

Transforming Rural Agriculture: Organising Farmers, Leveraging Technology

2024 September Global Leaders Programme
Hong Kong & Cambodia
Project Report

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Executive Summary

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Executive Summary (1/4)

The Kingdom of Cambodia is on a mission to become one of the **world's top ten agricultural-producing countries**, aiming to become an **upper-middle-income economy by 2030** and a **high-income nation by 2050**. In particular, one of the crops of interest is Cassava, a carbohydrate-rich crop that is increasingly in demand across the world.

The Cambodian government implemented a **National Cassava Policy** in 2020 to increase cassava production and quality, in addition to encouraging local processing of cassava into higher value goods for export. Furthermore, the increase in agricultural technological advancement and farmer accessibility to these technologies has significant importance in enhancing farmer productivity and improving farmer welfare.

In light of this, the 2024 Global Leaders Programme aims to introduce a new transformative model for **improving farmers' livelihood and advancing agricultural productivity in Cambodia**, with an initial focus on cassava and plans for future crop diversification.

As part of the programme, 21 leaders from various organisations completed a classroom Module in Hong Kong and as part of their experiential learning journey, they were joined by 4 additional Cambodian participants and travelled to Kampong Thom, Preah Vihear and Phnom Penh, Cambodia for the project-based learning.

This report summaries the cohort's project and fieldwork, during which they engaged with local community members and stakeholders from the public, private and nonprofit sectors. Through these interactions, the cohort gained valuable grassroot insights that have shaped the business model and solutions proposed in this report.



Executive Summary (2/4)

This report introduces a new venture, **Soma Domnam** (“Domnam” meaning “crop” in Khmer), which aims to bridge the gap between traditional farming practices and modern agricultural technology by creating a comprehensive solution that **enhances production, value addition, and market competitiveness**.

The company will foster strong relationships with key partners, including government agencies, universities, development organisations, and NGOs. The Relations & Partnerships Unit will be responsible for nurturing these relationships, securing funding, and exploring opportunities for infrastructure development, particularly for irrigation systems and logistical support.

While the company will initially focus on cassava production, the business model is designed to scale to other crops, enhancing the agricultural landscape in Cambodia more broadly. By establishing a **replicable model for cooperative farming, advanced technology adoption, and data-driven decision-making**, the company aims to drive **long-term economic growth, empower rural communities, and contribute to Cambodia’s food security and export potential**.



Executive Summary (3/4)

The proposed services for the new Soma Domnam venture are summarised below:

Proposed Services	Description	The Value Add
Subleasing of Equipment and Sale of High-Quality Inputs	Provide cooperatives with access to modern farming equipment through subleasing agreements, as well as access to high-quality agricultural inputs such as fertilisers and seeds.	Boost the overall yield and quality of cassava, positioning Cambodian farmers for greater success in both local and export markets.
Post-harvest Processing and Storage Facilities	Establishment of a warehouse and storage facility that will semi-process cassava by drying and cutting it into chips, then the dried material can be stored until export.	Add significant value to the raw product, allowing the company to sell cassava at higher prices.
Farmer Cooperatives and Dividends	Cooperatives will be given training in sustainable farming practices through technical programs and the cooperatives in the company's ownership will be given a 30% equity stake.	Farmers have more knowledge on agricultural practices, direct financial incentives, and vested interest in the company's success.
Collection of Real-Time Data	Collect and share real-time agricultural data with the government to align its activities with national agricultural strategies.	Provide valuable insights for the government to enhance resource management, land use planning and crop production forecasting.
Digital Platform	Provide insights into crop performance, soil fertility, weather conditions and market trends through the digital platform, with real-time data collected from the cooperatives.	Provide agricultural data to farmers for free to support decision making for enhanced productivity and profitability.

Executive Summary (4/4)

The company will generate revenue from four primary streams:

Cassava Sales	Agricultural Inputs	Subleasing Equipment	Data Sales and Digital Products
<ul style="list-style-type: none">Purchasing cassava from cooperatives and selling it domestically and internationally, particularly to Thailand, Vietnam, and local processing plants.	<ul style="list-style-type: none">Bulk purchasing and resale of high-quality fertilisers, seeds, and pesticides/herbicides to cooperatives and farmers.	<ul style="list-style-type: none">Leasing modern farming equipment from local distributors and subleasing it to cooperatives, who will be responsible for operations and maintenance.	<ul style="list-style-type: none">Monetising the agricultural data collected from cooperatives through the sale of detailed reports, analytics, and potentially associated advertising.

The company will operate under a proposed shareholding structure through a Special Purpose Vehicle (SPV) for each cooperative that ensures alignment of interests between Soma Group, cooperatives, and external investors:

- Soma Group (55%):** As the majority shareholder, Soma Group will provide the strategic direction, management oversight, and financial capital needed to drive the company's growth and operations.
- Cooperatives (30%):** The cooperatives, representing the farmers, will hold a 30% equity stake, ensuring their active participation in the business and financial incentives aligned with the company's success.
- Investors (15%):** External investors, which may include social impact investors, private equity or development agencies, will hold the remaining 15% and contribute additional capital, expertise, and support in scaling the business.



2024 Global Leaders Programme Introduction

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Global Leaders Programme



GIFT is an independent pan-Asian think tank

The **Global Institute For Tomorrow (GIFT)** is dedicated to advancing a deeper understanding of today's most critical drivers of change and assisting organisations to prepare for increasingly complex and dynamic challenges, contribute to redesigning society, and thus enable greater societal sustainability and resilience.

The **Global Leaders Programme (GLP)** is GIFT's flagship experiential programme designed for managers from leading global organisations to think critically about the drivers of change in the 21st century and develop new business models that address the defining challenges of our times.

Project Team

- A cohort of **21 participants** from **8 companies** representing **10 countries** joined the Global Leaders Programme in Hong Kong, China and Phnom Penh, Cambodia from the 2nd to the 13th of September 2024. The cohort convened in Hong Kong from the 2nd to the 6th of September for classroom sessions, followed by site visits and business planning sessions in Kampong Thom, Preah Vihear and Phnom Pehn, Cambodia, from the 7th to the 13th of September. 4 additional Cambodian participants joined in Module 2, bringing the total number to **25 participants**.
- In partnership with **Soma Group Co. Ltd.**, along with government officials, industry associations, businesses, NGOs, and other community stakeholders, participants produced a business plan to educate, address, and improve Cambodian cassava farmers' challenges with yield and profitability, which can be served as a model that can be replicated for other crops in Cambodia and other regions of ASEAN.



Participating Organisations:



Project Partner



Soma Group Co. Ltd. was founded in 2007 and is one of Cambodia's leading local conglomerates, comprised of 11 subsidiaries operating in 6 industries, employing more than 2,500 staff countrywide.

Vision: To be the most trusted and reputable business in Cambodia, meeting the gold standard of international business practices.

Mission: Inspire and drive positive social impact in Cambodia through sustainable solutions.

- Soma Group started as, and remains to be, a committed employer in the agriculture sector, a key driver of Cambodia's current and future economy. **C.A.D.I Co., Ltd.**, a joint venture between Soma Group and Charoen Pokphand (C.P) Group is the biggest farm in Cambodia and ASEAN, utilising modern agricultural technology and large-scale precision agriculture. Soma Group aims to make significant advancements and a positive impact on farming practices in the agricultural sector and food security.
- Soma Group currently have a 3000-hectare pilot cassava plantation (Sal Sopheapeanich), in Kampong Thom close to the border with Preah Vihear. Soma Group are interested in improving farming production on this farm through technology and agriculture digitalisation and using the data, information, and outcomes generated to replicate the model and improve productivity for other crops.

In addition to agriculture, Soma Group is involved in many other sectors, including infrastructure, education, trading, real estate and hospitality, and media.

Soma Group Subsidiaries:



Scope of Project (1/2)

Project Objectives

This project was initiated to **improve the livelihood of farmers in Cambodia** through **increasing productivity** of cassava cultivation by **leveraging technology, education and data-driven farming**.

The key objectives are as follows:

- Develop a **sustainable business plan** for Soma Group to improve yield and profitability of cassava farmers with technology.
- **Create partnerships** with relevant stakeholders, institutes and government to enhance farmer welfare by improving the agricultural sector through education, policies, partnerships, research and technology development.
- Define a **scalable and inclusive value chain** to ensure financial viability and a positive social impact of the business
- The proposed solution has potential to be **replicated to other farms and crops**.

Methodology for Field Project

- Site visits and key stakeholder meetings to explore and gain deeper insights on the agricultural sector of cassava farming, including the challenges of smallholder-farmers.
- Information gathering and analysis.



Scope of Project (2/2)

Insights from Key Stakeholders including:

- Sal Sopheapeanich Cassava Farm
- Kampong Thom Local Farming Community
- Collection point owner
- Commune chief and local government commune officials of Sala Visai, Prasat Balank District Community
- C.A.D.I. Mega Farm
- Royal University of Agriculture (RUA)
- Ministry of Agriculture, Forestry and Fisheries (MAFF)
- Cambodia Development & Resource Institution (CDRI)
- Cassava Federation

Outcomes

- Development of a business plan to be considered by Soma Group, including risk analysis and ideas on risk mitigation, key recommendations and next steps.
- Presentation of main aspects of the business plan to Soma Group, government officials, representatives and students of RUA, of CDRI, and of the Cassava Federation, as well as development partners and others from private and business sectors.





Project Background

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Overview of the Cassava Crop

Cassava is a carbohydrate-rich crop that has a wide range of uses in the so-called '4Fs' of: (i) food for human consumption, (ii) feed for animals, (iii) fuel in the form of ethanol, and (iv) factories, where cassava is used to produce, for instance, alcohol, citric acid, clothing, medicines, paper, and chemicals.

For many years, global demand for cassava has strongly grown thanks to its many industrial uses and the fact that it has often been cheaper than other starchy crops. This has then lifted it to the status of being the **world's 5th most important crop** by output, after only corn, rice, wheat and potatoes.



The emergence of cassava as a potential global crop presents vast opportunities.

Global Market Outlook on Cassava

Growing Global Demand

Global Production: The world produces about 300 million metric tons of cassava annually.

Market Growth: The global cassava market is expected to grow at a compound annual growth rate (CAGR) of 4.5% from 2023 to 2028.

Key Export Markets

China: Imported 5 million metric tons of cassava in 2022, with a value of approximately US\$2 billion.

European Union: Imported about 1.5 million metric tons of cassava products in 2022.

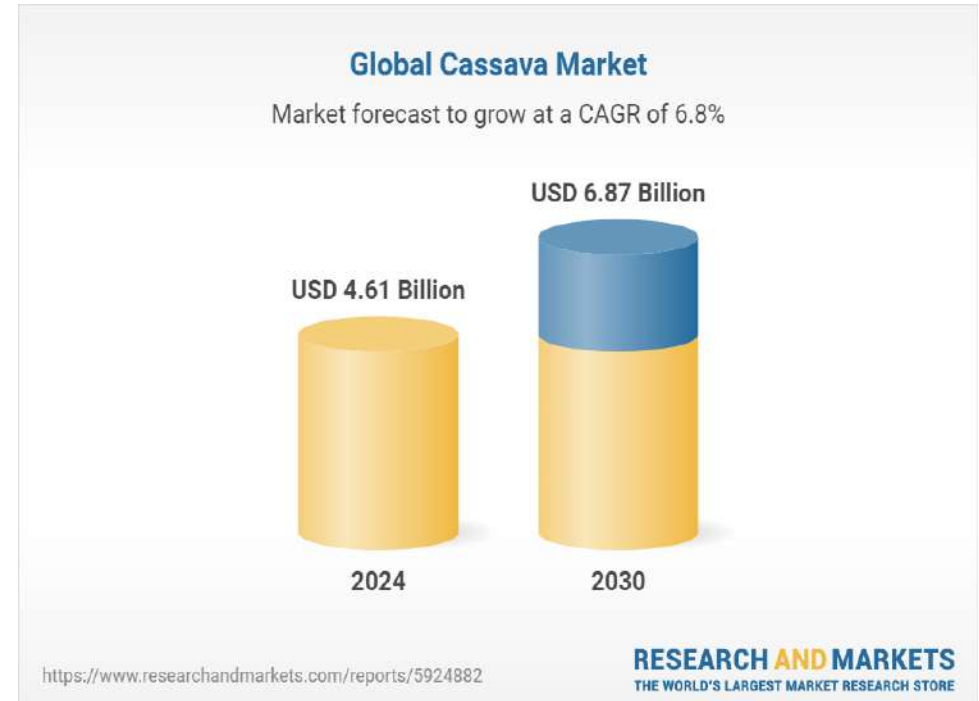
United States: Imported roughly 1 million metric tons in 2022.

Value-Added Products

Cassava Starch: The global market for cassava starch was valued at US\$7.5 billion in 2022, with a growth rate of 5% CAGR.

