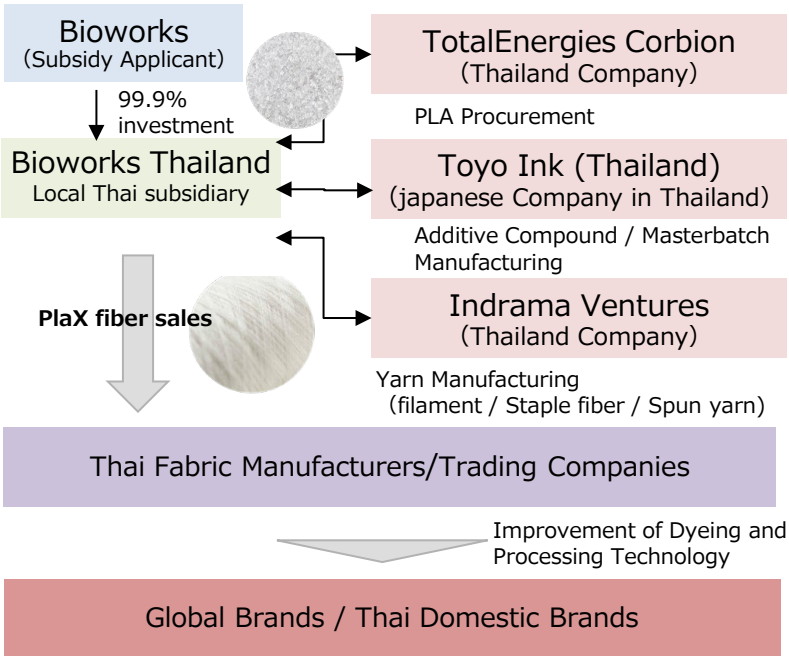


The Global South Future-Oriented Co-Creation Project: Selected Companies (2nd Application)

Project Name	Thailand / Mass Production and Processing Technology Establishment of Next-Generation Bio-Material "PlaX" and Global Supply Chain Construction Demonstration Project		
Company Name	Bioworks Corporation	Company Size	SMEs / other than SMEs
Category	Category1, Category2, Category3,	Project Field	GX Field, DX Field, Economic Security Field
Total Project Expenses / Total Subsidy Expenses / Subsidy Application Amount:	8.30 billion yen / 7.92 billion yen / 5.28 billion yen		

Project Overview

【Expected Business Scheme】



【Overview】

We will build a mass production base in Thailand for "PlaX", a synthetic fiber that achieves apparel-use quality by adding a proprietary plant-derived additive to sugarcane-derived polylactic acid (PLA) procured in Thailand. PlaX yarn cuts CO2 emissions by 70%~50% compared to polyester during the manufacturing stage (LCA). It is a new material with unique market advantages, featuring hydrophobicity, antibacterial properties, deodorizing effects, and the capability to be manufactured as filament. Based on test production achievements, we aim to demonstrate quality stability alongside cost reduction through a full-scale mass production system in Thailand—the main source of raw materials—with the goal of spreading it to the global apparel market. The globally growing demand for PLA is met in Japan primarily through imports, with approximately 50% sourced from the United States, 35% from Thailand, and the remainder from China and other countries. In this project, we will strengthen collaboration with PLA manufacturers in Thailand to enhance the stability and efficiency of the supply chain, thereby reinforcing the supply system for the Japanese market.

【Main Technologies and Demonstrability】

- Main Technology:** Blending technology using proprietary plant-derived additives to improve the heat resistance, durability, and dyeability of PLA, as well as spinning and processing know-how.
- Demonstrability:** While test mass production of continuous filaments has already succeeded in Taiwan, this project will demonstrate whether quality can be maintained, whether multi-product manufacturing is possible, and whether a cost-competitive mass production system can be established when scaling up using locally procured raw materials and local production facilities in Thailand.

【Schedule】

- Year 1: [filament production and quality establishment]** Operate a filament production line using Thai PLA. Optimize additive blending and complete improvements to achieve global standard quality.
- Year 2: [Fabric/dyeing demonstration and sales channel development]** Promote filament fabric development and demonstrate dyeing technology with local companies. Strengthen proposals to Western brands and acquire supplier certification.
- Year 3: [Expansion to staple fiber/spun yarn]** Apply technology to staple fiber and spun yarn to demonstrate the production system. Establish mass production for both filament and staple fibers, and commence full-scale global sales.

Resulting benefits to Japan

【How this project contributes to Japan's innovation creation】 By fusing Japanese additive technology with Thai resources, Japan will lead the global standardization (de facto standard) of PLA fiber and enhance its presence in international rulemaking. Simultaneously, by returning mass production technology from Thailand to domestic R&D (reverse innovation), Japan will maintain its technological superiority while strengthening the supply chain by diversifying PLA supply, currently reliant on the US, to Thailand.

Resulting Domestic Employment and Investment Effects

Expect a 20 billion yen increase in domestic sales due to PlaX fiber export revenues accompanying the expansion of material sales. Additionally, 100 new highly skilled personnel will be hired domestically to handle global management and R&D.

 Goldwin



Adopted as fleece material by a global brand in Japan last year.