

Position of European Bioplastics

INDUSTRIAL USE OF AGRICULTURAL FEEDSTOCK

The transition from a fossil-based to a renewable, bio-based economy is of essential importance if the European Union wants to achieve its goal set in the European Green Deal to become climate neutral by 2050. This transition requires the collaboration of the materials and manufactured products sectors, and, in particular, the plastics industry, by using alternative sustainable feedstocks, such as bio-based feedstocks.

Bioplastics encompass a family of different materials that are bio-based, biodegradable, or both. 'Bio-based' means that the material or product is fully or partly derived from biomass. 'Biodegradable' refers to a biochemical metabolism process during which micro-organisms available in the environment convert materials into natural substances such as water, carbon dioxide, and biomass.

Using biomass for industrial purposes, such as the production of bioplastics, has major benefits. It reduces the dependency on limited fossil resources and reduces greenhouse gas emissions. Through the implementation of use cascades, bioplastics can also make an important contribution to resource efficiency.

Playing an important role within the circular economy, the bioplastics industry has developed dynamically in recent years and has a significant growth potential. Global production capacities are predicted to grow from 2.41 million tons in 2021 to approximately 7.59 million tons in 2026. Maintained access to sustainably grown biomass is critical to guarantee this growth.

Today, bioplastics are mostly made from carbohydrate-rich plants, such as corn or sugar cane, so called food crops or 1st generation feedstock. Currently, 1st generation feedstock is the most efficient feedstock to produce bioplastic, as it requires the least amount of land to grow on and produces the highest yields¹. In order to fulfill its growth potential, it is important that the bioplastics industry is ensured access to 1st generation biomass now and in the future. At the same time, the bioplastics industry is looking into the use of non-food crops (2nd and 3rd generation feedstock), such as cellulose, with a view to the development of new, innovative materials in future.

The choice of a biomass type for industrial use should depend on the sustainability and efficiency of the feedstock.

The discussion about the use of biomass for industrial purposes is often linked to the question whether the conversion of potential food and feed to materials is ethically justifiable. Yet, the mechanisms to grow renewable feedstock for a continuously developing bioeconomy do not have to conflict with the need to reverse climate change and to provide sufficient (healthy) food for a growing world population. On the contrary, by combining regenerative agricultural practices with new carbon credit mechanisms, the industry and farm economy has caught up with the calls for action to improve natural ecosystems. At the same time, they create incentives to increase soil health and productivity. As 1st generation biomass still represents the main renewable feedstock to produce bioplastics, it can contribute to food security by incentivising regenerative agricultural practices.

¹ See publications of nova-institute (2013): „Food or non-food: Which agricultural feedstocks are best for industrial uses?“.

No competition between biomass use for food, feed, and for material use.

94 percent of the global agricultural area is used to grow food and feed or used as pastures. The area needed to grow biomass for material use accounts for approximately 2 percent. Within this share, bioplastics account for just over about 0.01 percent.^{2,3} The sheer difference in volume shows that there is no competition between the use of biomass for food, feed, and for material use. What is more, 1st generation feedstock bioplastics are an enabling technology that will eventually facilitate the transition to later generations of feedstock. Consequently, the use of 1st generation feedstock for industrial applications should not be discriminated against.⁴

Europe needs a level playing field for all bio-based industries.

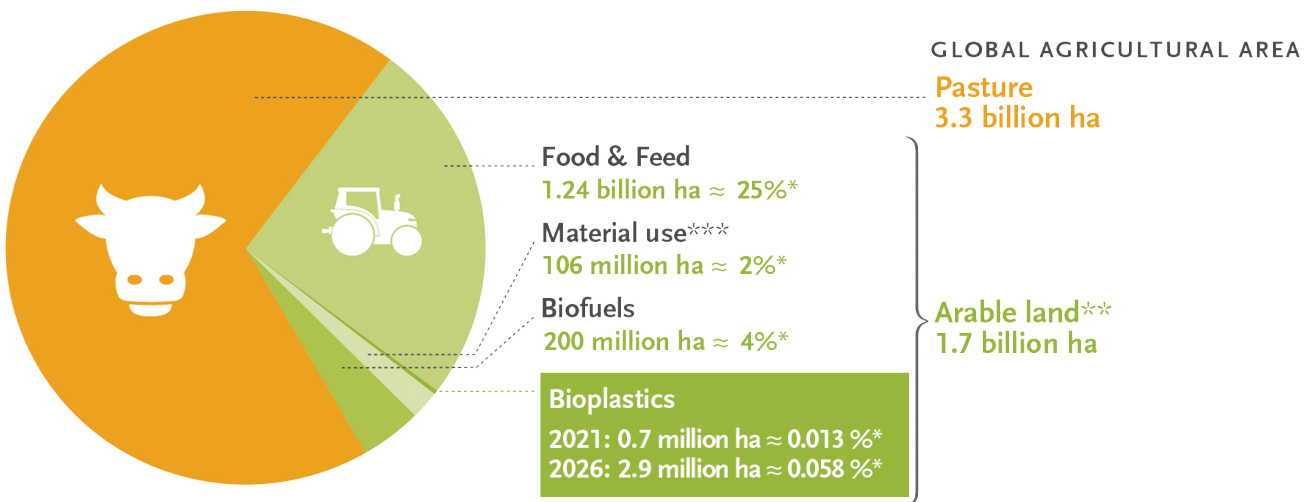
Europe needs a level playing field for all bio-based industries to ensure the highest value creation and the strongest environmental benefits. A level playing field for the use of

biomass in materials, compared to the use of biomass for energy, needs to be established. At European level, many measures exist, such as subsidies, quotas, taxes, etc., all of which should either be bestowed equally to different industries using biomass, or to none at all. Currently, the energy sector receives immense subsidies, whereas the bioplastics industry receives none - a condition that distorts the effectiveness of bio-based market segments. European Bioplastics calls for an equal treatment of all pillars of the bioeconomy and opposes political discrimination or preference of specific bio-based industries.

About European Bioplastics

European Bioplastics is the European association representing the interests of the bioplastics industry along the entire value chain. Its members produce, refine and distribute bioplastics i.e., plastics that are bio-based, biodegradable, or both. More information is available at www.european-bioplastics.org.

Land use estimation for bioplastics 2021 and 2026



Source: European Bioplastics (2021), FAO Stats (2020), nova-Institute (2021), and Institute for Bioplastics and Biocomposites (2019), University of Virginia (2016). Info: www.european-bioplastics.org *in relation to global agricultural area, ** Including approx. 1% fallow land, ***Land-use for bioplastics is part of the 2% material use

² Market data by European Bioplastics and nova-Institute (2017).
³ For more information on food security see the Economist Intelligence Unit's assessment tool: <http://foodsecurityindex.eiu.com/>.
⁴ This position is further backed up by a study published by the World Bank in 2013, according to which an increase in food prices is largely influenced by the oil price. Biofuels and, by extension, bioplastics play a negligible factor here.