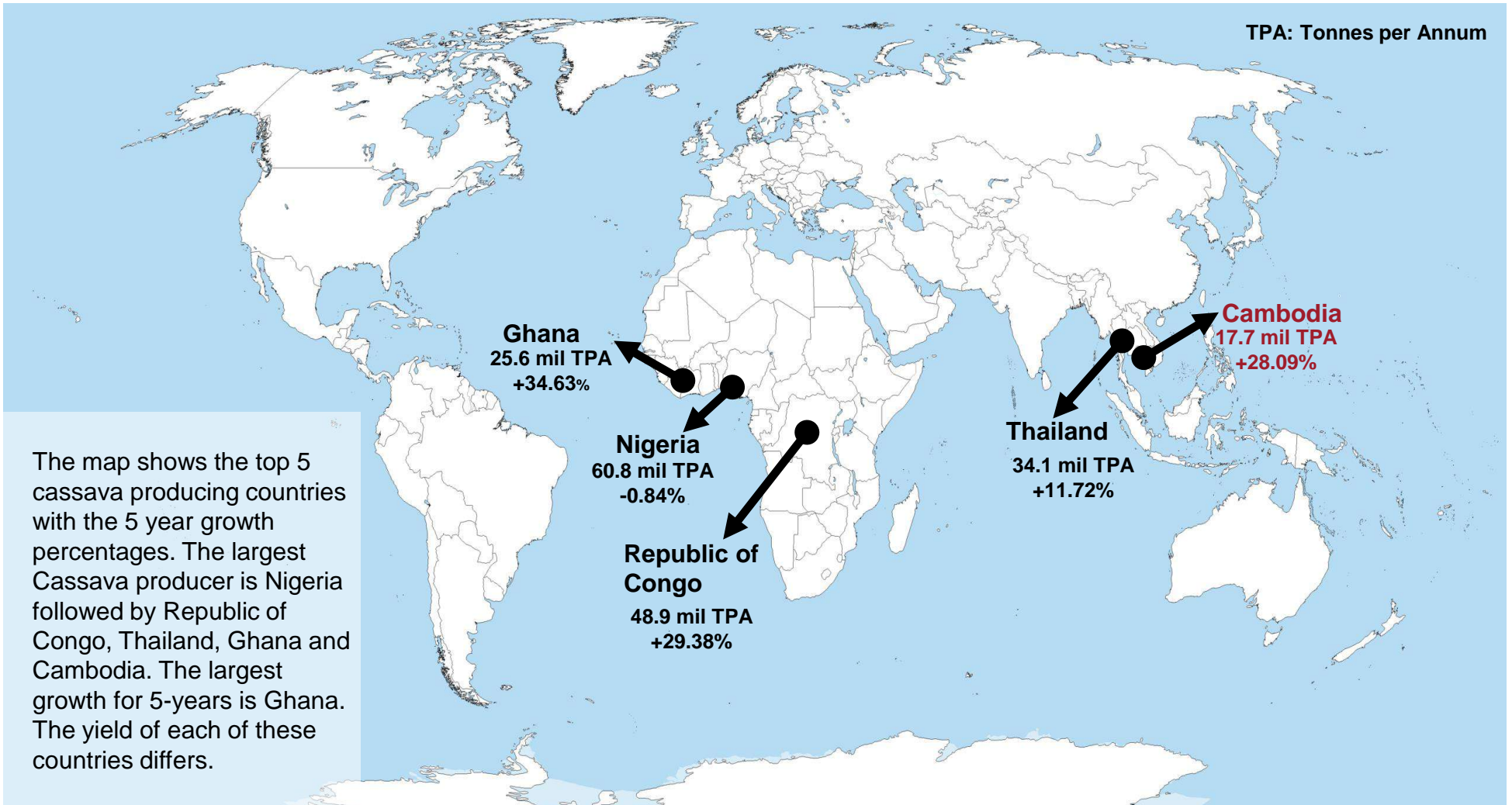
Bioethanol: The global bioethanol market was valued at US\$103 billion in 2022.

Biodegradable Plastics: The market for biodegradable plastics was valued at US\$6.5 billion in 2022.



Enhanced Cassava cultivation will spur rural industrial development and raise incomes

Cassava Production in the World



Cambodia is emerging as a significant producer with a 5-year growth percentage of 28%.

Cambodia Overview



- Cambodia, officially the Kingdom of Cambodia, occupies 181,035 square kilometers on the southwestern Indochina Peninsula, with **20% of its land used for agriculture**.
- The country is divided into 25 cities & provinces, 163 districts, and 1,409 communes, and has a **population of 15 million**.
- Key economic sectors include agriculture, tourism, and textiles. **65% of the population relies on agriculture**.
- Under the new agricultural policy, the national government aims for **Cambodia to become one of the world's top ten agricultural-producing countries** aiming to become an upper-middle-income economy by 2030 and a high-income nation by 2050.
- Major crops include rice, cassava, and maize, with the country being the **7th largest rice exporter globally**.
- Cassava production has increased significantly, with current yields around **12-14 million tonnes annually**.
- The capital, Phnom Penh, is the economic hub, while provinces like Kampong Thom and Preah Vihear are notable for agricultural activities, particularly cashew and cassava cultivation.

77 percent of rural households rely on agriculture, fisheries, and forestry

Cassava in Cambodia

- Cassava is a **key agricultural commodity in Cambodia**, where it ranks second only to rice in terms of production and consumption.
- Cassava is mainly grown in Battambang, Banteay Meanchey, Pailin, Kratie, and Kampong Thom provinces. It is planted in May and harvested between November and the end of February each year.
- Cassava cultivation practices follow guidelines influenced by neighboring countries like Thailand. Planting occurs at the start of the dry or early wet season, involving stem selection, land preparation, cultivation, pest control, and harvesting.
- Cambodia mainly exports cassava, including dried slices, fresh cassava, and cassava flour. Key export markets include Thailand, Vietnam, South Asia, and Europe.
- The sector faces several post-harvest challenges that affect its quality and profitability.



Cassava sector in Cambodia offers significant opportunities for improving food security and rural livelihoods

Increasing Cassava Production in Cambodia

Rationale for Increasing Cassava Production in Cambodia:

Market Alignment

- **Export Potential:** The growing global demand for cassava aligns with Cambodia's potential to increase exports to major markets such as China and the EU.
- **Value-Added Products:** Expanding into high-value products like cassava flour, starch, bioethanol, and biodegradable plastics offers significant market opportunities.

Competitive Advantage

- **Favorable Conditions:** Cambodia's tropical climate is well-suited for cassava cultivation, allowing for high yields and cost-effective production.
- **Cost Efficiency:** Lower production costs compared to other regions enhance Cambodia's competitiveness in international markets.

Economic and Social Benefits

- **Rural Development:** Boosting production will increase incomes for farmers and create additional employment opportunities.
- **Investment Attraction:** Enhanced production can draw foreign investment, especially in processing and bioenergy.



Cassava is a significant contributor to the agricultural sector in Cambodia.

Strategic Initiatives to Boost Cassava Production

Technology Investment

- **Modern Processing Facilities:** Upgrade to advanced processing technologies to improve efficiency and product quality.
- **Research and Development:** Invest in developing high-yield, disease-resistant cassava varieties.

Infrastructure Development

- **Transportation:** Improve logistics and transportation networks to facilitate efficient export and distribution.
- **Storage Facilities:** Construct advanced storage facilities to reduce post-harvest losses and maintain product quality.

Government and Policy Support

- **Subsidies and Incentives:** Utilise government policies and subsidies to support farmers and processors.
- **Trade Agreements:** Leverage trade agreements to open new markets and enhance export competitiveness.

Sustainability Practices

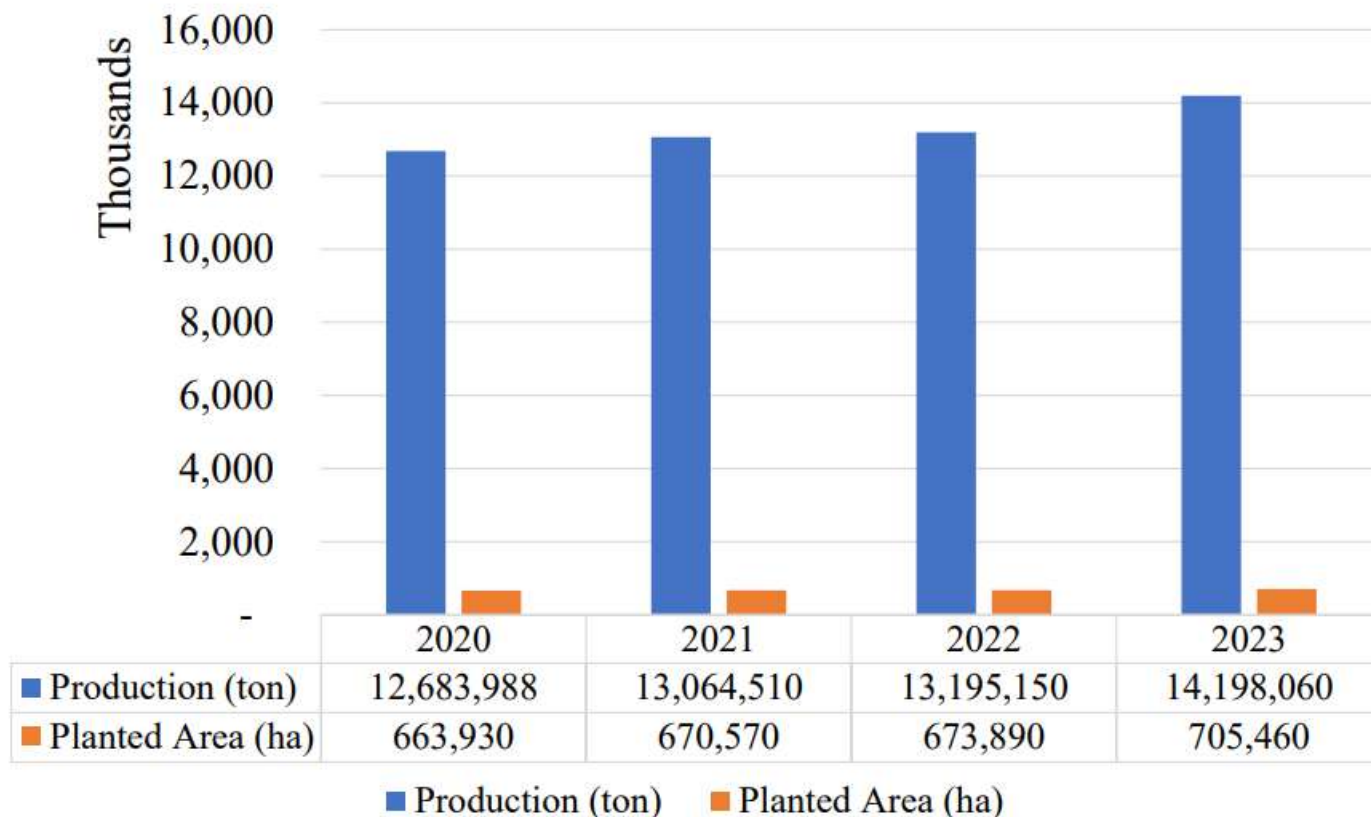
- **Sustainable Farming:** Implement sustainable agricultural practices to meet international standards and boost market appeal.
- **Certification:** Obtain certifications for organic and sustainable products to access premium markets.

Goal: To transform Cassava into a modernised, commercialised and profitable sub-sector



Cambodia Cassava Production 2020-2023

Annual Cassava Production 2020-2023



AFSIS, 2021 & MAFF, 2023

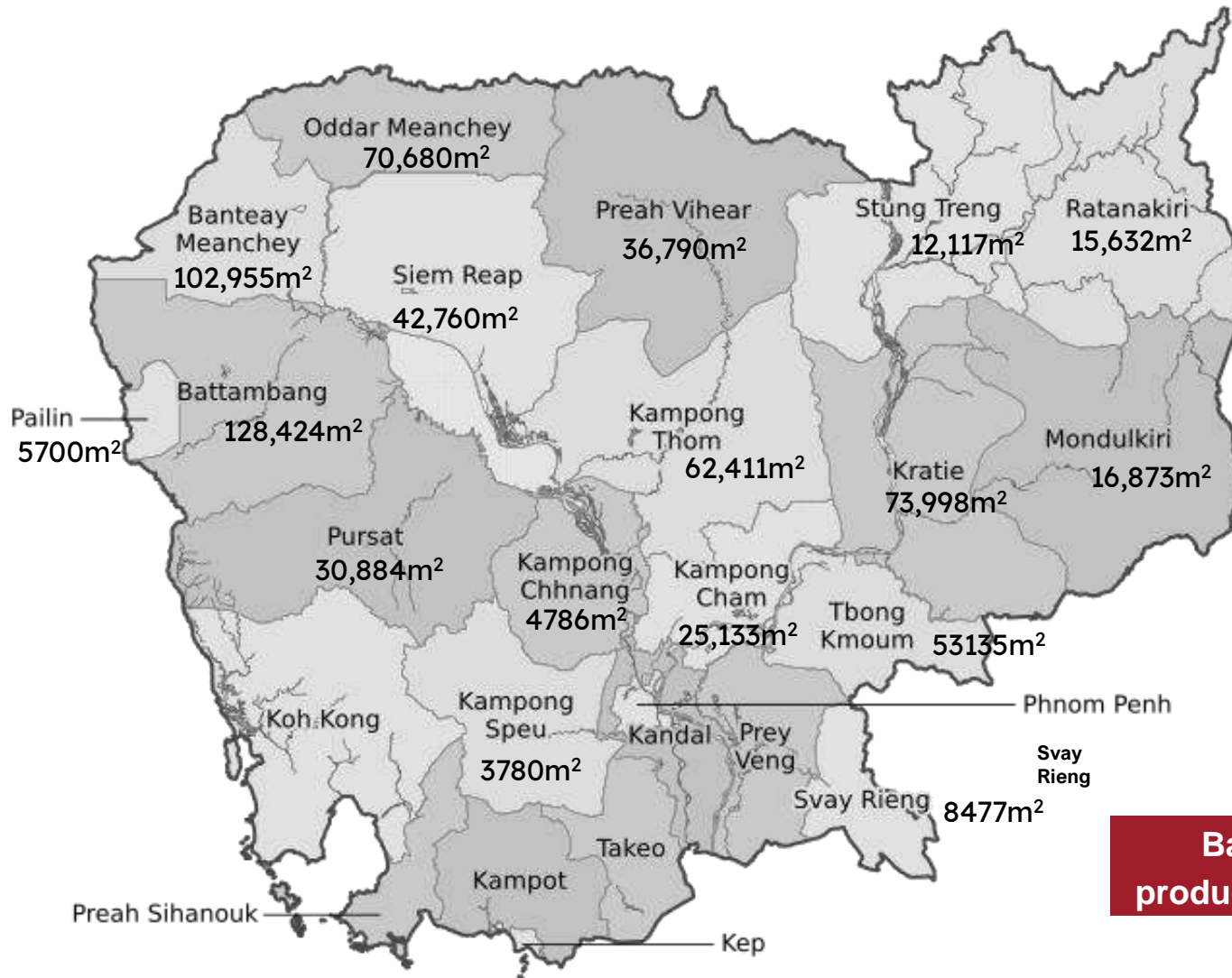
Between 2020-2023, the planted area of cassava in Cambodia has increased slightly, whilst the average yield has remained approximately 20 tonnes per hectare.

