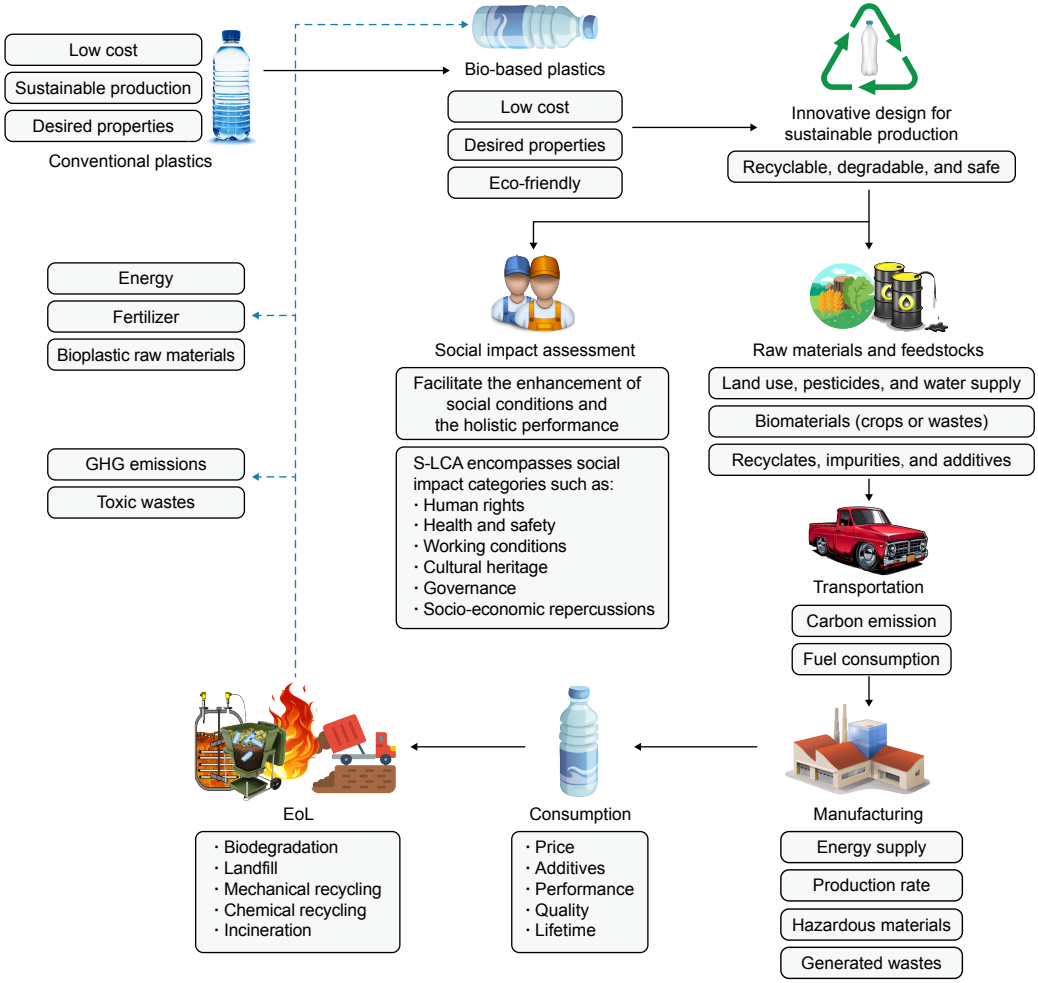
Low cost
Sustainable production
Desired properties
Conventional plastics
Bio-based plastics
Low cost
Desired properties
Eco-friendly
Innovative design for sustainable production
Recyclable, degradable, and safe
Energy
Fertilizer
Bioplastic raw materials
GHG emissions
Toxic wastes
Social impact assessment
Facilitate the enhancement of social conditions and the holistic performance
S-LCA encompasses social impact categories such as:
· Human rights
· Health and safety
· Working conditions
· Cultural heritage
· Governance
· Socio-economic repercussions
Raw materials and feedstocks
Land use, pesticides, and water supply
Biomaterials (crops or wastes)
Recyclates, impurities, and additives
Transportation
Carbon emission
Fuel consumption
Manufacturing
Energy supply
Production rate
Hazardous materials
Generated wastes
Consumption
· Price
· Additives
· Performance
· Quality
· Lifetime
EoL
· Biodegradation
· Landfill
· Mechanical recycling
· Chemical recycling
· Incineration