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BRIEFING SERIES

Biodegradable plastics: how do we engage with consumers and society?

INTRODUCTION

Public awareness and concern over plastic pollution, especially in open environments such as oceans, rivers and land, are at an all-time high. At the same time, the public is often uncertain and confused about what to do with plastic items after use - whether they can be reused, recycled or composted. Without proper information to guide the consumer, the increasing availability of products made from biodegradable plastics is likely to add to this confusion.

A panel of experts discussed these issues at a webinar on 21st May 2021, attended by an international audience of over 200 people from 37 countries. The webinar is part of a series of events drawing on the SAPEA Evidence Review Report *Biodegradability of plastics in the open environment* and the associated Scientific Opinion by the European Commission's Group of Chief Scientific Advisors.

You can also watch a recording of the webinar on SAPEA's YouTube channel.

Key points from the webinar discussion

Biodegradable plastics are not a solution to plastic pollution. They should only be considered for specific applications, where it is challenging to prevent materials from ending up in the open environment or to remove them after use. They also need to be part of a broader strategy, a 'waste hierarchy', that first aims at reducing, reusing, and recycling plastic materials.

Widespread use of biodegradable plastics could result in a number of unintended consequences. For example, a 'material rebound' effect could see the increased consumption of such products, if consumers believe they have a lower environmental impact. There could also be an increase in littering, if the products are believed to biodegrade in the open environment.

For effective attitude and behaviour change, key messages to the public need to be kept simple. Messages should prioritise reducing, reusing, and recycling of materials and not promote a 'linear' use of plastics. It is important not to confuse consumers who are already disposing of plastics in the right way.

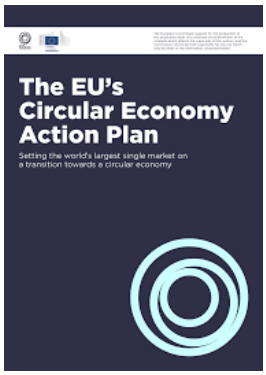
We need to be evidence-based in how we develop tools and methods to bring about behaviour change. There are many factors that affect consumer decision-making and multiple ways to diagnose the underlying psychology that affects consumer attitudes and decisions. Once we understand the decision process of consumers, we can then design a study to see which tools may work best.

Higher pricing can be a barrier to buying biodegradable products. Biodegradable products tend to be more expensive than their conventional counterparts. Higher prices are an important barrier for price-conscious consumers.

The focus should be on the whole system, not only the end-of-life destination of products. A 'circular' economy is key, where waste is minimised and products stay in use for as long as possible.

Labelling has to be consistent, organised and coherent. It can be difficult for consumers to discern between different types of plastics, so labelling has an essential role to play. However, there are multiple labelling and certification schemes, of which the consumer has to make sense. Labels have to be useful and consumers must be able to trust the information they provide. Labels should not only show that a product is biodegradable but also provide clear instructions about what should or should not be done with the product after use.

Labelling and certification on their own are insufficient to transition successfully to a circular economy. The onus should not just be on the consumer to make the right choices; it is the responsibility of producers and retailers to provide materials, products and packaging that fit a circular economy. Market-based policies, such as taxes and subsidies, and regulatory policies, such as bans on more harmful plastics, may also be needed.



The European Commission is developing a policy framework, as part of its *Circular Economy Action Plan*, which will include a focus on biodegradable plastics. Studies have been commissioned to help develop the policy framework and the input of behavioural science is important. Some of the areas that will be addressed by the framework include definitions of key terms like 'biodegradable'; the possible applications of biodegradable plastics and criteria for such applications; and ways to address consumer confusion and limit the cross-contamination of waste streams.

Management of the waste infrastructure is crucial. Within the European Union, the subsidiarity principle applies. As a result, waste management systems differ between countries and, even within the same member state, the infrastructure may vary from region to region. When it comes to biodegradable plastics that are compostable, there are countries where there is high acceptance for these plastics (and the infrastructure is in place and works reasonably well), and others where acceptance is much lower.

There are examples of policy applications that have helped to extend the lifespan and utility of products. These range from the 'latte levy' on disposable cups, to formal educational programmes and a willingness within government to delegate authority to a local level, so that individuals can be empowered to do their part in taking action on waste.

Change is likely to be incremental, rather than an overnight transformation in the way consumers and society engage with biodegradable plastics. We need to remember that each step forward is positive.

BACKGROUND

This webinar is part of a series of events drawing on the Evidence Review Report *Biodegradability of plastics in the open environment*, delivered by SAPEA, and the associated Scientific Opinion by the European Commission's Group of Chief Scientific Advisors. The evidence review was coordinated by Academia Europaea Cardiff on behalf of SAPEA. If you'd like to find out more about this topic visit the SAPEA website. The webinar was organised by SAPEA, in partnership with the Royal Irish Academy.

SCIENCE AND ART

Artwork created by Heather Nunn was shown throughout the webinar. Heather's work, created using plastic litter, provides an engaging way of communicating with the public on the topic of biodegradable plastics and their impact on the environment.

REPRESENTATIVES



- Professor Ole Petersen MAE, Academic Director of Academia Europaea Cardiff Knowledge Hub **(Chair)**
- Professor Brian Norton, Secretary for Policy & International Relations, Royal Irish Academy **(Host)**
- Professor Richard Thompson, Director of the Marine Institute, University of Plymouth, Member of the SAPEA Working Group **(Moderator)**

PANELLISTS









- Alessandro Allegra, Policy Officer, European Commission's Scientific Advice Mechanism
- Professor Wouter Poortinga, Professor of Environmental Psychology, Cardiff University, Member of the SAPEA Working Group
- Professor Tatiana Filatova, TU Delft, Member of the SAPEA Working Group
- Professor Sabine Pahl, Professor of Urban and Environmental Psychology, University of Vienna
- Dr Shane Timmons, Research Officer in Behavioural Science, Economic and Social Research Institute
- Professor Klaus Menrad, Professor of Marketing and Management of Biogenic Resources, University of Applied Sciences Weihenstephan-Triesdorf
- Samantha Fahy, Sustainability Manager, Dublin City University
- Silvia Forni, Policy Officer, European Commission Directorate-General for Environment
- Dr Liam Carr, Lecturer & Programme Coordinator, NUI Galway

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