regardless of their background or experience with mentoring. In doing so, the DEI group provided a coherent framework while leaving space for flexibility and personalization in each mentor–mentee relationship.

Monitoring progress through informal check-ins and evaluation surveys: To maintain momentum and ensure accountability, the DEI group conducted regular monitoring throughout the program. This included informal check-ins with participants to identify emerging needs, clarify expectations, and provide additional support when necessary. At the end of the program, the DEI group also coordinated the administration of the evaluation survey, which collected both quantitative

and qualitative feedback. This feedback loop was fundamental for assessing program effectiveness and identifying areas for improvement in future editions.

Facilitating communication between mentors and mentees: Finally, the DEI group played a bridging role, ensuring that communication channels remained open and transparent. They provided ongoing updates, responded to participants' queries, and encouraged the sharing of resources across the network. In this way, the DEI group not only managed the logistics of the program, but also fostered a sense of belonging and trust among participants, a key factor for the success of mentoring relationships in a virtual, multicultural setting.

Through these responsibilities, the DEI group functioned as both **organizers and enablers**, striking a balance between structure and flexibility. Their coordination guaranteed that EmpowerMENTOR was aligned with COST Action objectives, while also adapting dynamically to participants' feedback and needs. This dual role contributed significantly to the success and inclusivity of the initiative, making it a replicable model for other COST Actions.

To ensure effective mentoring relationships, the program offered a set of dedicated tools that provided structure, consistency, and opportunities for reflection across all mentor–mentee pairs. These tools were not intended as rigid frameworks, but as flexible resources that could be adapted to the specific needs and dynamics of each pair. By standardizing some elements of the process while leaving room for personalization, they helped create a balance between guidance and autonomy.

Tool 1 – Suggested Topics for Discussion

This offered a structured list of themes to support and inspire conversations during mentoring sessions. It included both professional and personal development dimensions:

- *Career development strategies:* setting long-term goals, building an academic trajectory, or exploring opportunities beyond academia.
- *Research planning and publications:* designing projects, managing timelines, and strengthening publication strategies.
- *Funding and grant writing:* identifying relevant calls, developing competitive proposals, and managing budgets.
- *Networking and collaborations:* building international contacts, joining consortia, and engaging in interdisciplinary projects.
- *Interdisciplinarity and soft skills:* enhancing teamwork, intercultural competencies, and adaptability.
- *Work–life balance and self-advocacy:* addressing challenges such as time management, setting boundaries, and negotiating academic responsibilities.

The list acted as a **conversation catalyst**: mentees could select topics according to their most urgent needs, while mentors could propose additional areas based on their expertise. This ensured that mentoring conversations remained purposeful and relevant.

Tool 2 – Good Practices in Mentorship

The second resource focused on **how** to conduct effective mentoring, emphasizing the importance of relational quality alongside technical guidance. It included principles such as:

- *Respectful communication*: creating a safe and inclusive space for open dialogue.
- *Active listening*: giving full attention to the mentee's concerns and avoiding prescriptive approaches.
- *Constructive feedback*: offering encouragement while addressing areas for improvement.
- *Celebrating small wins*: acknowledging progress to sustain motivation and confidence.
- *Documenting takeaways*: encouraging pairs to keep track of key insights, action points, and follow-up tasks.

By promoting these practices, the tool encouraged mentors to act not just as advisors but also as **partners in growth**, and helped mentees to take ownership of their development.

Tool 3 – Evaluation Form

The third tool was designed to capture the **outcomes and perceptions** of both mentors and mentees. It combined closed-ended questions (to assess satisfaction levels and program effectiveness) with open-ended sections (to collect reflections, success stories, and suggestions). The evaluation form served three purposes:

1. **Accountability** – ensuring that the program delivered value to participants.
2. **Learning** – identifying best practices and areas that worked particularly well.
3. **Improvement** – gathering actionable feedback to refine the design of future mentoring initiatives.

