

- Japan SDGs Innovation Challenge for UNDP Accelerator Labs -

Enhancement of traditional knowledge and food production with green and biotechnology for rural community in Sabah

UNDP Accelerator Lab Malaysia



Identified SDGs issues by Accelerator Lab Malaysia



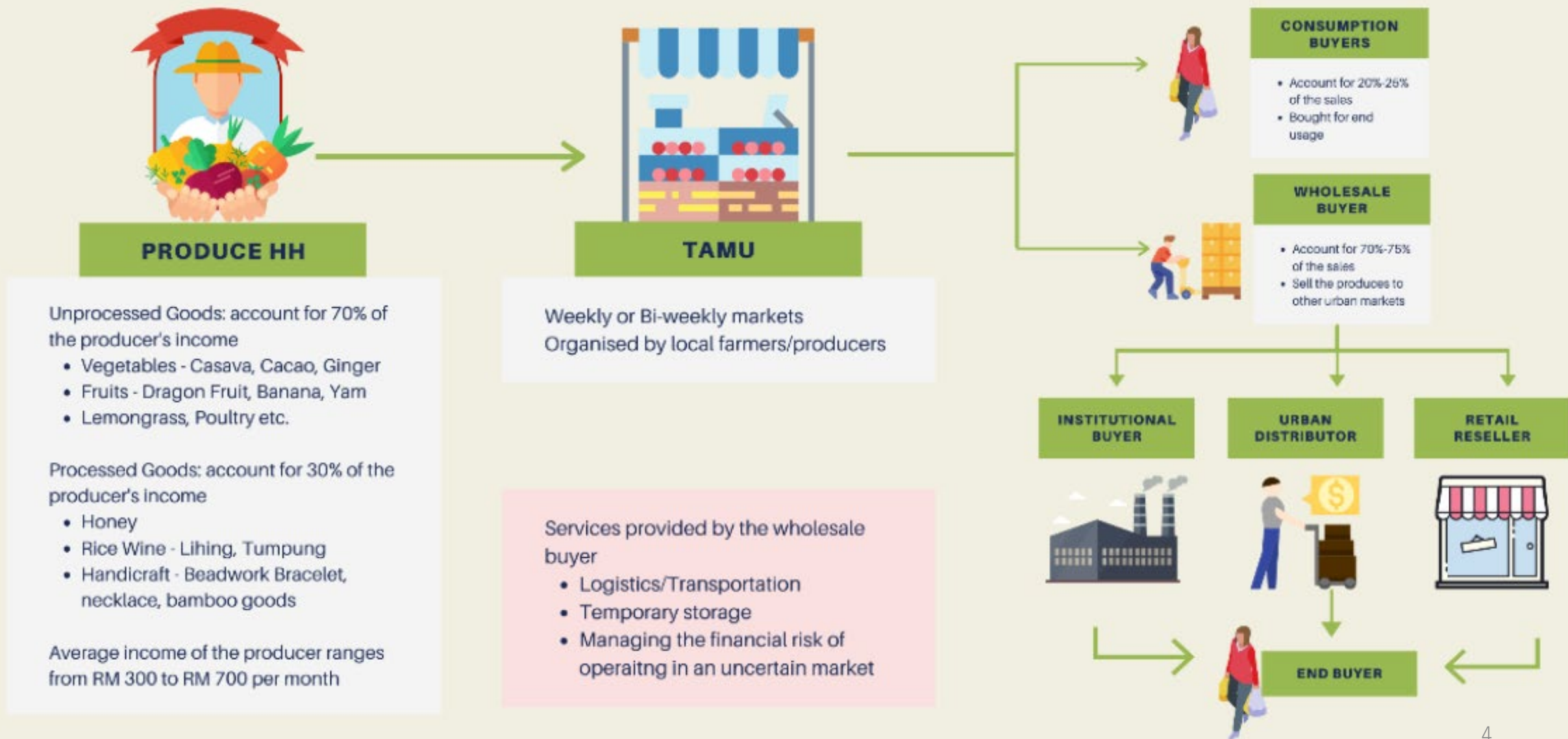
At the height of COVID-19 pandemic, the challenges that rural communities in Sabah faced in terms of food security and business continuity were exacerbated due to movement control order.

