



Scientific Advice Mechanism Group of Chief Scientific Advisors

Biodegradability of plastics in the open environment

Scoping Workshop Outcome

(27 November 2019, Brussels)

WORKSHOP REPORT

The main objective of this workshop was to determine the most important aspects to be developed in the forthcoming Evidence Review Report. The experts participating were selected based on their knowledge of the field, representing both academia and the private sector. The discussions lead to the formulation of three main questions which can guide the work of the SAPEA expert Working Group, without prejudice to the results to be obtained and the conclusions. The questions (and related specific aspects) are summarised below.

Background questions to structure the Evidence review report provided by SAPEA

1. How to define biodegradable plastics?

Within the framework of this question, the following aspects should be addressed:

- Existing definitions and gaps - looking beyond polymers, including additives, nutrient release, etc.
- Testing standards and techniques which are used to define their properties, according to the receiving environment.
- Timescale for the biodegradation in open environment – What is an acceptable timeframe for biodegradation in relation to environmental impacts, including under less favourable environmental conditions?

2. What applications can be recommended for biodegradable plastics, compared to non-biodegradable plastics?

The following aspects must be taken into consideration:

- Applications could be looked at in relation to their effective collection. If 100% collection would be obtained, proper waste management will apply. If 0% collection would happen, biodegradability might be the best solution. What happens in between? Is there a tipping point between waste management and biodegradation? Can the relevant environmental conditions or criteria be determined?
- Benefits versus unwanted effects and unintended consequences of the use of biodegradable plastics compared to conventional.
- Different geographic and socio-economic contexts (developing countries, levels of waste management systems performance).
- Is there a specific case for agricultural plastics (e.g. mulches)?
- Applications where biodegradation should happen rapidly or after a long term.

3. Which behavioural aspects play a role? What and how to communicate about biodegradable plastics?

The following aspects must be included:

- The risks of incorrect disposal of biodegradable plastics e.g. contamination of waste streams, litter increase.
- Labelling/instructions to be used to orient the consumers: are these sufficient to avoid incorrect disposal? Other policy instruments / incentives?
- Context-specific factors (different behaviour, collecting systems etc.).

While answering these questions, the following scope needs to be considered:

- Focus only on plastics (substitution materials not to be considered)
- Include only biodegradable plastics in open environment (thus excluding composting in industrial facilities)

(Home composting is a secondary priority)

Expertise is needed in the following fields:

1. Chemistry - material sciences (polymers)
2. Micro-biology
3. Environmental impacts
4. Waste management
5. Social sciences: littering psychology, labelling, Consumer behaviour
6. Risk analysis (one expert)

Ideally experts should be able to provide expertise covering EU countries and beyond (developing countries - one expert).

LIST OF PARTICIPANTS AND OTHER ATTENDEES

Experts		
Richard	Thompson	Plymouth University
Michael Zwicky	Hauschild	Technical University of Denmark
Tanja	Narancic	University College Dublin, School of Biomolecular and Biomedical Science
Marteen	van der Zee	Wageningen University
Carlos	de Los Llanos	CITEO
Bruno	De Wilde	OWS
Michael	Sander	Environmental Chemistry, ETH Zurich

Other attendees

Rolf Heuer (GCSA)

Louise Edwards (SAPEA)

Jackie Whyte (SAPEA)

Johannes Klumpers (European Commission [EC] - Directorate General for Research & Innovation [DG RTD] Head of Unit 03 Chief Scientific Advisors – SAM, EGE [SAM Unit])

Blagovesta Cholova (EC-DG RTD –SAM Unit)

Annabelle Ascher (EC-RTD SAM Unit)

Werner Bosmans (EC - Directorate General for Environment [DG ENV])

Silvia Forni (EC-DG ENV)

Birgit Sokull-Klüttgen (Joint Research Centre [JRC], Ispra)

MEETING AGENDA

Discussion with Experts on:
Biodegradability of Plastics in the open environment

Wednesday, 27 November 2019 - 10:30 - 16:30

ORBN - 08/A149 (meeting) and 07/149 (coffee and lunch) – 8 Frere Orban Square,
Brussels

Overall objectives:

- To determine what issues call for science-based advice to be delivered on biodegradability of plastics in open environment;
- To scope the evidence review which would be needed to underpin such advice.

10:30 - 10:45	Welcome coffee - ORBN - 07/A149
10:45 - 11:50	I. <u>Welcome & Setting the Scene</u>
10:45 - 10:50	Opening remarks <i>Johannes Klumpers - Head of Unit -EC DG RTD - Chief Scientific Advisors</i>
10:50 - 11:00	Purpose of the meeting <i>Rolf-Dieter Heuer - Chair EC Group of Chief Scientific Advisors</i>
11:00 - 11:50	First round of general comments by experts <i>Five minutes for each expert</i> Presentation of individual interests/ activities/ competencies
11:50 - 13:00	II. <u>Scoping Discussion – Part 1</u> Second round of expert comments on: <ol style="list-style-type: none">1. The set of questions raised in the background document2. Prioritisation of questions, additions, reformulations3. Suggestions regarding subsequent focus
13:00 – 14:00	Lunch - ORBN - 07/A149
14:00 - 16:15	III. <u>Scoping Discussion – Part 2</u> Third round of expert comments
16:15 - 16:25	IV. <u>Next Steps</u>
16:25 - 16:30	V. <u>AOB</u>
16:30	END of the meeting