Beyond evaluation, this tool also served as a moment of **self-reflection** for participants, encouraging them to reflect on what they had learned and how they had grown during the mentoring journey.

In combination, these three tools provided both a **scaffold and a mirror**: they scaffolded the mentoring process by giving it structure, and they mirrored participants' experiences by documenting their growth and insights. This dual function made them essential components of the EmpowerMENTOR program, ensuring coherence across the network while respecting the uniqueness of each mentor–mentee relationship.

OUTPUTS AND RESULTS

Figure 1 shows the gender distribution of participants in the EmpowerMENTOR program, distinguishing between mentors and mentees.

Among **the mentors**, there was a balanced representation, with 12 women and 12 men participating, ensuring equal gender representation in guiding roles. This parity reflects the program's commitment to providing mentees with diverse role models and perspectives.

In contrast, the **mentee group** displayed a substantial prevalence of women, with 18 women mentees compared to only 4 men mentees. This imbalance may indicate a greater interest or need for mentoring among early-career women researchers, possibly linked to persisting structural barriers in academia and research careers. It also highlights the importance of programs like EmpowerMENTOR in addressing gender inequalities by offering tailored support to underrepresented groups at critical career stages.

Overall, the figure illustrates how the program successfully achieved **gender balance among mentors**, while also responding to the **increased demand for mentorship among women**. This dynamic highlights the program's inclusivity goals and its significance in promoting equitable participation in international research networks.

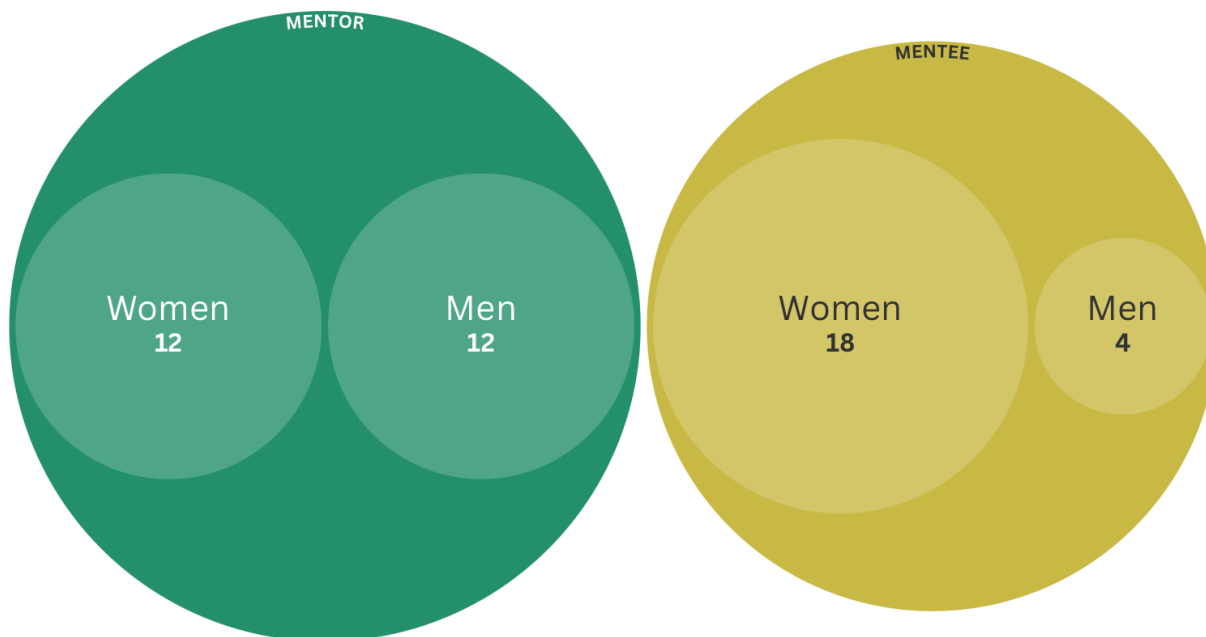


Figure 1 – Number of participants for gender

Figure 2 illustrates the age distribution of participants, distinguishing between mentors and mentees. Among **mentors**, the largest group was in the 41–54 age range (12 participants), followed by those aged 55 and above (8 participants), with a smaller representation in the 35–40 age group (4 participants). This distribution reflects the program’s intent to engage experienced researchers as mentors, bringing both mid-career and senior academic perspectives to the initiative. The strong representation of mentors above 40 indicates a solid base of professional experience and leadership within the pool.