However, it must be noted that in 2014, the average yield was 25 tonnes per hectare and under optimum Cambodian conditions, yields of 36 tonnes per hectare can also be obtained.

The variance in yields demonstrates the need to improve cultivation practices for higher productivity and more sustainable cassava farming.

The business plan in this report aims to increase the average yields to 30 tonnes per hectare after 4 years.

Cambodia Cassava Production by Province

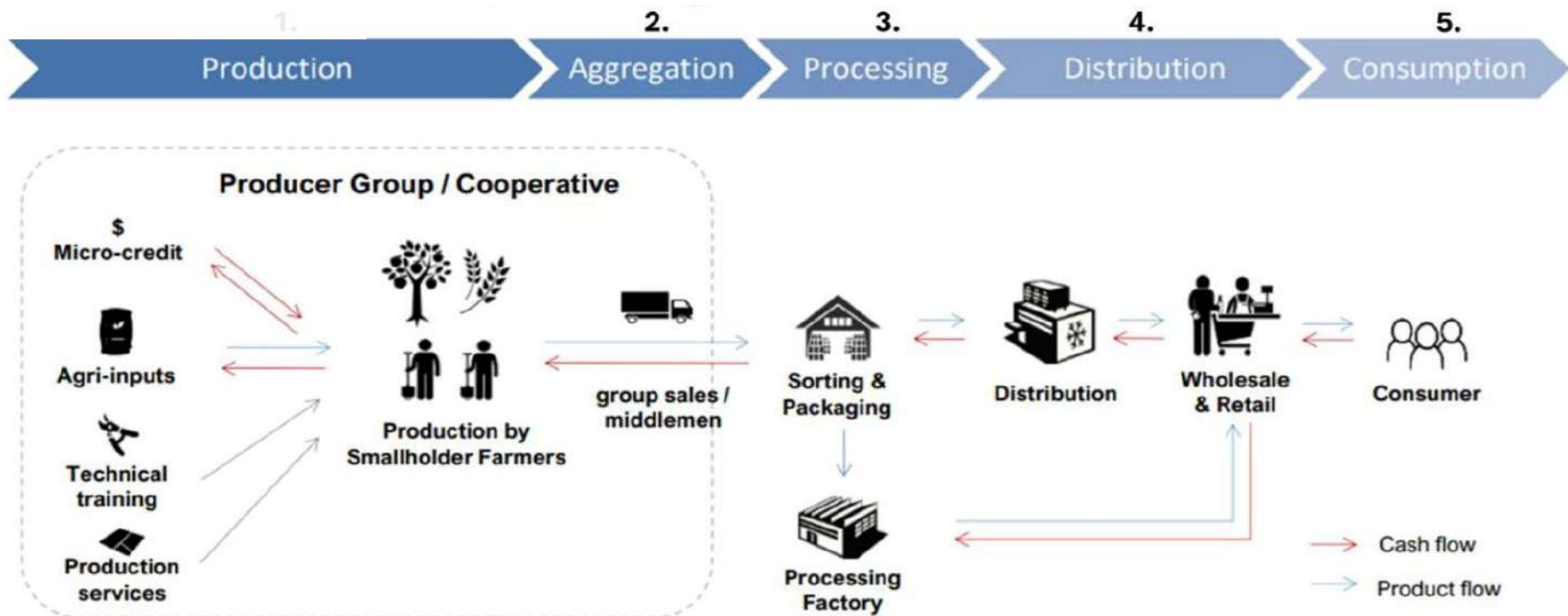


ខេត្តដែលមានសក្តានុពលដ៏ខ្ពង់ខ្ពស់

ល.រ	ឈ្មោះខេត្ត	ចំណាត់ថ្នាក់ 2022	
		ផ្ទៃដីដាំដុះ	ចំនួនផល.ត
17	17	17	17
01	បាត់ដំបង	128,424.00	2,703,927.00
02	បន្ទាយមានជ័យ	102,955.00	1,943,975.00
03	ប៉ៃលិន	57,000.00	858,000.00
04	ក្រចេះ	73,998.00	1,485,399.00
05	កំពង់ធំ	62,411.00	1,371,889.00
06	ឧត្តរមានជ័យ	70,680.00	1,341,912.00
07	ពោធិ៍សាត់	30,884.00	563,320.00
08	សៀមរាប	42,760.00	662,118.00
09	ព្រះវិហារ	36,790.00	735,800.00
10	កំពង់ចាម	25,133.00	484,006.00
11	រតនគិរី	15,632.00	200,661.00
12	ក្សត្របុរី	53,135.00	1,021,952.00
13	ស្ទឹងត្រែង	12,117.00	623,600.00
14	មណ្ឌលគិរី	16,873.00	271,095.00
15	ស្វាយរៀង	8,477.00	158,689.44
16	កំពង់ឆ្នាំង	4,786.00	104,430.52
17	កំពង់ស្ពឺ	3,780.00	87,507.00
	សរុប	745,835.00	14,618,880.96

Battambang has the highest production of Cassava in Cambodia.

Current Value Chain – Cassava



In the current cassava value chain model, farmers manage their own agricultural inputs, and their agricultural knowledge is passed on from other farmers. The raw cassava is sold to local collectors who have their own transport arrangements and act as middlemen. The collectors then sell the raw cassava at the borders to neighbouring countries such as Thailand and Vietnam. The leftover cassava stems are replanted by the farmers with no consideration of the quality of the stem, leading to lower yield and the potential spread of diseased crops.

It is important to address the challenges in the current value chain.

Challenges in Cassava Value Chain

Challenges of Cassava Production in Cambodia include:



Lack of infrastructure, including roads, electricity, and proximity to ports.



Insufficient labour force and facilities in remote areas.



Poor soils and unsuitable climatic conditions in underutilised lands.



Difficulty in obtaining sufficient and high-quality **planting material**.



Lack of suitable machinery for fully mechanised cassava production.



Susceptibility to climate change due to unsustainable farming practices.



Lack of supplementary water sources and irrigation facilities, increasing costs and weed growth.



Continuous planting **increases the risk of insect and disease problems**, requiring constant monitoring and control.



The business model proposed aims to address these challenges.



Business Model and Strategy

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Business Model Overview

Proposed Solution: Creation of a company by Soma Group, **Soma Domnam**, which will partner with communes and farmers organised as cooperatives. The company will help to incorporate technological advances into traditional farming practices to create a more sustainable agricultural sector for Cambodia.

The share structure of Soma Domnam is proposed to be Soma Group 55%: Cooperative 30%: Investors 15%. This is dependent on details to be negotiated.



Leveraging the economic and political power derived from the creation of cooperatives, given their scale, the model allows for the partnership to negotiate better prices and create stronger market positioning.

Starting with cassava, the model will eventually be expanded to include other crops, generating broader economic impact across the agricultural sector and enhancing food security.

The company organises the farmers into cooperatives and works with them to create added value, increase productivity and provide modern equipment, quality inputs, and technical training.

The company will leverage technology including operating a digital platform to collect real-time agricultural data from cooperatives that can be shared by farmers and the government.

Rationale of the Business Model

- Cassava, Cambodia's second priority crop, is vastly underutilised, with 96% of its yield being exported without any processing, leading to a **substantial loss of added value** for the country.
- By focusing on semi-processing cassava domestically, the company captures more value, **increasing profitability and competitiveness** in regional markets.
- Cassava's short-term yield allows for **quicker results and faster return** on investment.
- The model's large-scale approach not only empowers farmers by giving them equity and a sense of belonging but also generates **economic and political influence**, driving better terms for input prices and export deals.
- Soma Domnam's digital platform collects valuable real-time data from farmers, an under-exploited asset that holds significant commercial potential for **data-driven products and services**.
- Soma Group has both the skills and financial capacity to scale this operation, while the government benefits from **improved data management** and **infrastructure development**, fostering a more **resilient agricultural economy**.

Key Features:

- ✓ Organising farmers through communes into cooperatives.
- ✓ Engaging in the first stage of processing by coming together as cooperative.
- ✓ Purchase of inputs can be cheaper.
- ✓ Access to capital can be overcome.



Operations and Revenue Streams

Semi-Processing, Storage and Transportation

- Soma Domnam ensures warehouse storage solutions for both inputs and post-harvest cassava.
- The warehouse will also have semi-processing capacity to cut and dry cassava into chips.
- Cooperatives handle transportation to storage points while Soma Domnam ensures transportation to buyers.

Equipment Subleasing

- Soma Domnam subleases farming equipment from local provincial-level distributors, who also handle operations and maintenance (O&M).
- If the arrangement proves efficient, Soma Domnam may purchase the equipment in the future.

Input Supply

- Agricultural inputs such as fertilisers, seeds, and pesticides are partly sourced locally, while the majority are imported.
- These inputs are of the highest quality, ensuring their optimal use to maximise crop yields.

Income Streams

Revenue is generated through four key channels:

- Sale of cassava from farmers to local and international markets.
- Sale of agricultural inputs to cooperatives.
- Subleasing of farming equipment to cooperatives.
- Sale of data collected from cooperatives, alongside associated advertisements.



Infrastructure Development and Technology

Infrastructure Enhancement

The development of an **efficient irrigation system** is crucial to ensure consistent and reliable water supply for cassava production. This reduces dependence on rainfall and significantly enhances productivity. Soma Domnam will share the costs of irrigation infrastructure development with the government. Funding from other sources will also be explored.

Digital Platform

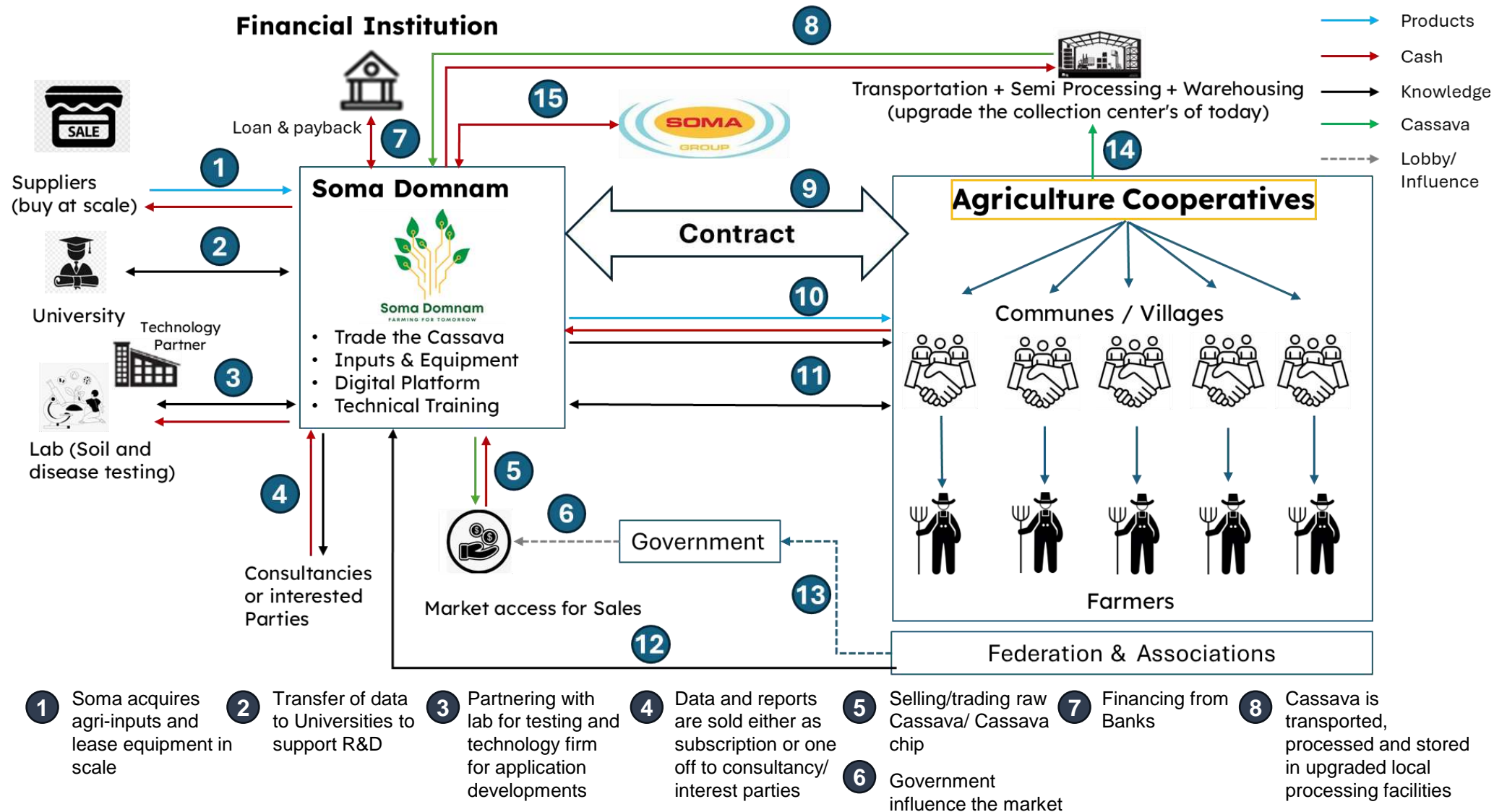
Through a digital platform, **high-quality agricultural data** can be accessed to enable farmers to make informed decisions on crop management and increase the government's capacity to plan, monitor and support the agricultural sector. The informative data will be free to access for farmers and the general public, offering valuable agricultural insights whilst digital products derived from real-time data would be sold to paying customers. Soma Domnam will partner with the Royal University of Agriculture (RUA) to publish free data and subcontract a software company to develop the digital product.