Systemic issues include:

- Poor road conditions and costly transportation logistics,
- Lack of warehouses and refrigeration facilities,
- Reliance on diesel generators for electricity makes food production processing costly and difficult to plan,
- Low profit margin for rural producers due to middleman,
- Low digital literacy, internet connectivity, and digital infrastructure,
- Lack of investment and knowledge transfer from private sector for innovation.

A feasibility study was conducted in June 2020 to map out the existing market value chain with the goal of co-creating an e-commerce system serving rural producers.

Existing Market Value Chain Overview



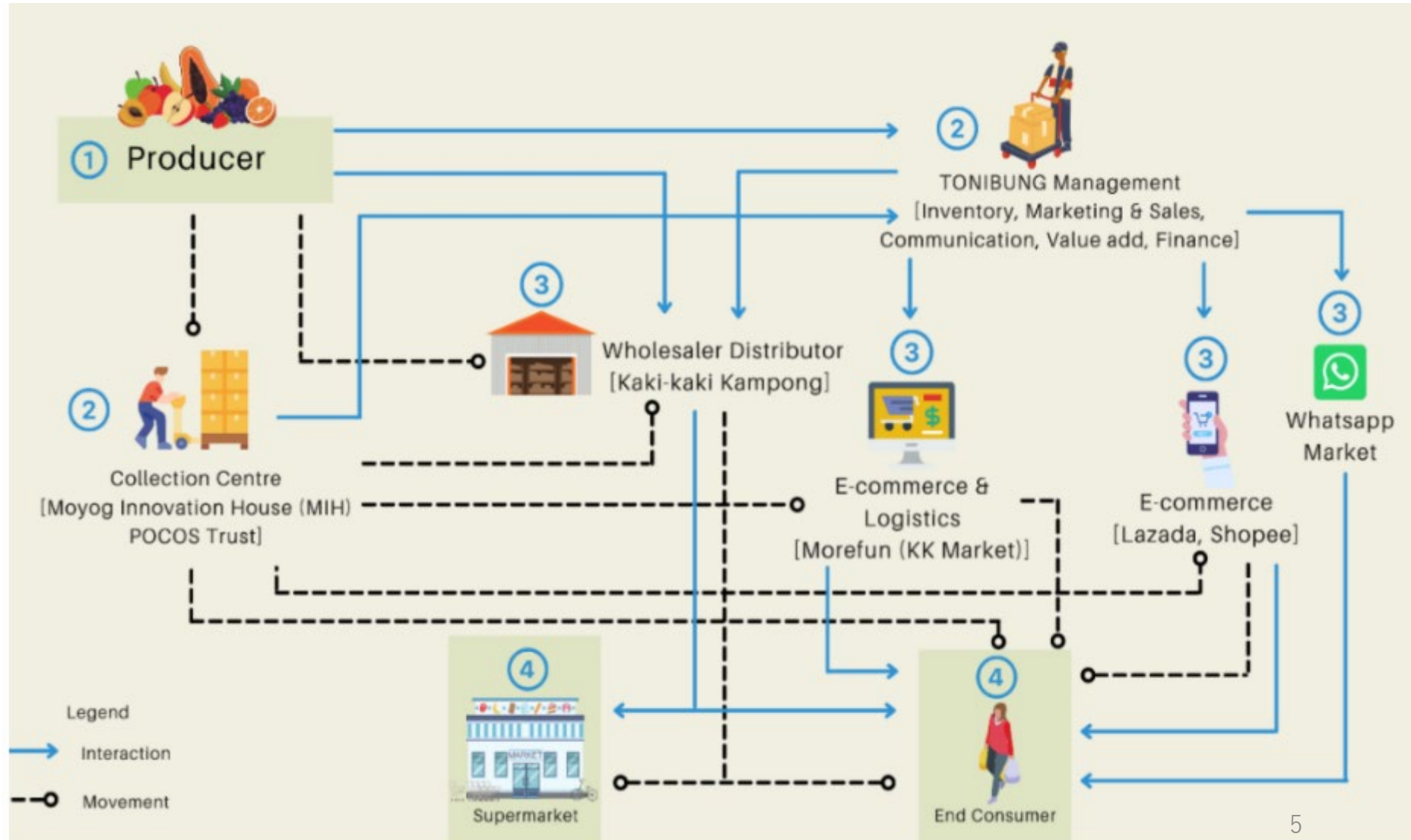
Identified SDGs issues by Accelerator Lab Malaysia