In contrast, **mentees** were concentrated in younger age groups, with the majority in the 35–40 range (11 participants) and 25–34 range (10 participants). Only two mentees were above 40 (one in the 41–54 range and one 55+). This confirms that the program successfully targeted early-career researchers, providing them with opportunities for guidance at critical stages of their career development.

Overall, the figure highlights the **intergenerational nature of the mentoring process**, with senior and mid-career researchers acting as mentors and younger researchers engaging as mentees. This age structure not only ensured the transfer of experience and knowledge but also fostered cross-

generational dialogue, reinforcing EmpowerMENTOR’s mission of building bridges across career stages within the COST Action PRIORITY network.

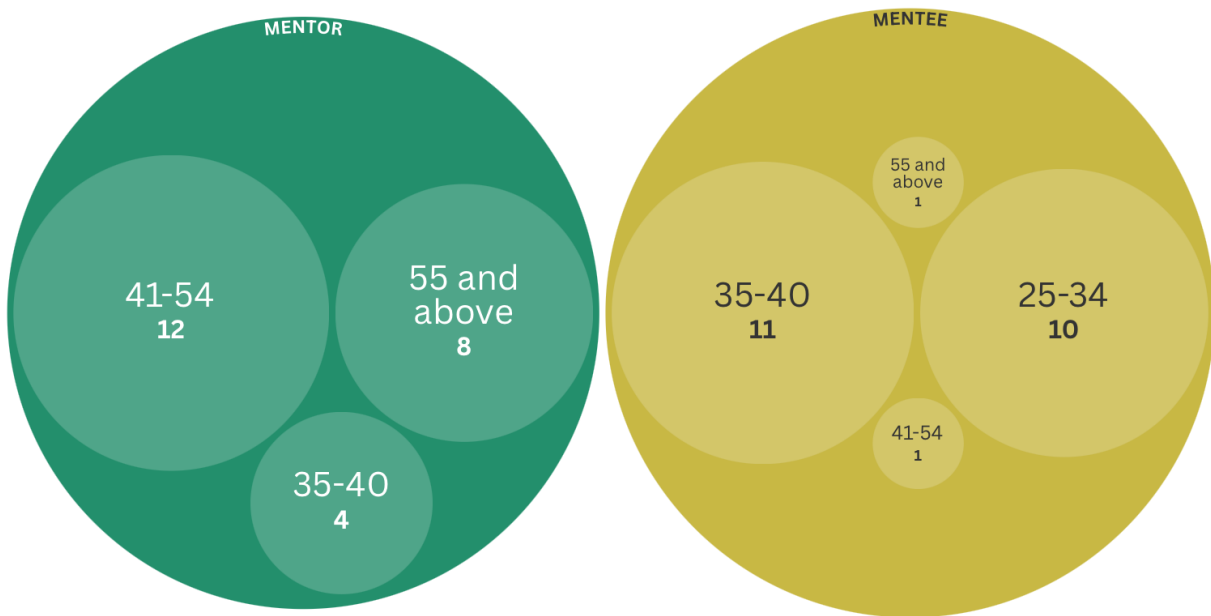


Figure 2 – Number of participants for age

Figure 3 shows the distribution of participants according to their country of origin, distinguishing between Inclusiveness Target Countries (ITC) and non-ITC countries.

Among **mentors**, the majority (18 participants) came from **ITC countries**, while 6 represented non-ITC countries. Similarly, within the **mentee group**, 17 participants were based in ITC countries, compared to 6 from non-ITC countries.