Training and Knowledge Sharing

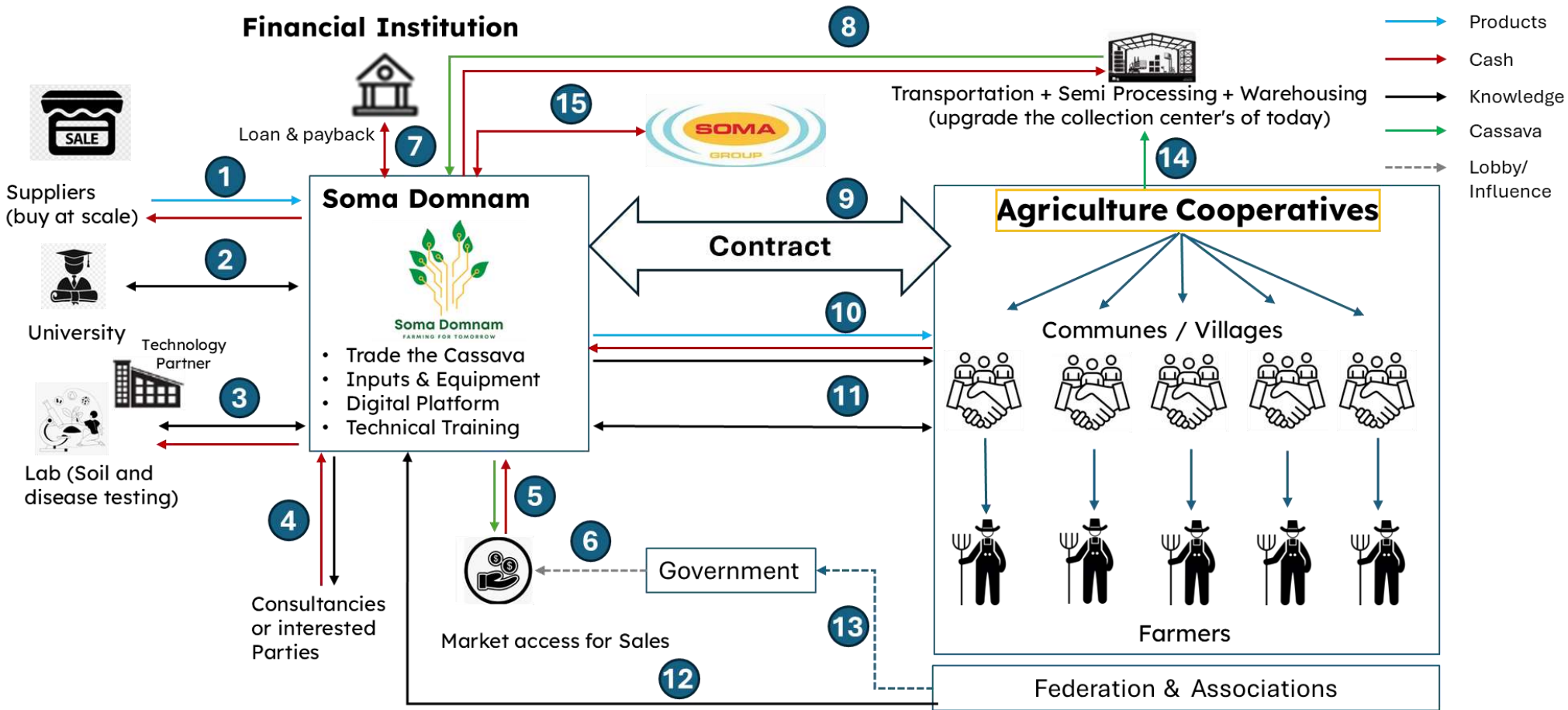
In collaboration with Federations and the RUA, the company will facilitate training and knowledge sharing for cooperatives, helping farmers adopt **best practices for sustainable and productive farming**.



Proposed Business Model (1/2)

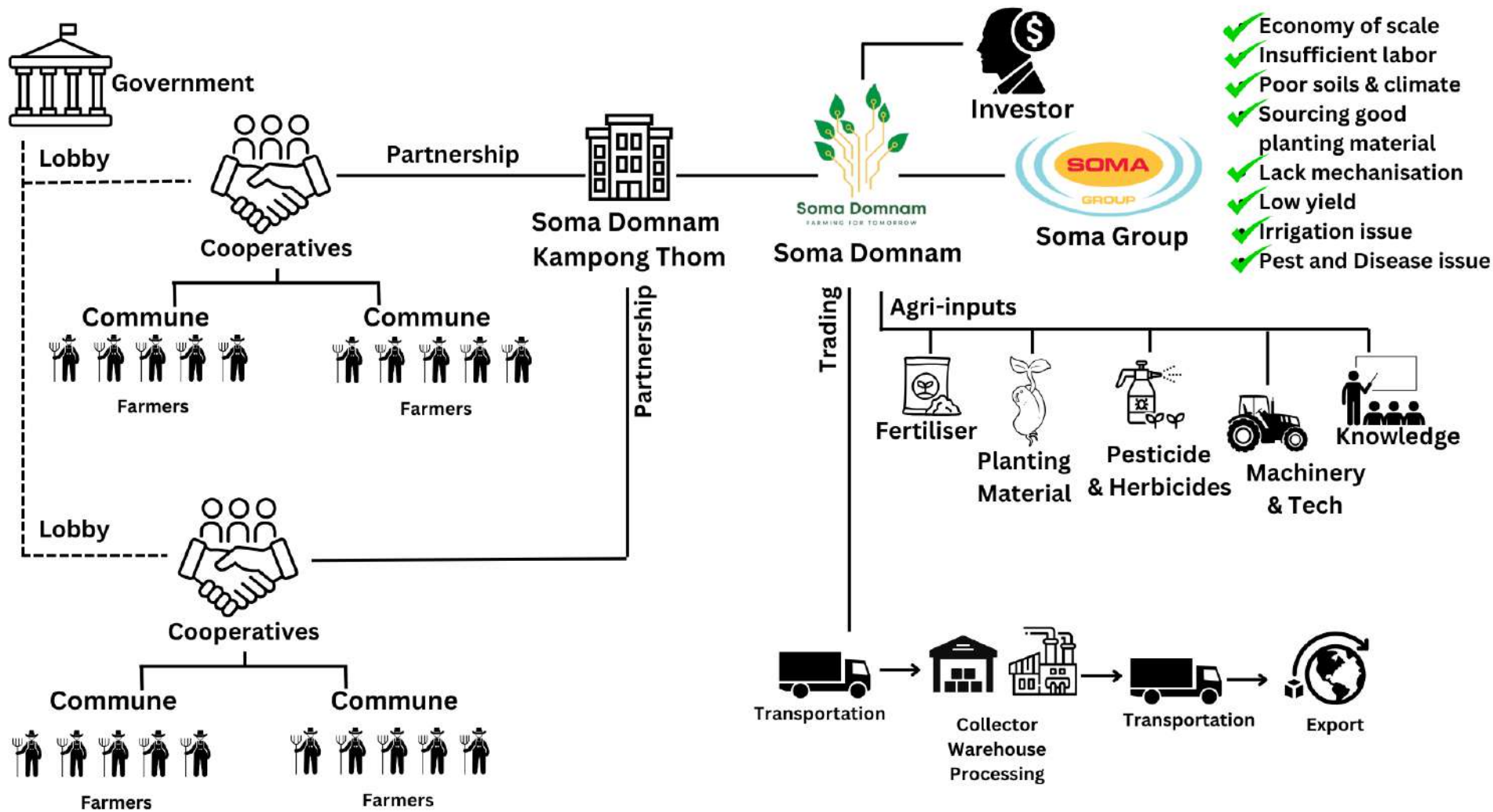


Proposed Business Model (2/2)



- 9** Soma DomNam sign agreement with the AC
- 10** Farmers get lower agri-input and leasing price through bulk purchase and knowledge transfer through the commune
- 11** Digital platform aggregates data for operation, quantity, quality and pricing
- 12** Training will be managed by Soma Domnam as a value added service at no charge supported by the federation and the government
- 13** Federation will lobby the government for policy that encourage the industry
- 14** Soma Domnam facilitates trade between cooperatives and existing collectors
- 15** The parent company Soma Group invests and oversees operations in Soma Domnam

Service Delivery Flow



Value Proposition (1/2)

Maximise Value

The advanced warehouse facility will store agricultural inputs and will have the facility to semi-process cassava (drying and cutting into chips) to extend the shelf life for up to 2 years. This strategic capability shields both the company from volatile market prices, enabling price control and stronger bargaining power. Transforming raw cassava into semi-processed products significantly increases its market value, making it more attractive to buyers.

Guaranteed Market and Fair Pricing

Raw cassava is purchased directly from the cooperatives, providing farmers with a guaranteed market for their crops, reducing uncertainty and financial risk. This direct relationship also allows for more transparent and fair pricing, empowering cooperatives and improving farmers' livelihoods.

Improved Productivity

Key agricultural inputs are sourced locally and internationally, to ensure farmers have access to the best quality resources. This balanced approach supports local economies while improving agricultural yield and reducing resource strain on local suppliers. The use of high-quality inputs leads to better crop performance, increasing farmers' incomes and reducing the economic risks associated with low productivity.

Socio-economic Empowerment

Farmers and cooperatives are given access to modern agricultural equipment through a cost-effective subleasing model. This reduces financial barriers for smallholder farmers and local communities, improving their ability to scale operations and increase productivity. Soma Domnam will manage logistics and storage, creating local employment opportunities and fostering a sense of ownership within communities.

Value Proposition (2/2)

Data-Driven Agricultural Insights

The digital platform provides farmers with a tool for agricultural data collection and agricultural mapping, to allow them to make more informed farming decisions. The data that is collected and mapped will be shared with the Ministry of Agriculture, Forestry and Fisheries to relay useful information back to the farmers and improve the agricultural sector through data-driven agricultural practices and improve productivity and sustainability of farms across Cambodia.

Shared Growth and Investment

Cooperatives will hold equity in the company, fostering a strong sense of partnership and shared success. This model encourages long-term collaboration and gives cooperatives a vested interest in the company's growth, aligning their incentives with Soma Domnam and driving mutual prosperity.

Capacity building and knowledge transfer

Free technical training will be offered in partnership with the Royal University of Agriculture and the Federation of Cassava, equipping farmers with the skills and knowledge to adopt modern, sustainable farming practices. This training enhances productivity, improves crop quality, and strengthens the long-term resilience of the agricultural sector, benefiting both the cooperatives and the broader community.

Strengthening governmental collaboration and oversight

Through the platform, the government will be provided with detailed data on crop production, land use, and agricultural trends. This enables better policymaking, land management, and food security planning, helping the government track agricultural progress and implement more effective support measures. Additionally, collaboration with agricultural cooperatives supports the government's efforts to promote local economic growth, community resilience, and sustainable agricultural practices.

Shareholding Structure of the Company

The suggested shareholder structure presented in this report is dependent upon details to be negotiated.

Governance and Decision-Making

The company will have a Board of Directors composed of representatives from Soma Group, cooperatives, and investors. Profits will be distributed based on the equity stakes.

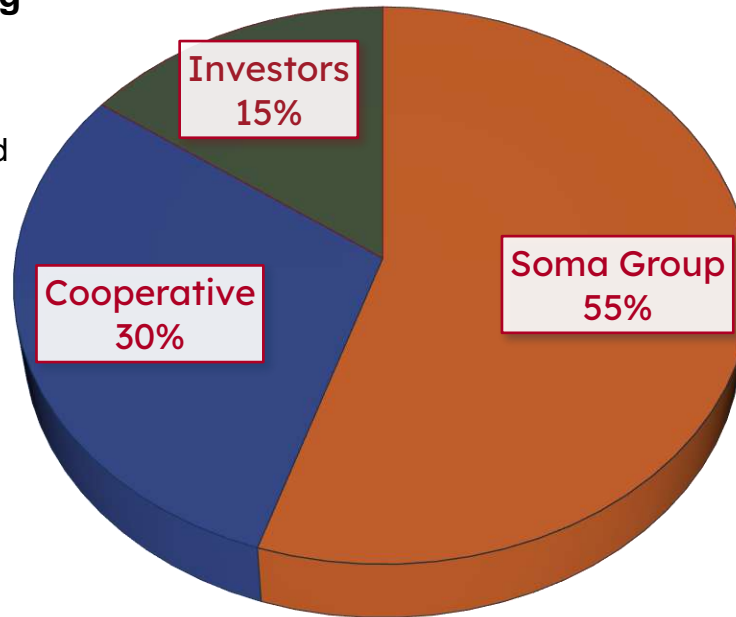
External Investors (15%)

Investors may bring strategic value beyond capital, such as expertise in infrastructure development, technology, or government relations. They will likely have advisory roles, with voting rights in proportion to their equity stake.

Cooperatives (30%)

The cooperatives will own 30% of the company as sweat equity, giving farmers a meaningful stake in the business. This fosters a sense of ownership and belonging, encouraging their active participation and commitment to the success of the company.