The Accelerator Lab Malaysia worked closely with TONIBUNG and Moyog Innovation House (MIH) to map out new market value chain to connect rural produces to consumers in the urban areas under a new normal.

An e-commerce platform, Koondos, was launched in Dec 2020.

www.koondos.com/home

Capacity building on marketing and food processing is ongoing.



Identified SDGs issues by Accelerator Lab Malaysia

Pilot Locations: Moyog and Pagalungan in Sabah, Malaysia

Sabah is in the northeast of the Borneo Island, with a majority of the population living in rural and remote areas.

Beneficiaries: Rural farmers, producers, women entrepreneurs, and youth innovators

Moyog: 30 entrepreneurs and producers in 3 villages (Ulu Papar and Upper Moyog)

Pagalungan: 30 entrepreneurs and producers in 3 villages (Salong, Sabibingkol and Sikalaban)



Planned/on-going solutions by Accelerator Lab Malaysia

Examples of Food Products



Dried lemongrass, *pandan*, lemon, and ginger.



Rice wine, stingless bee honey and chilli paste



Working with the local social enterprises and community innovators like MIH and TONIBUNG, A-Lab Malaysia is scaling up the pilot project in 2021 by:

- prototyping a **community solar dryer** that can be assembled using locally available resources without expensive procurement and costly transportation of machineries from urban areas into remote villages,
- experimenting with different **traditional knowledge of organic fermentation and food preservation methods** (e.g., natural fermentation enzymes from local Bambang mangoes) to enhance the quality of product while increasing product shelf life,
- exploring **green technology** and mechanisation to assist with **traditional food packaging methods** (e.g., bamboo container, dried corn skins etc.),
- supporting producers on **nutritional facts and organic certification** (e.g., MeSTI),
- improving **marketing and branding of products** to increase access to international market

Expertise/technologies expected from Japanese partners

- 1. Community solar dryer using materials that can be locally assembled.**
 - unit cost lower than current commercial cost of USD 10,875 per unit.
 - energy performance of USD2 or less per hour of operation, with a drying capacity of 50kg of food
- 2. Green technology and biotechnology solutions that will enhance traditional food preservation and packaging methods.**
 - blade and woodworking technology, material treatment and designs for airtight containers e.g., bamboo
 - technology for natural packaging replacing plastic for vacuum packaging e.g., dried corn skins, upih pinang
 - research on optimal temperature and process for forming for natural fermentation enzymes from local fruits e.g., buah kepayang and bambangan
- 3. Best practices in governance and regulation for laboratory certification in relation to enzymes and microbe technology used for food preservation**
- 4. Best practices and tracking technology for quality assurance suitable for use in rural supply chains.**



Modular Solar Dryer



Corn skin wrap packaging



Upih Pinang - Areca catechu act as tupperware



Bambangan mangoes- Magnifera pajang for fermentation



Buah Kepayang - Pangium Edule for fish and meat fermentation



Bamboo air tight containers

Resources the Accelerator Lab Malaysia can provide



Human resources for technical and advisory support, project monitoring and evaluation



Community engagement and partnerships for co-creation and user feedback, prototype development and project implementation with partners



Basic infrastructure and facilities for prototyping activities with partners



Data collection, validation, and analytics from current project insights and lessons learnt



Competencies in foresight, system mapping, and other innovation methodologies



Liaison with partner and government agencies for policy recommendations and curation of knowledge products