This distribution demonstrates that the program successfully reached and engaged researchers from ITC countries, which are a priority for COST Actions. Ensuring their participation was central to EmpowerMENTOR’s inclusivity objectives, as ITC researchers often face greater barriers to accessing international networks and mentoring opportunities. The balanced presence of both ITC and non-ITC participants also fostered a dynamic of cross-regional exchange, allowing knowledge and perspectives to flow across different academic and socio-economic contexts.

Overall, Figure 3 confirms that **the program aligned with COST’s mission to reduce disparities in research participation** by providing significant mentoring opportunities to ITC researchers while maintaining diversity through the involvement of non-ITC partners. This inclusive representation

enhanced the relevance and impact of EmpowerMENTOR, making it a model for equitable participation in international mentoring initiatives.

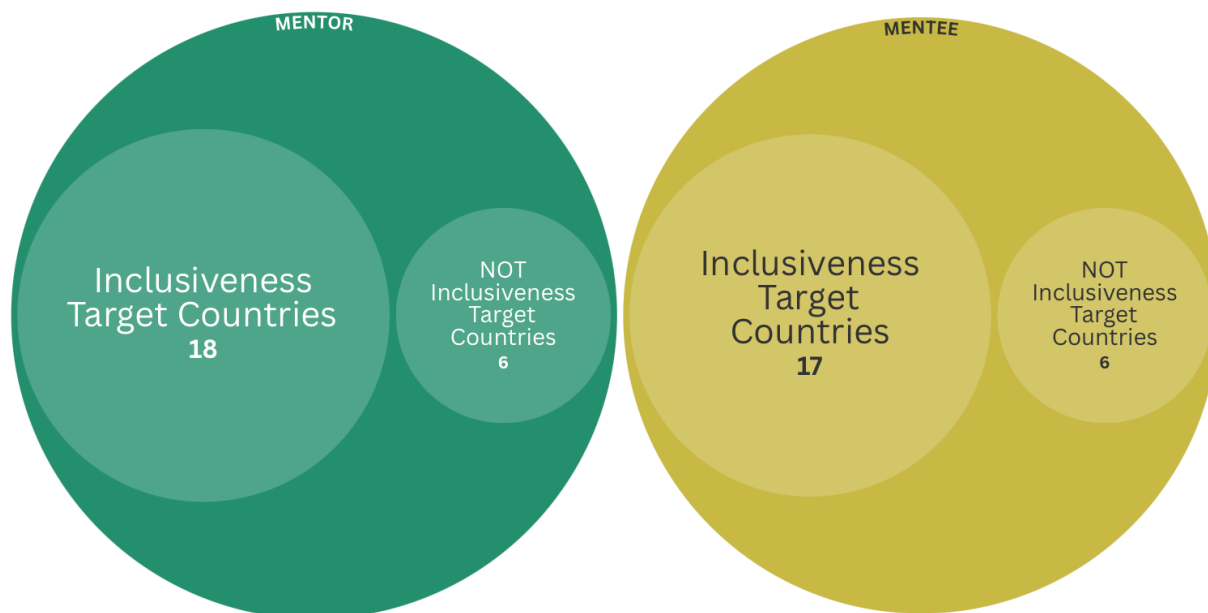


Figure 3 – Number of participants for country

A total of 28 participants completed the feedback questionnaire (**APPENDIX 1**), including 15 mentees. This response rate provided a solid basis for assessing the program's effectiveness, capturing both individual experiences and collective insights.

The responses reveal an overall **high level of satisfaction** among both mentors and mentees, though with some constructive suggestions for improvement. Most mentors described the experience as *very positive, rewarding, or important*. They particularly valued the opportunity to connect with motivated early-career researchers and to exchange knowledge openly and collaboratively. Several mentors emphasized the **mutual nature of the learning process**, noting that they also gained exposure to new techniques, perspectives, and intercultural insights. Several challenges were highlighted, including **limited time** for meetings, postponed or missed sessions, and a desire for **more structured guidance and resources** to better support mentees. Despite these constraints, mentors reported feeling that they had made meaningful contributions to their mentees' development.

