

Project Name: Development of Microbial Production of Next-Generation Polylactate From Biomass-Derived Sugars (2020–2023*)

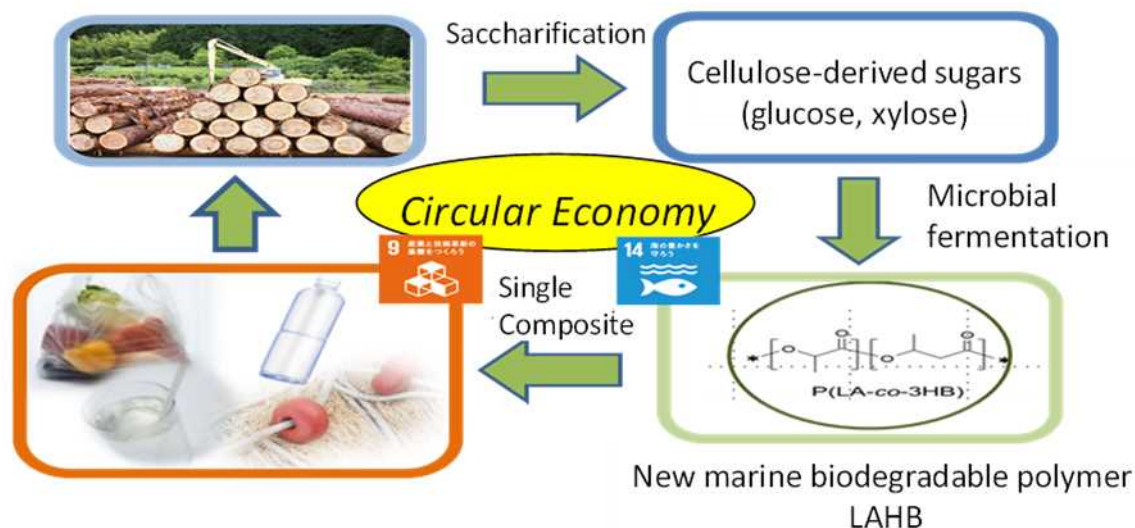
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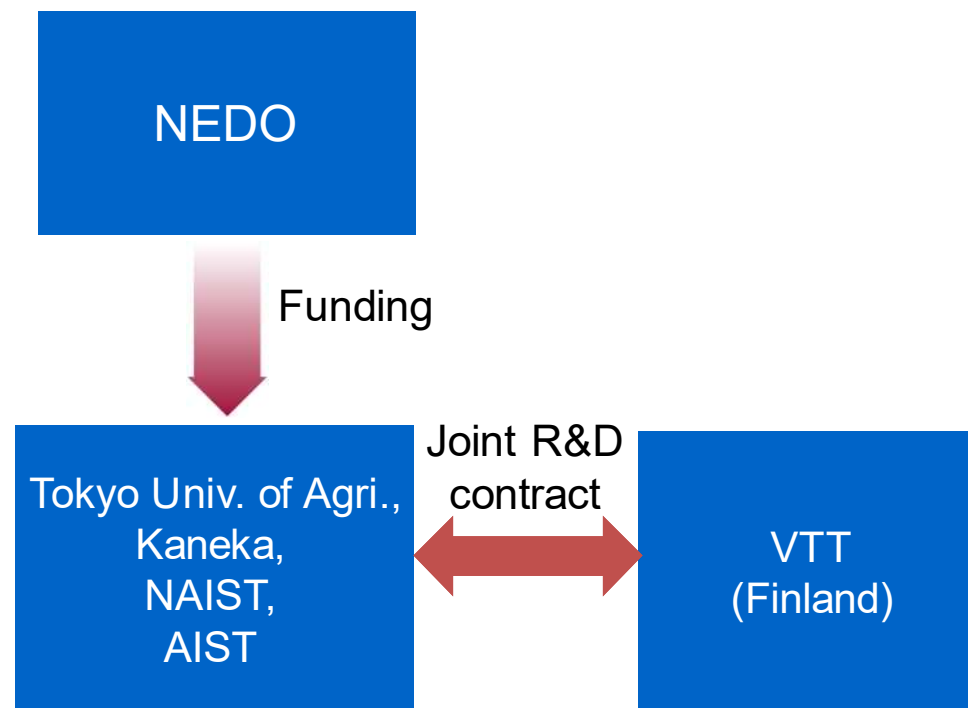
Entrusted parties: Tokyo Univ. of Agri./Kaneka/NAIST/AIST in Japan

Outline of the project

- **Background:** The microbial production of new polymeric material from sugars will contribute to CO₂ reduction and solving the problem of marine non-degradable plastics.
- **Purpose:** The microbial production of next-generation polylactate from sugars.
- **Contents:** Fermentative production of the biopolymer, LAHB, by using an industrial strain of hydrogen bacteria taking advantage of carrying a lactate-polymerizing enzyme.
- **Outline:** Pathway engineering for LAHB production from sugars through international collaboration. The materialization of LAHB based on the structural and property data.



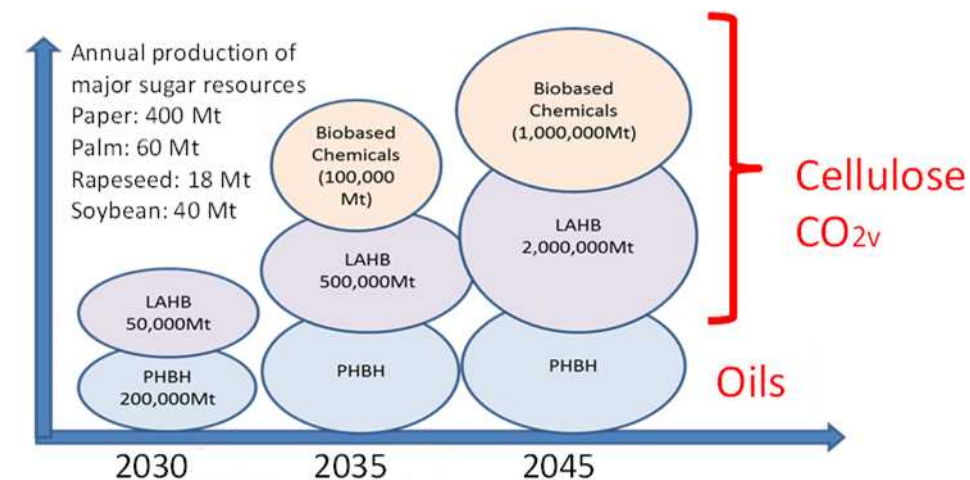
Project scheme



Significance of international R&D

- **Significance and merit:** High-value biorefinery technology from biomass-derived sugars developed by VTT should be very effective for our target polymer production using an industrial strain of hydrogen bacteria.
- **International R&D:** The microbial LAHB production will be reinforced by a sugar transporter as well as sugars preparation technology developed by VTT.

Expected outcomes



- **Predicted CO₂ reduction effect:** In a case where the production of 50,000 tons/year is implemented into society: **83,000 tons/year.**