

**RUN-EU STUDENT WEEK I GENERAL ASSEMBLY**

**RUN-EU GREEN CHALLENGE SAPS**

**1. RUN-EU BIOPLASTICS SAP CHALLENGE**

**SAP Challenge Statement**

Bioplastics as a key driver for innovation within the plastics industry and will play a leading role going forward. In order to reach circularity and fossil-decarbonisation formulated in the concept, it is highly important to create a strong link between Bioeconomy and circular economy. The challenge proposed is to consider bioplastics that can be used as alternative to single-use plastic (SUPs) with particular consideration for replacing for example Personal and Protective Equipment (PPE) that has increased in usage during COVID-19 pandemic.

**General information**

Bio-based plastics can make a strong contribution as they use sustainably sourced biomass as feedstock for their production. They help to diminishing the dependency on fossil resources and reducing the emission of greenhouse gases. Mechanical or chemical recycling of those bio-based plastics further adds to the reduced environmental footprint of these products. The same applies for biodegradable and compostable plastics as they increase recyclability-options by adding composting and helping to create clean organic waste streams. European Bioplastics (EUBP) also focuses on sustainable products as well as on packaging. In this regard, EUBP looks forward to closely working together with the new Commission in order to create a sound regulatory framework for the use of bio-based as well as for biodegradable and compostable plastics.

Described by the European Commission as “the greatest challenge and opportunity of our times,” EUBP regards the bioplastics industry as crucial to achieving zero net greenhouse emissions. The Commission has put a special emphasis on the plastics industry and EUBP reiterates that bioplastics can be a key driver for sustainable innovation in this industry. “This roadmap marks Europe’s way to becoming a resource-efficient and competitive economy with zero net greenhouse gas emissions by 2050.

To reach circularity and fossil-decarbonization formulated in the concept, it is highly important to create a strong link between Bioeconomy and circular economy. Bio-based plastics can make a strong contribution as they use sustainably sourced biomass as feedstock for their production. They also help to diminish the dependency on fossil resources and reducing the emission of greenhouse gases. Mechanical or chemical recycling of those bio-based plastics further adds to the reduced environmental footprint of these products. The same applies to biodegradable and compostable plastics as they increase recyclability-options by adding composting and helping to create clean organic waste streams.

**Challenge**

COVID-19 pandemic has resulted in unprecedeted usage of SUPs, where there is pressing need to develop biopolymer as solutions. What factors need to be considered in the selection and use of

biopolymers given that the medical device industry is highly regulated. Plastics, such as in discarded PPE, are polluting our environment, including the marine. Also, given same, what would be the benefits of biopolymer solutions for medical waste management.

During the 14th EUBP Conference this month, Werner Bosmans from the European Commission's Directorate-General for the Environment explained the EU Commission's ambitions to further develop the framework for bio-based, biodegradable and compostable plastics. For example, key activities to be considered include the Life-Cycle-Assessment of different feedstock alternatives for plastics, the development of preliminary criteria for the beneficial use of compostable plastics as well as a study on biodegradability in the open environment.

- You may wish to consider how your challenge idea is going to inspire those involved and others to be involved?
- How will this challenge support engagement between the public/private sectors and with the general public?
- What current barriers are associated with this challenge and how they might be addressed, as well as, what resources would be required to address them?
- A PESTEL analysis of your selected challenge idea maybe appropriate.

The Bioplastics Challenge should be ambitious in terms of its potential impact but should also be achievable allowing outputs and outcomes to be delivered within a prescribed timeframe.

- You may wish to consider how your challenge idea is ambitious?
- What will the impact of this challenge be should it be successfully addressed?
- Who are the beneficiaries of this challenge?
- How will they benefit?
- Why will it require a novel, interdisciplinary-led solution?
- How can it be achieved in the timeframe?
- What resources are needed?
- What is the opportunity and why now?
- A SWOT analysis of your challenge idea could be carried out.

#### **Areas for consideration could include: Bioplastics Challenge**

- Bioplastic raw materials and their source manufacturing, extraction requirements
- Alternative sources to raw materials from food / biomass waste industries
- Creation of circular bioeconomic opportunities from food / biomass waste sources
- Social innovation in Bioplastic PPE production
- Public Policy change

#### **Overall Challenge Structure**

1. Describe clearly the societal challenge?
2. Why is it important?
3. What's the opportunity for Europe?
4. How is it visionary and inspirational?
5. Identify which stakeholders/beneficiaries you would need to include to validate the challenge?
6. What are the key barriers that your team will address?
7. Describe clearly the solution proposed? This should not only be technical but also societal.
8. How is it novel and/or unconventional?
9. How will the proposed approach (technical/non-technical) lead to disruptive innovation?
10. How feasible/viable is the solution? What are the risks?
11. What outcomes will your solution deliver and when?
12. How will your solution transform society?

### **Learning Outcomes**

At the end of this challenge-based SAP students will be able to

- Apply critical thinking, creative problem-solving concepts and design thinking models and tools for solving societal challenges
- Work in multidisciplinary, multicultural and co-creation environments
- Communicate information, ideas, problems and solutions to both specialist and non-specialist audiences clearly
- Propose solutions for societal real problems and challenges that demand innovation and a varied set of skills

### **Suggested Pre-Reading Information FOOD Challenge**

- <https://upthink.works/bioplastics-whats-the-solution/>
- <https://www.mdpi.com/1660-4601/18/15/7729/pdf>
- <https://bioplasticsolutions.com/>
- <https://www.european-bioplastics.org/>
- <https://e360.yale.edu/features/why-bioplastics-will-not-solve-the-worlds-plastics-problem>

**SAP Working Week Structure**

1. Welcome
2. Project Objective
3. Team Building
4. Learning / Teaching Strategy (Design Thinking, Challenge-Based experience, Double-Diamond, Collaborative Learning, co-creation...)
5. Introductory Sessions / Pre-reading / Master classes
6. Discovery of the Challenge! (Building understanding through data collection, analysis and immersion)
7. Define a Problem Worth Solving! (Problem Statement, Point of view)
8. Develop Solution!
  - Brainstorm, Designing, Visualising, Sketching
  - Designing and making a low fidelity prototype. Testing and experimenting the prototype.
  - Designing MVP/Solution (if feasible within the challenge topic).
9. Delivering Solution!
10. Finalising Solution and Presentation
11. Final Presentations / Pitches
12. GA assembly presentation of winner
13. Learning Reflection (during the following week when they are already home).

**SAP on the ground requirements**

Tools and Collaborative Platforms (canvases, Miro, Teams, etc...)

Invited Guests / External Partner / Visits / Field Work

RUN-EU coaches