Mentees overwhelmingly described the program as *enriching, empowering, and motivating*. Many appreciated having access to **practical guidance** for their research projects, including support for theses, research planning, and methodological issues (e.g., microplastic detection and analysis). They emphasised the value of **open and constructive discussions**, often noting that mentors treated them as *equal partners* rather than in a hierarchical manner. This contributed to an inclusive and supportive environment. Key benefits included improved **clarity and confidence** in research approaches, a

greater understanding of academic career paths, and encouragement to pursue professional goals. The main area of improvement identified was the **limited time available**, with several mentees expressing the wish for longer or more frequent sessions.

Mentors reported that the program was not only an opportunity to provide guidance, but also a **two-way learning experience**. Key points included: **Knowledge exchange:** Mentors learned about *new techniques* in micro/nanoplastic labeling, genotoxicity methods, and computational chemistry approaches applied to experimental design. **Intercultural and intergenerational perspectives:** Several highlighted how working with mentees broadened their understanding of different academic contexts, research systems (e.g., PhD processes abroad), and cultural backgrounds. **Reflections on mentoring itself:** Many recognized that mentees valued not only academic supervision but also *emotional support, career advice, and encouragement*. This reinforced the importance of personalized and empathetic mentoring. **Personal growth:** Some mentors realized how sharing their own career struggles and milestones could *inspire and motivate younger researchers*, reframing challenges as opportunities for growth. Representative quotes include: *“I learned that students value not just academic guidance, but also supportive supervision and career advice. Personalised mentoring seems to make a real difference.”* *“I have learned about my mentee’s fields of research and perspective, which have broadened my own understanding... the process also reminded me of the value of active listening and how mentoring is a two-way learning experience.”*

Mentees described the program as highly **enriching and empowering**, offering practical, academic, and personal development. Main lessons learned were: **Technical expertise:** Hands-on experience in advanced methods such as Raman spectroscopy, and microplastic characterization; exposure to computational chemistry, machine learning, and reproducibility practices. **Academic and career development:** Better understanding of the differences between academic and industrial careers, clearer awareness of post-PhD career paths, and improved ability to structure experiments and communicate research effectively. **Soft skills:** Enhanced communication in English, increased confidence, and more intentionality in academic decision-making. **Collaboration and networking:** Insight into how research consortia are built, exposure to diverse university structures, and new perspectives on international cooperation. Illustrative quotes include: *“Throughout the mentoring journey, I learned how to structure complex experimental work and how to communicate my research ideas better. The feedback helped me develop a more targeted and realistic approach.”* *“During my mentorship, I gained in-depth, hands-on expertise in characterizing microplastics using FTIR and Raman spectroscopy—two pivotal techniques in environmental analysis.”* *“I learned how to be more*

intentional with my academic and career decisions. I also realized the importance of mentorship, reflection, and staying open to feedback and growth.”

The feedback highlights a rich variety of ways in which support was exchanged between mentors and mentees, combining **technical guidance, career advice, and personal encouragement**.

On the **academic and technical side**, mentors offered concrete assistance with research design, data analysis, and methodological challenges. Examples included guidance on sample preparation, genotoxicity tests, and computational chemistry, as well as specialized training in advanced techniques such as Raman spectroscopy. Several mentees reported that this expertise directly enhanced the quality and reliability of their ongoing projects.

On the **career development side**, mentors shared advice on how to apply for fellowships and grants (both national and international), manage research laboratories, and navigate the post-PhD career landscape. Many also provided insights into academic vs. industrial career paths, broadening mentees’ awareness of professional opportunities.

On the **relational and personal side**, the support extended beyond technical knowledge. Mentors frequently emphasized *active listening*, encouragement, and confidence-building, while mentees appreciated being treated as equal partners in discussions. This dynamic fostered trust, motivation, and mutual respect. In some cases, the mentorship was described as a **two-way learning process**, where both parties gained fresh perspectives and broadened their understanding of research and career challenges.