Project Stakeholders

Stakeholder	Type of Entity	Collaboration Status
TONIBUNG – CREATE Open technology Innovators	Social enterprise	Signed a Micro Grant Agreement as main implementing partner for Sabah Rural e-commerce
Moyog Innovation House (MIH)	Social enterprise	Implementing partner for Sabah rural e-Commerce in Moyog
PACOS Trust	NGO	Implementing partner for Sabah rural e-Commerce in Pagalungan
University Malaysia Sabah	Academic institution	Collaboration with MIH on solar dryer and food fermentation
SHELL	Private corporation	Collaboration with TONIBUNG on energy saving A2E project
Sabah Creative Economy and Innovation Centre	State agency	In planning. Training on social entrepreneurship provided to beneficiaries
United Nations Capital Development Fund	UN agency	UN-UN Agreement to implement Sabah Rural e-Commerce project

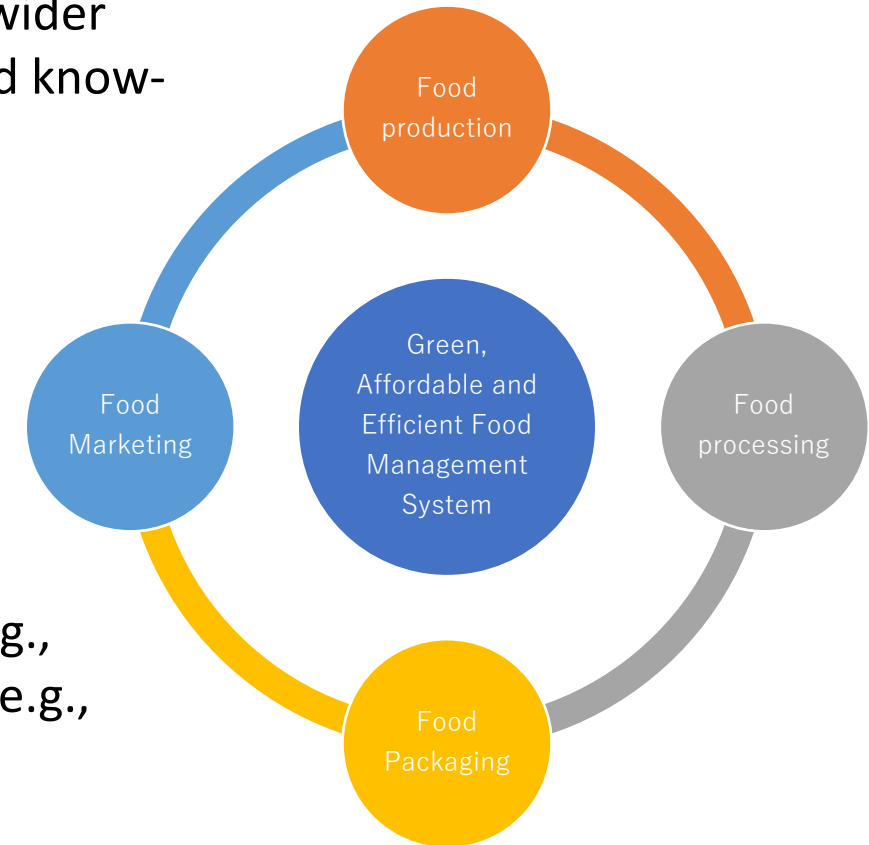
Expected outcomes and follow-up activities to the project

Expected outcomes

- Improved food security and livelihood opportunities of rural communities in Sabah, with better food management and supply chain systems in rural areas to access wider markets, using appropriate green technologies and know-how.
- Social economic development for sustainable communities for rural communities to reduce poverty rate.

Follow-up activities in April 2022

- Development of policy recommendation and knowledge products e.g., policy briefs, blogs, etc.
- Socialization of results in UNDP global network (e.g., Global Policy Network) through creative channels e.g., documentary, webinar, virtual roadshows etc.
- South-South cooperation showcase with other interested countries and international innovation partners.



Accelerator Lab Malaysia Team



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