- **Dividends:** Farmers, as cooperative members, will earn dividends based on the profitability of the business. This provides them with both short-term income from their cassava sales and long-term financial returns as equity holders.
- **Participation:** The cooperatives will have representation on the company's board, ensuring that the interests of the farmers are considered in decision-making processes.



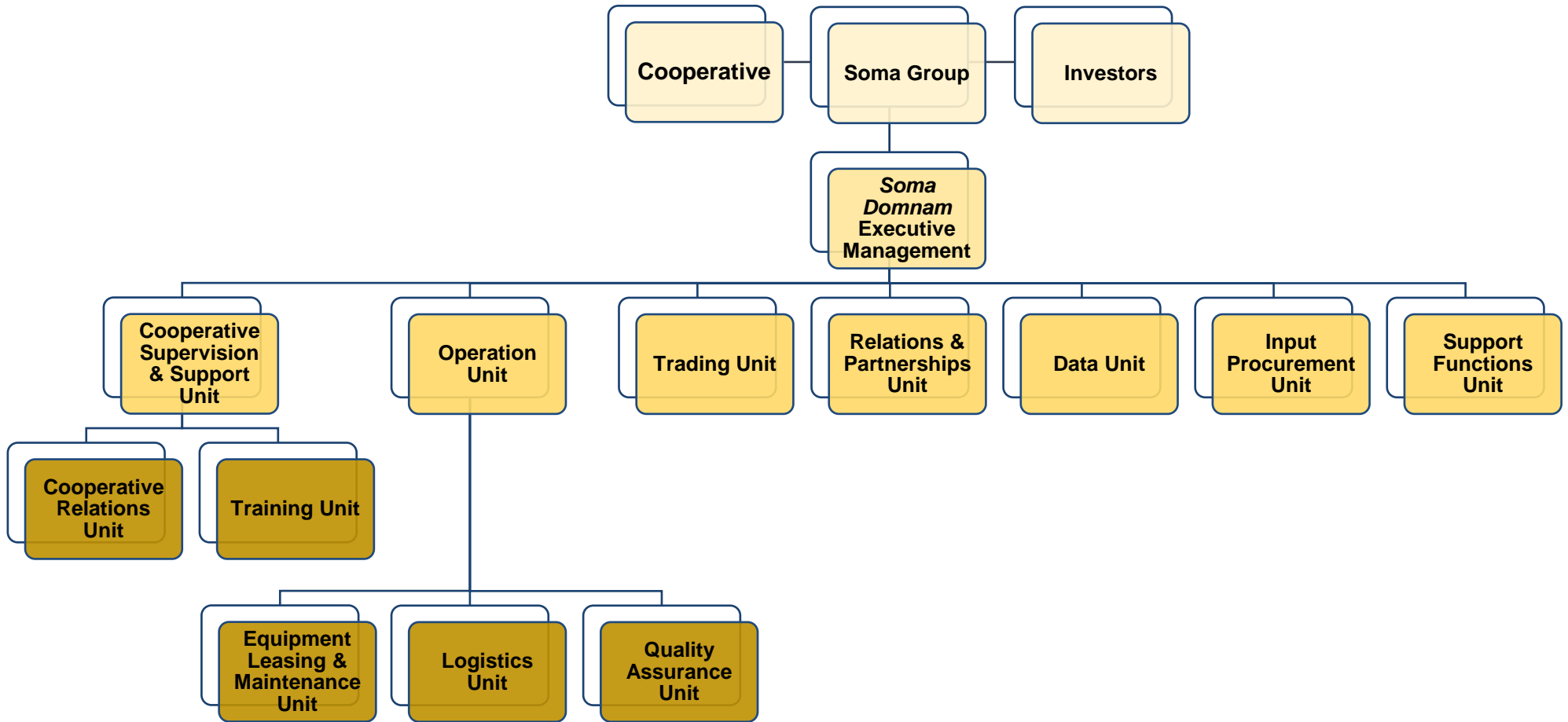
Soma Group (55%)

Soma Group holds the majority stake, controlling 55% of the new company. This reflects Soma's leadership role in managing operations, providing capital, and driving the overall business strategy.

As the majority shareholder, Soma Group will oversee the key aspects of the business, including procurement of agricultural inputs, equipment leasing, managing the digital platform, and building relationships with external stakeholders such as the government and private investors.

Farmers' ownership in the company is structured as sweat equity.

Organisational Structure of the Company



Soma Group will oversee the management of the company exclusively, leveraging its majority shareholder position to guide strategic decisions and ensure alignment with its objectives.

Organisational Units and their Functions (1/2)

1. Executive Management of Soma Domnam

- Sets overall vision and strategy to ensure interests of farmers, the Group and investors are protected.
- Oversees daily operations and ensures strategic alignment.

2. Cooperative Supervision & Support Unit

- **Cooperative Relations Unit:**
 - Guides cooperatives on organisational structure and communication.
 - Serve as contact points between the company and farmers, allowing cooperatives to manage their own activities like crop calendars.
- **Training Unit:**
 - Coordinates technical training programs.
 - Collaborate with the Royal University of Agriculture and the Cassava Federation to provide free training to cooperatives.

3. Operation Unit

- **Equipment Leasing & Management Unit:** Handles leasing agreements with local agricultural equipment distributors and ensures equipment is maintained and operational for cooperatives.
- **Logistics & Transportation Manager:** Ensures efficient processing, drying, cutting, and storage of cassava and manages the transport of cassava products.
- **Quality Assurance Unit:** Ensures that all cassava purchased from cooperatives, as well as the semi-processed products, meet the standards for quality, consistency, and suitability for storage and export.



Organisational Units and their Functions (2/2)

4. Trading Unit

- Manages the buying and selling of cassava ensuring smooth transactions between cooperatives and international markets.
- Negotiates purchase agreements with cooperatives and coordinates the logistics and transport with the Operation Unit.
- Identifies new market opportunities and monitors market trends and pricing to secure favorable trade deals.

5. Relations & Partnerships Unit

- Builds and manages relationships with government bodies
- Explores public-private partnerships, and secures funding from development agencies, banks, and NGOs to support infrastructure projects and other strategic initiatives.

6. Data Unit

- Oversees real-time data collection from cooperatives.
- Process and analyse collected data.
- Sells reports and derived products to data customers.

7. Input Procurement Unit

- Buys inputs (fertilisers, seeds, pesticides/herbicides) in bulk and manage distribution of inputs to cooperatives.

8. Support Functions Unit

- They include Finance & Accounting, Human Resources, Legal and Compliance, Information Technology and other units supporting the core business of the company.



Agriculture Cooperative Functions (1/2)

The agricultural cooperative will play a key role in the cassava production value chain by serving as the liaison to communicate between the company and farmers and facilitating efficient operations and enhanced productivity.

Key Roles and Responsibilities:

Cassava Production and Harvest

- Manages farming activities, including crop calendars and day-to-day operations.
- Manages the distribution of inputs such as cassava seeds, fertilisers, and pesticides from the company to farmers.
- Handles and coordinates the transportation of harvested cassava from farms to storage points.
- Conducts quality control to ensure harvested cassava meets required standards from the company.
- Facilitates the agricultural machinery allocation and technical knowledge transfer.
- Provides ongoing support and guidance to farmers for optimising production techniques.

Digital Platform and Data Collection

- Facilitates implementation of digital solutions provided by the company and ensures farmers adopt them effectively.
- Ensures the collection of real-time data resulting from all the activities of the cooperative.

Farmer Training

- Coordinates with farmers on the delivery of training programs on best practices in cassava cultivation and input usage.

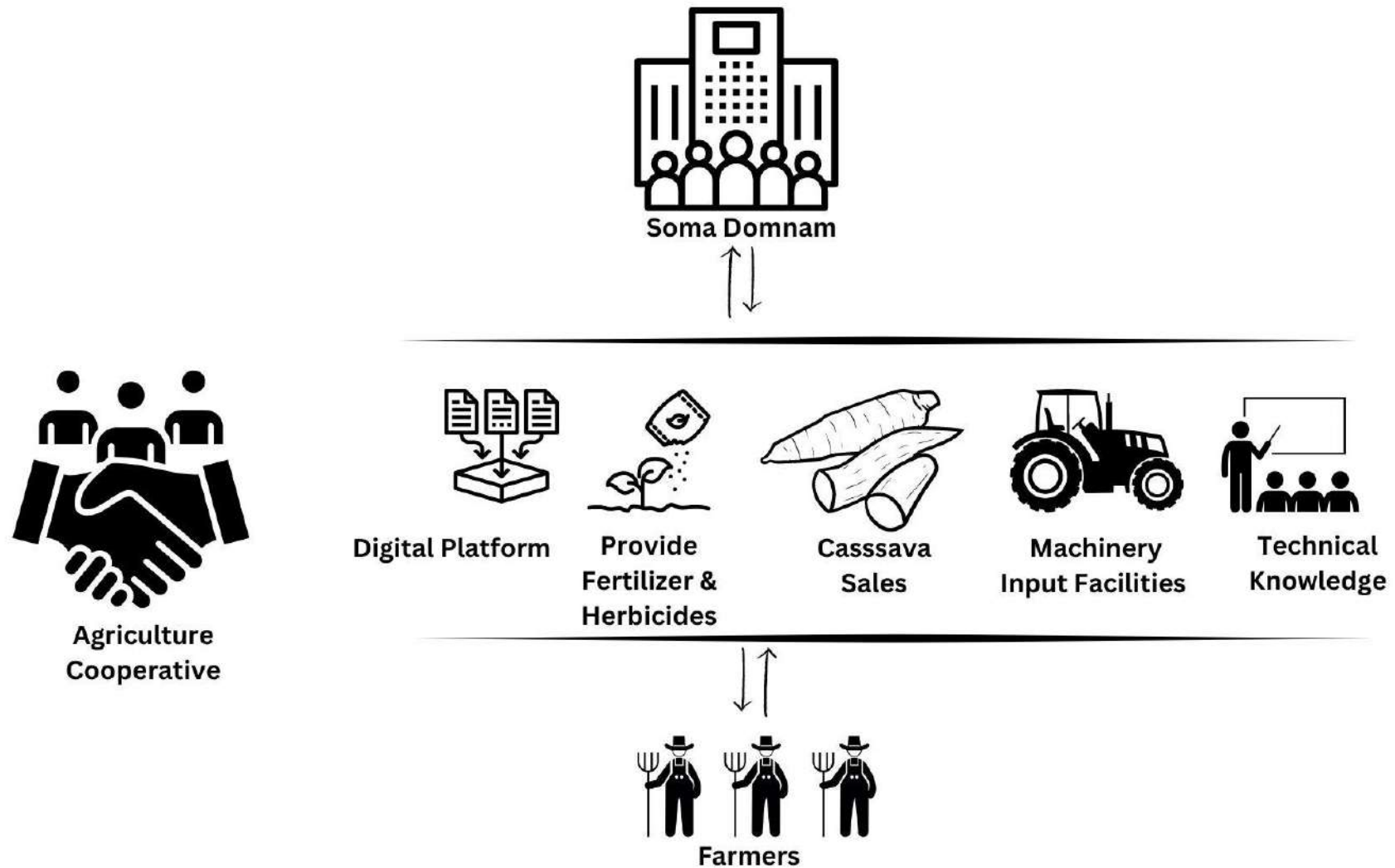
Lease Equipment: Record Keeping

- Maintains and reports various records to the company such as input distribution, training sessions, and production metrics.

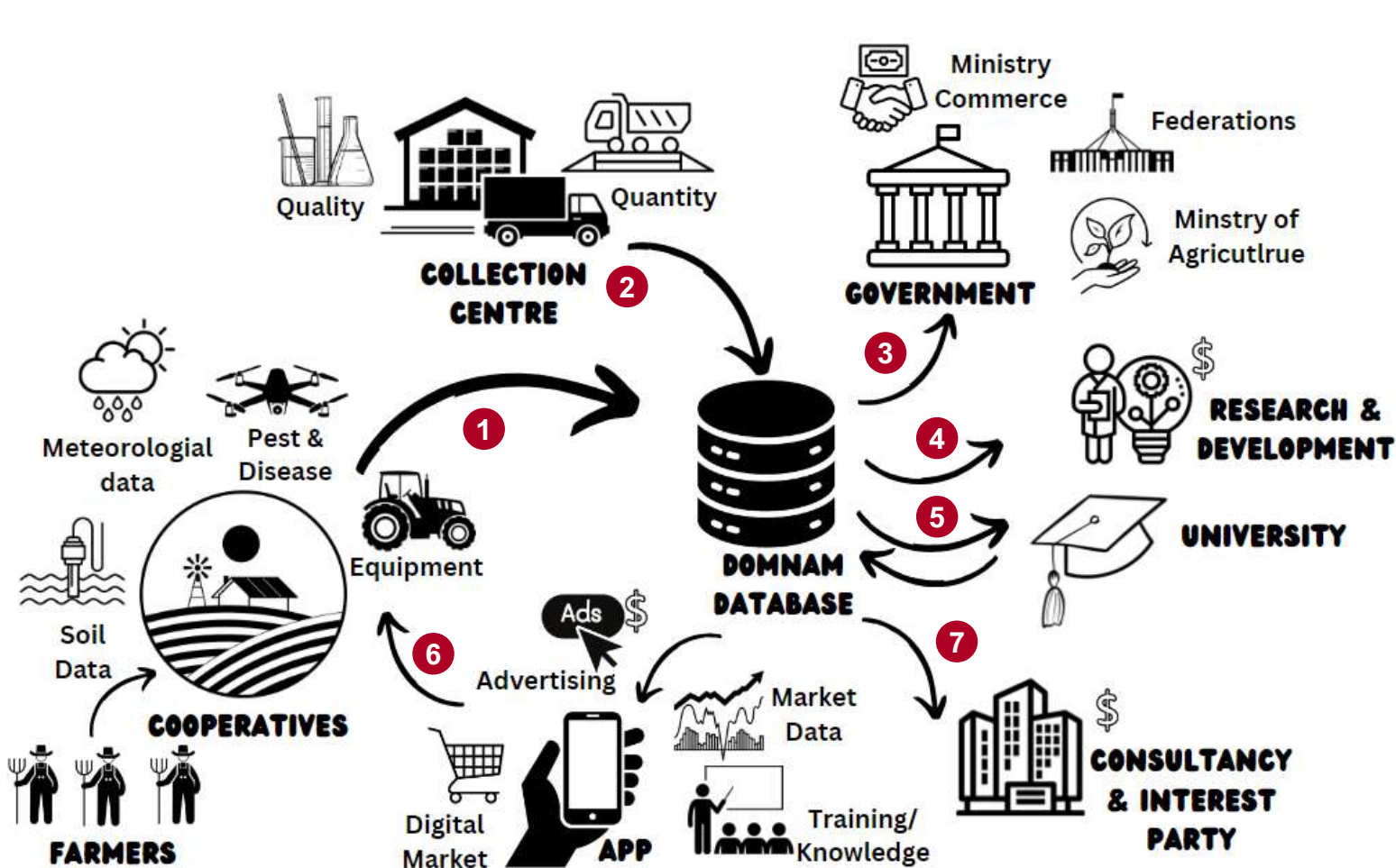
Financial Transactions

- Handles financial transactions related to profits and dividends distribution.