As one mentee put it: *“My mentor helped me see things from a broader perspective, gave practical advice, and encouraged me to be more confident in my abilities.”* Similarly, a mentor reflected: *“Though this may differ from traditional mentorship, I aimed to foster confidence through active listening and mutual learning.”*

Overall, the evidence shows that EmpowerMENTOR provided **multi-dimensional support**: combining practical skills, strategic career guidance, and emotional encouragement. This blend of technical rigor and human connection was central to the program’s impact, enabling participants not only to advance their research but also to grow personally and professionally.

The feedback reveals that participants greatly appreciated the **diverse opportunities and perspectives** offered by the mentoring journey. Both mentors and mentees emphasized the value of connecting across different countries, disciplines, and career stages, which broadened their scientific and professional outlooks. For many, the program provided a unique platform to exchange knowledge on microplastic research and related fields, as well as to discuss broader career challenges and opportunities.

Mentees highlighted the *personalized and supportive nature* of the mentorship. They valued open and respectful communication, constructive feedback on their research design, and the chance to explore new technical skills. Several appreciated hands-on opportunities, such as participation in training schools (e.g., Raman spectroscopy), which translated theoretical knowledge into practical

learning. Importantly, they also felt encouraged to share their ideas freely, receiving feedback that motivated them to pursue their goals with confidence.

Mentors, in turn, appreciated the chance to contribute to the growth of younger researchers, while also finding the process **mutually enriching**. Many valued the openness and curiosity of their mentees, noting that the dialogue reminded them of their own early career challenges and inspired reflection on their professional paths. They particularly enjoyed being able to pass on advice, share experiences, and witness the mentees' enthusiasm. Some also stressed the **flexibility and authenticity** of the informal conversations, which fostered genuine connections and made the process more meaningful than a rigid mentoring framework might have allowed.

Overall, participants appreciated EmpowerMENTOR as a **mutual learning opportunity**. Mentees gained scientific skills, career guidance, and motivation, while mentors rediscovered the impact of sharing their experiences and supporting the next generation. As one participant summarized, what stood out most was the combination of *“mutual learning, genuine connection, flexibility, and authenticity”*.

Although the overall evaluation of EmpowerMENTOR was very positive, with several participants stating that *“the experience was perfect”* or that there was *“nothing to improve”*, the feedback also highlighted some helpful directions for refinement. A recurring theme concerned the **duration of the program**. Many respondents observed that three meetings concentrated within a short summer period felt too limited to establish a deeper relationship, particularly given that research schedules are often affected by conferences, workshops, and holidays. Some suggested an earlier start or a longer overall timeline, with meetings spaced more evenly to allow for reflection and follow-up. In contrast, others emphasized that mentorship should last longer to achieve significant outcomes.

Another dimension that emerged was the **need for greater structure and clearer guidance**. While the flexibility of the program was valued, several participants recommended setting more explicit milestones or checkpoints to help align expectations between mentors and mentees. A few suggested using predefined discussion themes or a structured framework that mentors could adapt according to their mentees' needs, ensuring that conversations remained focused without losing the informal and open character of the exchanges.

Participants also expressed a desire for **broader interaction opportunities**. Some would have appreciated the chance to meet with more than one mentor, thus gaining different perspectives on their work. In contrast, others highlighted the potential of a shared platform where all participants could exchange insights, questions, and resources between sessions. This type of community space was viewed as a means to extend the benefits of mentorship beyond the one-to-one relationship, thereby fostering a stronger collective identity within the network.

A further area of improvement concerned **continuity and follow-up**. Those who attended the Raman training school, for example, suggested adding additional troubleshooting or data-lab sessions afterwards, to consolidate the learning and apply it directly to their own research challenges. Others

proposed maintaining regular contact through email correspondence to keep the dialogue active between meetings.

