

Unintended Consequences of Circular Economy



Bioplastics are a growing market due to the criticism faced by the fossil-based plastics. However, the EOL of these plastics are still a critical discussion. This study is based on the end of life of bioplastics for children's toys and childcare products made of PLA along with its blends. Results shows that there is a technical feasibility to manage and create solutions for the EOL of these bioplastics, however since there is a lack of scale, which does not justify the investment for a new waste stream and infrastructure. This limits the attractiveness of the bioplastics market. Other arguments about the effects on the agricultural land used to produce these crops and the use of food-based feedstock also add on to the disadvantages of using bioplastics. However, there is always scope for innovation for alternative feedstock which could change the perception of bioplastics. Looking at the whole life cycle of bioplastics in the current market situation, conclusions about whether they

contribute in the right way towards sustainability could still be questionable. However, there could be huge scope in the future influenced by a larger scale of market switching to bioplastics, change in the legislation and social behavior. This could consequently give rise to new opportunities for the EOL of bioplastics in the future, but the time frame of when and where is nevertheless still uncertain.

Tushita Prakash

Project coach:
Dr. Christine Grimm

Project expert:
Daniel Portmann

Industrial partner:
AIJU Institute

Semester:
FS21

Image source:
© <https://www.istockphoto.com/de/search/2/image?phrase=bioplastic>