Agriculture Cooperative Functions (2/2)



Soma Domnam Digital Platform Data Flow



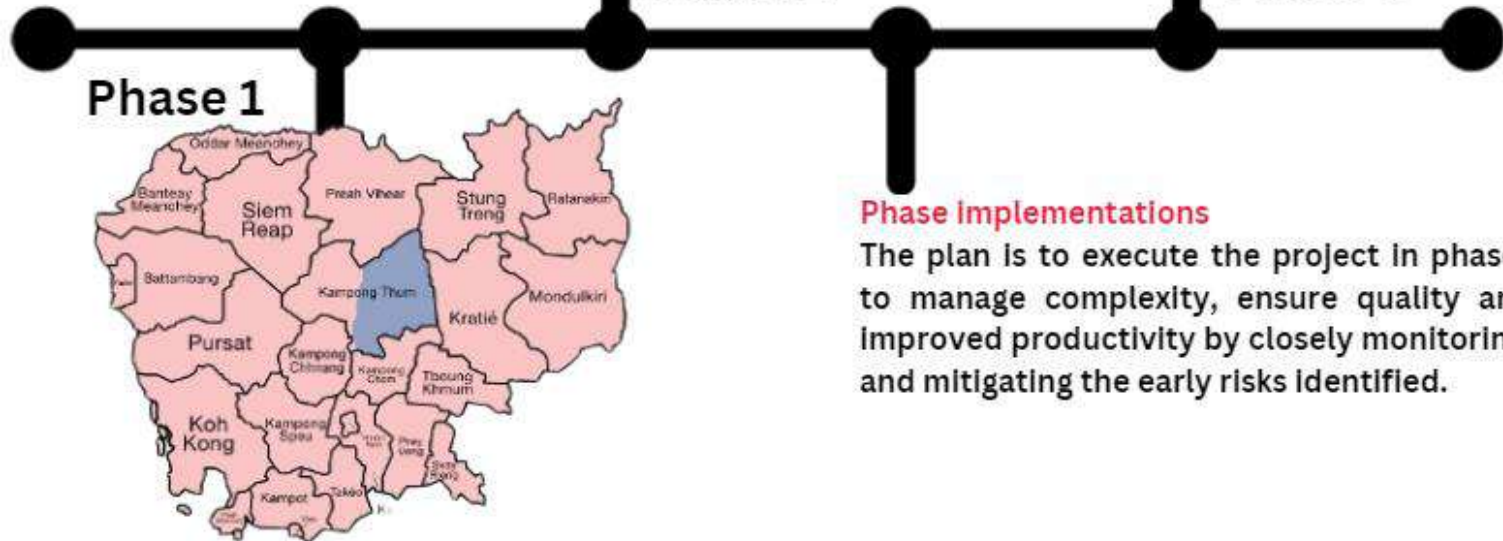
- 1** Agri data are collected from the farm.
- 2** Quantitative and qualitative data are collected from the collection centres of the company.
- 3** Data can be fed to the government such as the ministry of commerce and agriculture
- 4** Research and development partnerships also contribute and utilise data from the database.
- 5** Research findings are shared for improvement and used for further research.
- 6** Phone application to access market data, training and digital market for procurement.
- 7** Sales of report and data to consultancy and parties of interest.

Implementation Plan

The **pilot project** is carried out for these purpose:

1. Gain trust from the communes
2. Allow course correction
3. Gain yield improvements through good agriculture practice

Pilot Project



Phase implementations

The plan is to execute the project in phases to manage complexity, ensure quality and improved productivity by closely monitoring, and mitigating the early risks identified.

Implementation Plan – Phases 1-3



Phase 1 - Kampong Thom province is selected as part of phase 1 rollout because it has a sizeable land and 60% land used for agriculture. There are 12 districts managed by 73 communes covering 765 villages. Soma Group has access to a 3,000-hectare cassava farm which allows lower start up cost. 4 main districts of Kampong Thom is selected initially (Prasat Balank, Prasat Sambo, Sandan and Santouk). Estimation of 50% participation will lead to involvement of 380 villages. Estimated 60% of participation will lead to 15,000 hectares of land with cassava plantation. Population covered being 254,719*. **As part of pilot phase Soma DomNam will start with 2,000 hectares of its own cassava plantation in year zero.**



Phase 2

Target for Phase 2 implementation is the entire province of Kampong Thom which amounts to 62,411 hectares with total population of 675,400*. With an expected participation of 60% the objective is to cover 37,200 hectares.

Phase 3

Target for Phase 3 will be to cover Battambang and Tbong Khmoum provinces due to their large hectarage, fertile soil and proximity to relevant exporting countries such as Vietnam & Thailand. Population coverage is 1,744,063*. With an expected participation of 75% the objective is to cover 182,000 hectares.

* Population data : General population censuses 2019





Operations

Key Pillars of Operations

Productivity Increase

Through **training** and **information**, access to **high-quality inputs**, and **mechanisation**.

Quality Assurance

Developing **quality mindsets** with **quality inputs** and providing **technology and knowledge** to the farmers on how to achieve higher quality output.



Cost Effectiveness

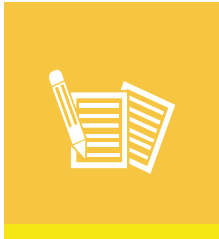
Through **bulk purchasing** and a stable **supplier chain** with Soma Domnam, whilst combining new **data solutions** to help farmers reduce costs and wastage.

Farmer Welfare

Higher safety and **yield** with **mechanisation**, leading to **higher income**.

Achieving the 4 objectives through efficient operations is critical to the success of the business model

Overview of Operation System



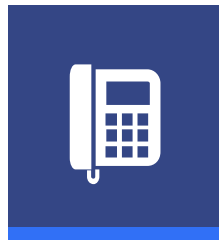
Trading System

- Demand Forecast
- Price Forecast
- Negotiate Prices



Logistic System

- Leverage the network
- Cost effective
- Timely



Purchasing System

- Bulk Purchase
- Inventory planning



Data System

- Digital data platform
- Soil data
- Weather forecasts
- Farm' inputs
- Price information
- Training Materials
- Farm Management



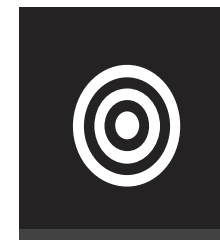
Mechanisation System

- Setting up lease program
- Maintenance of machines



Training System

- Develop training material
- Schedule programs
- Ensure outreach

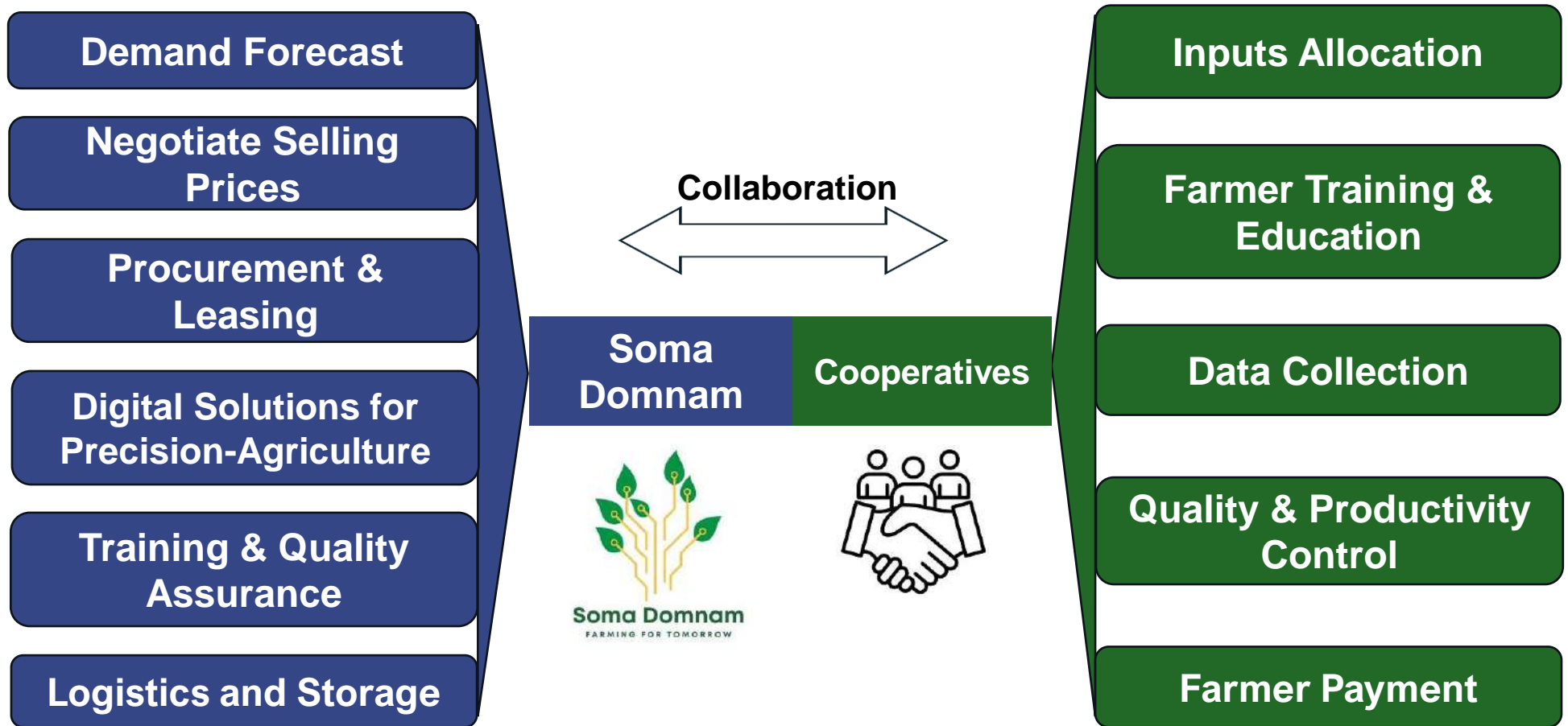


Quality System

- Quality standard
- Quality Check
- Quality Assurance

7 supporting sub-systems to ensure operation system excellence

Roles of Soma Domnam and the Cooperatives



Collaborative working between Cooperative and Soma Domnam will ensure everyone benefits.

Trading System

1. Planning and Negotiation

Soma Domnam and cooperatives will collaborate to plan production and to negotiate pricing.

2. Demand Forecasting

The Soma Domnam sales team will forecast regional and international market demand, harvest calendar, and pricing based on local and global market data.

3. Data Sharing and Transparency

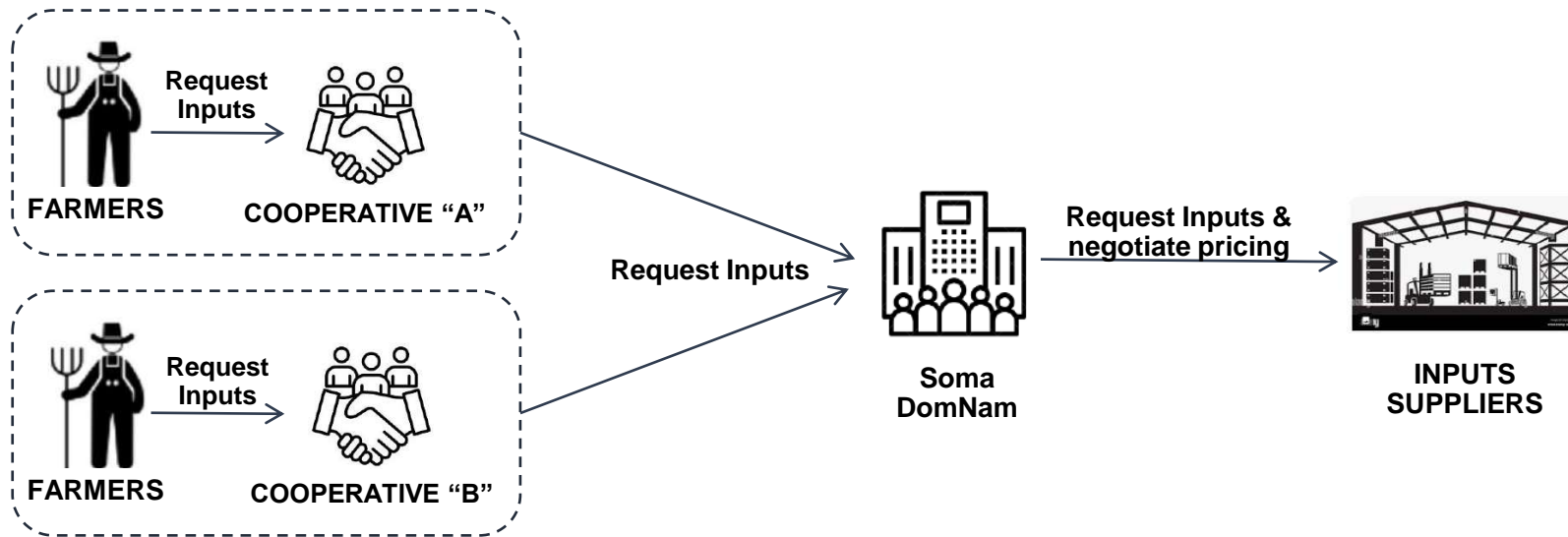
Current and historical data will be accessible to cooperatives and farmers, enhancing transparency to build up trust and in determining offtake prices and resource requirements.