Finally, several participants expressed the wish for a **face-to-face component**, ideally at the end of the program, to reinforce the relationships established online and to provide an opportunity for networking and celebration. Beyond these aspects, some respondents suggested exploring new research themes outside the core focus on microplastics, while others noted the importance of ensuring commitment from all mentees throughout the program.

Participants reported that the mentoring journey helped them achieve their goals in multiple and complementary ways. For **mentees**, the program offered opportunities to connect with experts and institutions in the field of microplastics, learn new techniques, and apply this knowledge to their own projects. Several highlighted how the mentorship enabled them to refine experimental design, structure interdisciplinary project ideas, and strengthen their scientific communication. Practical benefits included the integration of literature recommendations and methodological suggestions directly into laboratory work, which improved both the quality and efficiency of their research. In some cases, mentees identified clear objectives at the beginning of the program and revisited them throughout the sessions, which kept them on track and enhanced their confidence in technical and academic skills.

Mentors, in turn, achieved their goals by providing support and guidance tailored to the needs of early-career researchers. They emphasized the value of careful listening, asking the right questions, and assigning small tasks that helped mentees reflect on their career paths and research priorities. For many mentors, achieving goals was not limited to transmitting knowledge but also involved encouraging mentees to clarify their ambitions, make informed decisions, and take concrete steps toward professional development.

Not all participants reported complete success: a few noted difficulties due to limited time or scheduling constraints, which prevented them from fully implementing their plans. Others suggested that a more structured follow-up could have maximized the mentoring impact. Still, the majority of responses indicated that the program provided a **starting point, motivation, and practical guidance** to pursue both research and career goals.

Overall, goals were achieved through a combination of **focused discussions, tailored feedback, and mutual flexibility**. The open communication established between pairs allowed both mentors and mentees to share experiences and adapt sessions to evolving needs, confirming that

EmpowerMENTOR was an effective platform for aligning personal development with the broader objectives of the COST Action.

LESSONS LEARNED AND CHALLENGES

The implementation of EmpowerMENTOR offered a number of important lessons for both organizers and participants. Above all, the program confirmed that **structured mentorship is a powerful tool to foster diversity, inclusion, and professional growth**, particularly within international research networks such as COST. The experience highlighted that early-career researchers value not only technical guidance but also encouragement, emotional support, and opportunities to engage in open and constructive dialogue. Mentors, on their side, recognized the reciprocal nature of the process: far from being one-directional, mentorship created space for **mutual learning**, intercultural exchange, and self-reflection on their own academic journeys.

A key lesson is the **importance of combining flexibility with structure**. While participants appreciated the openness of the meetings and the freedom to adapt discussions to their needs, several emphasized the value of clearer frameworks. Setting milestones, providing suggested themes, or offering checkpoints at the beginning could strengthen alignment and ensure that the limited time available is used effectively.

Another lesson relates to **time and continuity**. Three mentoring sessions proved to be a good starting point, but both mentors and mentees agreed that more time would have allowed deeper exploration of topics, stronger relationship-building, and follow-up on suggestions. Extending the program's duration or spreading sessions over a longer period would improve the long-term impact and sustainability of outcomes.

The program also revealed the **potential of blended formats**. Participants expressed interest in complementing one-to-one meetings with group interactions, shared platforms for exchanging resources, and, where possible, in-person gatherings. Such additions could create stronger community bonds across the network and expand the benefits beyond individual pairs.

Challenges were primarily linked to **scheduling constraints and limited availability**, with some meetings postponed or cancelled due to participants' professional obligations. These issues underline the need for more flexible timelines and possibly digital tools to facilitate coordination. Additionally, while most pairs engaged effectively, a few cases showed limited interaction, suggesting that mechanisms to confirm commitment and maintain engagement should be reinforced.

In conclusion, the key lessons learned are that **mentorship thrives when it strikes a balance between structure and flexibility, technical guidance and emotional support, and individual learning and community building**. The main challenges remain the constraints of time and continuity, which should be addressed in future editions through longer timelines, more structured frameworks, and opportunities for broader interaction. By taking these insights into account, EmpowerMENTOR can serve not only as a successful pilot, but as a model for sustainable, inclusive, and impactful mentoring within COST Actions.

