
PRIORITY COST Action CA20101

Report on the Activities of the Working Groups (WGs)

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1. Introduction

The COST Action **CA20101 PRIORITY – Plastics monitoring detection remediation recovery: Development of solutions for society and environment** brings together more than 560 experts from over 53 countries. The Action aims to establish a multidisciplinary network to address the scientific, technical, and societal challenges posed by **micro- and nanoplastics (M/NPs)** in the environment.

Its activities are structured into **seven Working Groups (WGs)**, each focusing on a specific thematic area, ensuring complementarity and synergy across the network.

2. Working Group Activities

WG1 – Impacts and Risks on Human Health and Environment

WG1 investigates the **toxicological and ecological effects** of nano- and microplastics, including exposure routes, biological uptake, and risk assessment frameworks.

Recent activities include scientific meetings, collaborative studies, and preparation of joint publications.

For more details on WG1 activities see the dedicated [webpage](https://ca-priority.eu/structure/wg1-impacts-and-risks-on-human-health-and-environment-related-to-nmps/) <https://ca-priority.eu/structure/wg1-impacts-and-risks-on-human-health-and-environment-related-to-nmps/>

WG2 – Monitoring and Sampling of Microplastics

WG2 develops **harmonized monitoring and sampling protocols** for different environmental matrices (water, soil, air, and biota), supporting capacity building across Europe.

Activities include method comparison exercises, workshops, and technical guidelines.

For more details on WG2 activities see the dedicated [webpage](https://ca-priority.eu/structure/wg2-monitoring-and-sampling-microplastics/) <https://ca-priority.eu/structure/wg2-monitoring-and-sampling-microplastics/>

WG3 – Instrumentation, Modelling, Data Evaluation, and Analytical Procedures

WG3 focuses on **analytical tools and data interpretation**, promoting interoperability between laboratories and access to research infrastructures.

Recent work includes the collection of analytical best practices and development of data harmonization approaches.

For more details on WG3 activities see the dedicated [webpage](https://ca-priority.eu/structure/wg3-instrumentation-modelling-data-evaluation-software-and-analytical-procedures/) <https://ca-priority.eu/structure/wg3-instrumentation-modelling-data-evaluation-software-and-analytical-procedures/>

WG4 – Nanoplastics

WG4 explores analytical and methodological challenges in **detecting, quantifying, and characterizing nanoplastics**, integrating experience from different laboratories.

Activities include dedicated meetings, roadmap preparation, and inter-WG collaborations.

For more details on WG4 activities see the dedicated [webpage](https://ca-priority.eu/structure/wg4-nanoplastics/) <https://ca-priority.eu/structure/wg4-nanoplastics/>

WG5 – Recycling, Recovery, and Sustainable Alternatives

WG5 focuses on **remediation, recycling, and the development of sustainable alternatives** to plastic materials, linking scientific innovation to circular economy principles.

Recent outcomes include thematic meetings and the publication of an Open Letter summarizing WG5 discussions and roadmap.

For more details on WG5 activities see the dedicated [webpage](https://ca-priority.eu/structure/wg5-remediation-recovery-and-development-of-sustainable-alternative-to-plastic-materials/) <https://ca-priority.eu/structure/wg5-remediation-recovery-and-development-of-sustainable-alternative-to-plastic-materials/>

WG6 – Metrology and Standardization

WG6 promotes **measurement reliability and validation** through interlaboratory comparisons and reference materials.

Work includes coordination of comparison studies, standardization initiatives, and training events on metrology and chemometrics.

For more details on WG6 activities see the dedicated [webpage](https://ca-priority.eu/structure/wg6-metrology-and-standardization/) <https://ca-priority.eu/structure/wg6-metrology-and-standardization/>

WG7 – Synergy with Society and Education

WG7 enhances **science-society interaction**, encouraging researchers to engage in communication, citizen science, and educational initiatives.

Recent actions include outreach activities, collaborations with schools, and dissemination through media and public events.

For more details on WG7 activities see the dedicated [webpage](https://ca-priority.eu/structure/wg7-develop-new-strategies-to-increase-the-synergies-with-society-and-education/) <https://ca-priority.eu/structure/wg7-develop-new-strategies-to-increase-the-synergies-with-society-and-education/>

3. Establishment of Cross-Sectional Subgroups and WG Collaboration Coordination

To enhance interdisciplinarity and strengthen collaboration within the Action, cross-sectional subgroups were established within each WG. These subgroups enable members to focus on specific thematic or methodological priorities, facilitating more agile, multidisciplinary, and flexible activities. Examples include focused initiatives on polymer ageing and transformation, analytical standardization, data harmonization, and educational outreach.

A detailed overview of the active subgroups can be found on the dedicated webpages of each WG.

In addition to these internal structures, the Working Groups Collaboration Coordinator role was introduced to foster collaboration both across WGs and with external initiatives. This role supports the alignment of scientific objectives, promotes information exchange, and encourages networking with other European projects and international research programs. Through these activities, the Coordinator contributes to maximizing synergies, visibility, and the overall impact of the Action within the broader research landscape.

Together, these mechanisms have strengthened coherence within the network, ensuring that PRIORITY's scientific objectives are addressed in an integrated and outward-looking manner.

4. Conclusions

This report summarizes the main achievements and ongoing efforts within the seven Working Groups of the COST Action CA20101 – PRIORITY, highlighting their dynamic and interconnected structure. The creation of cross-sectional subgroups within WGs—visible on each WG's webpage—and the introduction of the WG Collaboration Coordinator, promoting both internal coordination and networking with external European initiatives, have enhanced flexibility, interdisciplinarity, and strategic alignment across the network. Collectively, these initiatives have contributed to building a cohesive, inclusive, and collaborative framework to advance the understanding and mitigation of micro- and nanoplastic pollution.

Annex

- **Figure 1.** Overview of PRIORITY Working Groups