Soma Domnam and Cooperatives will also collect and share resource demands from farmers.



Export trading will be significantly increased by high volume and reliable quality product.

Purchasing System



1. Farm inputs and data collection

Cooperatives will collect data from farmers on their farm inputs requirements (seeds, fertilisers, pesticides). This data will be fed into the digital platform, creating a clear picture of what farm inputs are needed across the cooperatives.

2. Economy of scale: Bulk purchase

Based on the collective demand from the farmers, Soma Domnam will be able to coordinate bulk purchases of farm inputs and negotiate purchase price with suppliers including delivery to Soma Warehouse. Bulk purchasing will ensure cost savings through economy of scale, reducing the input costs for farmers.

Cooperatives collect input data for bulk purchasing through Soma Domnam

Logistics System

- Suppliers deliver agricultural inputs to Soma Domnam's warehouse.
- Soma Domnam will deliver agriculture inputs to the cooperatives who will allocate the resources to the farmers as appropriate.
- Post harvesting, farmers will deliver their produce to Soma Domnam's warehouse.
- Soma Domnam will be responsible for transporting harvested products to the buyers.
- Soma Domnam's warehouse will have a storage space for both agricultural inputs and for post-harvest and post-processed cassava, and facilities for cutting and drying.



Efficient and responsive logistics to farmers' cooperatives at low cost.

Mechanisation System

- Farm mechanisation is crucial for boosting agricultural productivity with timely and precise fieldwork.
- Current access to mechanisation and technology for farmers is limited, resulting in extensive manual labor with difficult working conditions.
- In this proposal, Soma Domnam supports cooperatives and the farmers by facilitating leasing options for agricultural technology and equipment such as drones, ploughing machines, etc. at competitive prices. This approach, combined with the organisation of cooperatives, will enable farmers to benefit from improved working conditions and increased productivity.



Improved access to agricultural equipment resulting in increased productivity.

Quality Assurance System



A quality assurance system must be established among farmers and cooperatives to ensure high quality product that results with higher sales price.

Quality control involves:

- Managing the seed selection process to maintain quality.
- Product price is defined by quality of the product.
- Define quality standard especially for key processes and incorporate this information into a farmer training program.
- Using IoT technology to ensure the quality for seed improvement, soil analysis, crop growth monitoring, disease detection and more.
- Performing quality check during product collection from farmers and cooperatives.



Quality assurance to ensure the reliability and safety of agricultural products.

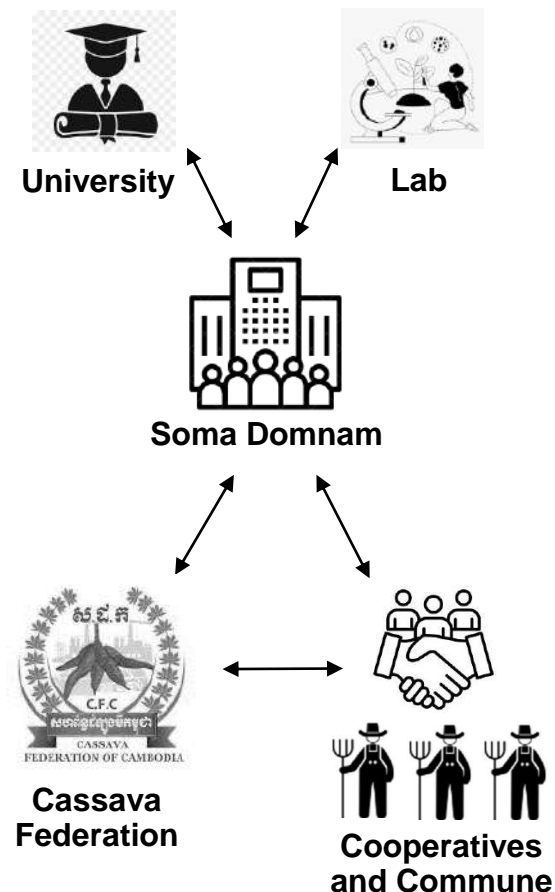
Training System

Partnership with federation and university

- Soma Domnam will collaborate with cassava federation and universities to deliver educational and training programs that include on field and classroom training.

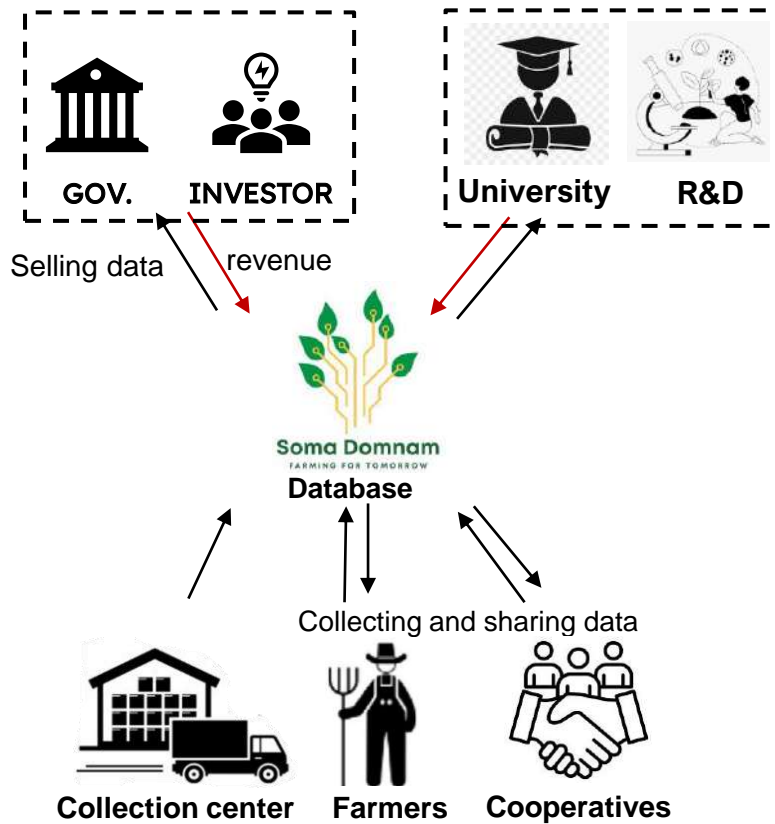
Key training & education activities

- Key training topics will include soil management, input and resource management, product care monitoring, and data utilisation.
- Training coordinator will be assigned to oversee cooperatives and farmers requirements in collaboration with the federation, ensuring that training programmes adhere to standards.
- The cassava federation will organise training sessions for cooperatives and farmers, while also expanding the training approach through the use of digital apps and social media.
- Through the cooperatives, Soma Domnam will further ensure that farmers implement all standard practices and maintain product care. This will guarantee that the quality of post-harvest produce meets quality standards.



Education & Training are essential to improving farming practices.

Data System



1. Collaboration and Technology Implementation

Soma Domnam collaborates with digital technology companies and academic institutions to deploy IoT smart farming solutions that leverage sensors for efficient data collection, storage, and analysis.

2. Data Leverage and Monitor

This technology encompasses soil monitoring and data recording aimed at disease prevention and yield enhancement, gathering critical information on soil conditions, weather patterns, pests, and equipment for informed decisions.

3. Revenue Generation and Profit Sharing

Soma Domnam plans to sell data and reports to interested stakeholders, channeling the generated revenue back to farmers to boost their profitability.

Soma Domnam leverages farming data to enhance farming productivity, quality, and profits through data platform.



Policy and Partnerships

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Enabling Policies

Enabling Policies are critical to the increase in the productivity of Cassava by leveraging **Technology and Infrastructure**, **Sustainable Farming Education and Access to Credit**. The following Policy Recommendations will enable Soma Domnam and others in the agriculture sector to work alongside the government and other key stakeholders to improve farmer welfare.



Irrigation

Infrastructure policy is needed to support sustainable growth and enhance agricultural productivity - through building community-based Irrigation Systems in the assigned areas.

See p.58



Finance & Economy

- Introduce **Minimum Support Price (MSP)** to stabilise farmers' income.
- **Tax breaks and incentives** for farmers investing in smart technology to encourage adoption of technology in the agriculture sector.

See p.59



Sustainability

- **Sustainable agriculture policy including a ban** on open burning
- **Incentives / subsidies** to motivate farmers to purchase eco-friendly inputs.
- **Enhancing farmer knowledge** and practices through disseminating information.

See p.60

Infrastructure and Irrigation Systems

Policies to achieve sustainable growth and enhanced productivity of agriculture produce is recommended, in addition to the installation of an efficient irrigation system involving water bodies (reservoir), in partnership with Soma Domnam, thereby allowing multi-cropping all year around and improving the livelihood of farmers.

Policy recommendations:

- Reservoirs to be created at cooperative level wherever there are farmers exceeding 25,000.
- This would be a collaboration between the cooperative and the government.
 - Land will be provided by the cooperative towards their contribution where land is not available with government.
 - Government will invest on the capex required for establishing the reservoir.
 - Cooperative will provide labour for establishing the reservoir
 - Canal system to be created for distributing water from reservoir to farmlands.
 - Farmer can pump the water from the canals to their farmlands and use water effectively through drip irrigation systems and/or sprinklers.



Effective Irrigation System to Improve Productivity and Quality of Cassava

Financial & Economic Policies

The following lists the proposed financial and economic policies that may be implemented by the government to promote the growth, stability and sustainability of the agriculture sector by providing financial support, improving market conditions and fostering economic development of farmers.

Policy recommendations:

- **Minimum Support Price (MSP)**

Government to introduce MSP for Cassava, ensuring farmers receive a guaranteed price protecting them from market fluctuation.

- **Funding and Tax**

Tax breaks and incentives to be offered to financial institutions investing into agricultural projects, and to companies/farmers buying smart technology. These incentives will include interest exemptions on agricultural loans of farmers and subsidies for rural infrastructure development agencies.

- **Financial Inclusion and Digital Solutions**

Promote usage of digital financial tools enabling farmers to access credit and receive subsidies more efficiently. Government and private sector to collaborate and create financial platform for farmers providing access to real-time market prices, loan products and insurance.



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Fuelling Economic Growth through Financial Policies

Sustainability Policies

To promote environmentally responsible farming practices and ensure long term productivity, conservation of natural resources, protection of ecosystems and reduction of health hazards, the following sustainability policies are proposed.

Policy recommendations:

- **Soil Conservation and Health**

Ban on open burning of crops and other wastes whilst promoting recycling of organic waste such as using crop residues for bio energy, composting organic waste and turning animal manure into biogas.

- **Pesticide and Chemical Fertiliser Reduction**

Supporting integrated pest management strategies that combine biological controls, crop monitoring and minimum use of chemical inputs to reduce environmental and health impacts.

- **Eco-friendly Inputs**

Through incentives or subsidies, promote the use of organic fertiliser and herbicides as alternatives to chemical inputs reducing the negative impact on soil, water and biodiversity.

- **Water Conservation**

Drip Irrigation System to be installed at farmland through subsidy from the government for efficient use of water.

Use of sprinklers to distribute water evenly, reducing runoff and ensuring that water reaches the crops efficiently.



Recommended Partnerships

Through strategic partnerships, Soma Domnam aims to work alongside the government and other key stakeholders to improve farmer welfare by leveraging technology, education and data-driven farming.



Finance

- Partner with **financial institutions** to improve access to credit for farmers and communes.
- Partner with **insurance companies** to provide crop insurance to agricultural cooperatives to improve social security for the farmers.
- Partner with the **government** to finance infrastructure development for improved farming productivity and to finance R&D efforts in the agricultural sector.



Smart Farming

- Partnerships with **agritech companies** and **R&D groups** to develop a digital farming management platform with precision agriculture capabilities.
- Partner with the **government, agricultural cooperatives, federations** and organisations to promote the use of Technology (Digital & Otherwise) and introduce Smart Farming Techniques.
- Partner with the **government** and **technology companies** to create a Geographical Information System to enhance productivity.



Market Intelligence & Information Dissemination

- Partner with **financial institutions** to create a digital ecosystem that allows farmers access to Market Information.
- Partner with **federations/associations** and **farmer organisations** to facilitate information dissemination, knowledge sharing and training/education on better farming practices.
- Partner with **knowledge partners** to provide disease management, soil health analysis and weather information to farmers.