CONCLUSIONS AND FUTURE PERSPECTIVES

The EmpowerMENTOR initiative has demonstrated the **value and impact of structured mentorship** within the COST Action PRIORITY network. By creating meaningful connections between mentors and mentees across different countries, disciplines, and career stages, the program successfully fostered diversity, inclusion, and professional development. Both quantitative data and qualitative feedback confirm that participants found the experience enriching, motivating, and well-structured, with clear benefits in terms of technical skills, career guidance, confidence-building, and intercultural exchange.

The program also highlighted the **reciprocal nature of the mentoring process**. Mentees gained practical support and strategic insights to advance their research and career trajectories. At the same time, mentors benefited from fresh perspectives, exposure to new techniques, and the opportunity to reflect on their own professional journeys. This two-way learning dynamic reinforced the sense that mentorship is not only about transferring knowledge, but also about co-creating value within a supportive and inclusive environment.

At the same time, the initiative revealed **areas for growth**. Time constraints limited the depth of some interactions, and several participants expressed the desire for longer timelines, more straightforward guidelines, and more structured frameworks. Others emphasized the need for additional follow-up, broader opportunities for group interaction, and, ideally, a final face-to-face meeting to consolidate relationships. These suggestions highlight the importance of striking a balance between flexibility and structure, ensuring continuity, and expanding the mentoring format beyond the traditional one-to-one model.

Looking forward, EmpowerMENTOR can serve as a **replicable model for other COST Actions and international networks**. Future editions could extend the program's duration, integrate digital platforms for continuous exchange, and explore hybrid formats that combine virtual and in-person elements. Strengthening mechanisms to confirm commitment and maintain engagement will further enhance the program's sustainability. Moreover, expanding the pool of mentors and including diverse research themes beyond microplastics could widen the impact and attract an even broader community of participants.

In conclusion, EmpowerMENTOR has proven to be more than a pilot: it is a **transformative experience that aligns with COST's mission of inclusivity, collaboration, and capacity building**. By consolidating its achievements and addressing the challenges identified, the program has the potential to become a long-term pillar within the PRIORITY Action and a benchmark for mentorship initiatives across Europe. Its future lies in continuing to bridge generations of researchers, cultivating diversity, and nurturing a culture of mutual learning and support that extends well beyond the boundaries of a single Action.

APPENDIX

APPENDIX 1

'EmpowerMENTOR by PRIORITY' Evaluation form

1- Name

2- Surname

3- Gender

- Woman
- Man
- Preferred not to say

4- Country

5- Geographical spread

6- Age Range

- Under 25
- 25-34
- 35-40
- 41-54
- 55 and above

7- What is your current academic or professional position?

- PhD student
- Postdoctoral researcher / Research fellow
- Assistant professor
- Associate professor
- Full professor
- other

8- Working Groups

- WG1 – Impacts and risks on human health and environment related to N/MPs
- WG2 – Monitoring and sampling Microplastics
- WG3 – Instrumentation, modelling, data evaluation, software, and analytical procedures
- WG4 – Nanoplastics
- WG5 – Remediation, recovery and development of sustainable alternative to plastic materials
- WG6 – Metrology and standardization
- WG7 – Develop new strategies to increase the synergies with society and education

9-Professional Role

- Mentor
- Mentee

QUESTIONS FOR MENTORS

- 10- How do you feel about your experience as a mentor?
- 11- What did you learn during the mentoring process?
- 12- How did you support the mentee?

QUESTIONS FOR MENTEE

- 13- How do you feel about your experience as a mentee?
- 14- What did you learn during the mentoring journey?
- 15- How did the mentor support you?

QUESTIONS FOR MENTORS AND MENTEE

- 16- What did you appreciate about this mentoring journey?
- 17- What would you like to see improved?
- 18- How did you achieve your goals?