Key Stakeholders and Partnerships

Category	Key Roles / Value Proposition
Governmental Agencies	<ul style="list-style-type: none"> - Implement policies to support the agriculture sector - Provide tax incentives, public financing and public service investment - R&D and water resource management - Assist in trading and export
Federations/Associations	<ul style="list-style-type: none"> - Advocacy and lobbying - Knowledge sharing and training - Funding support and investment facilitation - Buy/Sale facilitation and aggregation
Farmer Organisations	<ul style="list-style-type: none"> - Economics of scale-bulk purchasing and shared resources - Improve productivity and quality - Access to markets - Technical assistance and training
Knowledge Partners	<ul style="list-style-type: none"> - Precision agriculture with ICT solution system - Providing farm management software to include data driven technology - Disease management and control - Soil management and weather data
R&D Partners	<ul style="list-style-type: none"> - Conduct research and knowledge sharing through training - Enable sample generation and analysis/testing in the lab - Gather and provide long-term data overview - Produce independent policy-relevant input
Financial Institutions	<ul style="list-style-type: none"> - Access to micro finance for small farmers - Long-term finance to realise the investment in agricultural infrastructures
Crop Insurance	<ul style="list-style-type: none"> - De-risking weather related threats and natural disasters - Social Security for Farmers



Financial Analysis and Investment

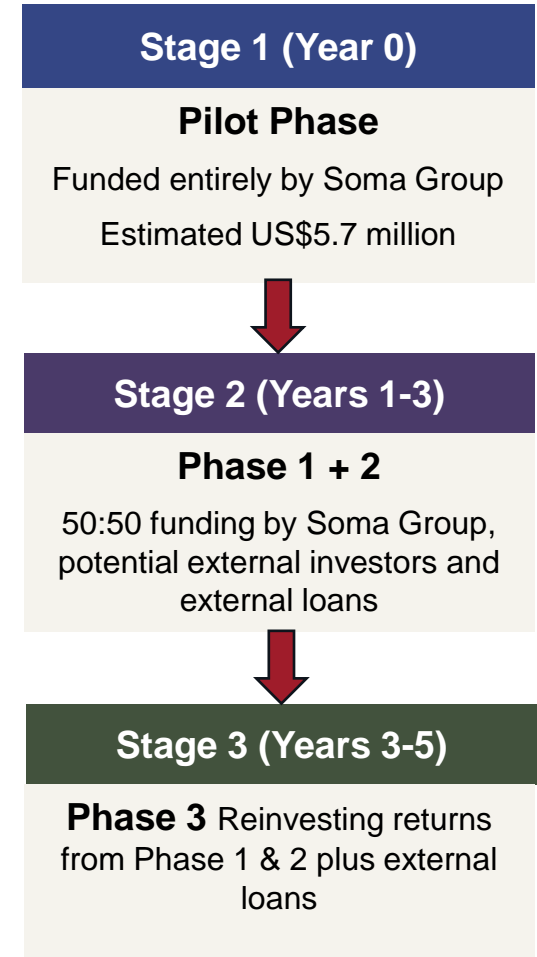
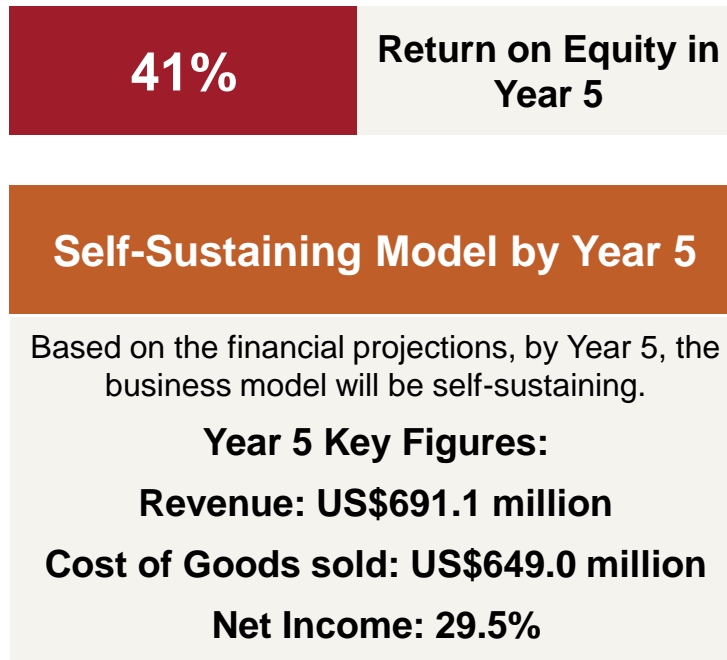
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Key Financial Summary

The launch of Soma Domnam presents an excellent opportunity for investors who would like to create a significant impact on improving the livelihood of Cambodia small cassava farmers.

The financial projections are based on a conservative **3-stage funding** model.

The financial calculations and key assumptions are that net cash is reinvested to prioritise minimisation of external loans. The financial projections may be adjusted based on the potential for distributing dividends to farmers through the cooperatives.



Financial Analysis

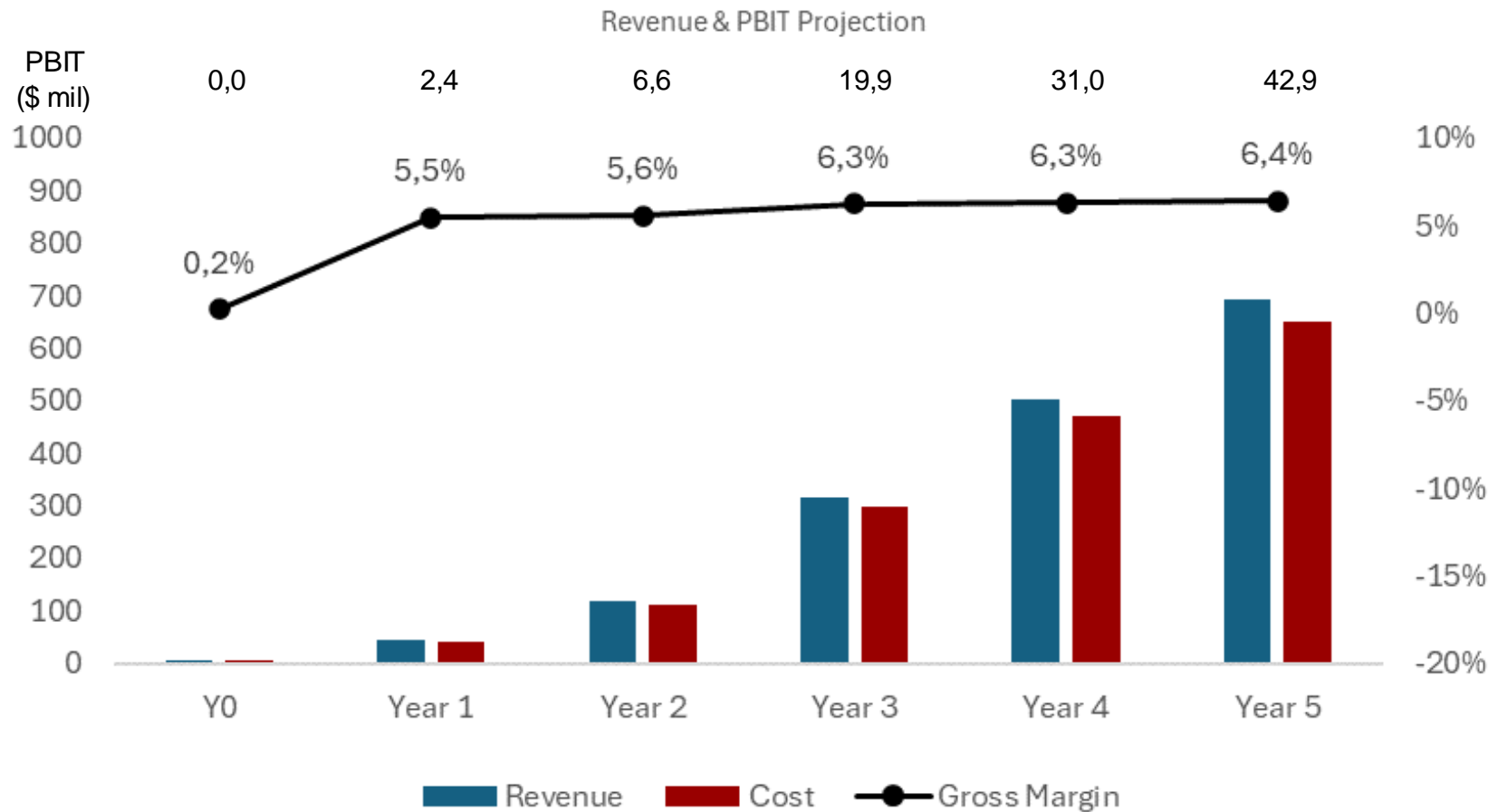
Assessment Year: 6

- This section includes the base case financial projections for the first 6 years including Year 0 pilot period.
- Company will require an initial equity investment from Soma Group and potential external investors of US\$ 5.7 mil to cover Capital Expenditure, including software system development, warehouse and irrigation system and initial working capital requirement. Future investment will be funded through internal accruals and external loans.
- The Business will have a Net Present Value (NPV) of US\$ 30 mil, assuming 10% weighted average cost capital (WACC).
- The following could be considered for implementation and will require further assessment to execute:
 - Introduce an insurance scheme to protect the interest of stakeholders in the event of unforeseen circumstances.

Key underlying financial assumptions are highlighted in the following pages.

	Metrics	Result
Investors	Total CAPEX investment	\$101.9mil
	Initial Shareholder Equity	\$ 5.7 mil
	Net Present Value (by Phase 3)	\$30 mil
Business Stakeholders	Accumulated Gross Margin	6.1%
	Accumulated Net Profit	\$66.7 mil
	Return on Equity at Year 5	41%

Revenue & PBIT Projection



The gross margin reaches 5.5% in Year 1 and increases to 6.4% by Year 5.

Key Assumptions

Revenue Assumptions

- **Cassava Trading**
 - Cassava collected from the cooperatives are assumed to be sold at a **fixed margin rate of 20%** to the buyer.
 - Base Case (conservative): 50% dry cassava sales and 50% fresh cassava sales
 - Selling Price for Cassava:
 - Dry: \$225 per ton; Fresh: \$90 per ton;
 - Wastage:
 - Dry: 55%; Fresh: 15%
- **Inputs Sales**
 - Selling price to cooperatives will be at a 10% mark-up on the bulk-purchase rate from the inputs supplier.
 - Equipment, such as drones together with operators, will be offered to cooperatives on an operating lease arrangement, at the rate of US\$16.5 per HA.

Ancillary Services Income

- Data as a Service: US\$10,000 per year
- Advertising Income: US\$150,000 per year

Scale of Operations

- Business will kick off with a Pilot on Soma Group's cassava farm of 2,000 HA in Province Kampong Thom in Year 0. With successful concept validation, in Year 1, project will roll out to the rest of Province and gradually expand into the other 2 provinces Battambang, which is next to Thailand and Tbong Khmum, which is next to Vietnam, with the aim to scale it to 182,000 HA by Year 5.

HA	Y0	Y1	Y2	Y3	Y4	Y5
Land Area	2,000	15,000	37,000	92,250	135,000	182,000

- At the same time, yields per HA are assumed to increase gradually with the introduction of more optimised fertiliser and herbicide application, with conservative estimate below. (Current average yield: approximately 20 tonnes per HA.)

Per HA	Y0	Y1	Y2	Y3	Y4	Y5
Yields	22	24	26	28	30	30

Key Assumptions

Cost Assumptions

- Inflation rate : 2.3%
- Manpower increment rate: 5%
- Manpower Cost (base case from Yr 0)
 - CEO : \$4,500 per month
 - Manager: \$1,500 per month
 - Agronomist: \$900 per month
 - Worker: \$300 per month
 - Operator: \$400 per month
- Digital System annual maintenance cost: \$240,000
- General & Administrative Cost : 2% of Sales
 - This includes logistics costs such as transport, trucks, diesel etc.
- Marketing Cost : 1% of Sales
- Contingency: 1% of Sales
- Corporate Income tax rate: 20%

Investment

Pilot CAPEX (US\$)

- Digital Platform Development: \$200,000
- Warehouse-Land: \$35,000 per unit
- Warehouse-Building: \$560,000 per unit
- Irrigation System: \$512,000 (50% share with Government)

Phase 1-3 CAPEX

- Digital Platform Development: \$1,000,000
- Warehouse-Land: \$35,000 per unit
- Warehouse-Building: \$560,000 per unit
- Irrigation System: \$512,000 per unit (50% share with Government)
- Office Equipment: \$10,000

Capacity

- Warehouse : 2,000 HA land
- Irrigation System: 2,000 HA land

	Yr0	Yr1	Yr 2	Yr 3	Yr4	Yr 5
# of Warehouses	1	8	19	46	68	91
# of Irrigation System	1	8	19	46	68	91

Income Statement Projection

<i>Mill USD</i>	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	5.5	43.9	118.2	317.1	501.0	691.9
Cassava	3.9	32.8	90.2	246.4	395.2	545.8
Inputs Sales	1.4	11.0	27.8	70.6	105.7	145.9
Lease rate	0.0	0.0	0.0	0.0	0.0	0.0
Services Sales	0.0	0.0	0.0	0.0	0.0	0.0
Advertising Income	0.2	0.2	0.2	0.2	0.2	0.2
Cost of Goods Sold	-5.5	-41.5	-111.6	-297.2	-470.1	-649.0
Cassava	-3.4	-28.3	-77.7	-212.2	-340.3	-470.0
Inputs Costs	-1.3	-10.0	-25.3	-64.2	-96.0	-132.6
Lease cost	0.0	0.0	0.0	0.0	0.0	0.0
Digital System Development	-0.5	-0.5	-0.5	-0.5	-0.5	-0.5
Administrative Wages and Salaries	-0.1	-0.9	-2.1	-5.3	-7.9	-10.9
General & Administrative	-0.1	-0.9	-2.4	-6.3	-10.0	-13.8
Customer Acquisition Cost	-0.1	-0.4	-1.2	-3.2	-5.0	-6.9
Contingency	-0.1	-0.4	-1.2	-3.2	-5.0	-6.9
Depreciation	0.0	-0.2	-1.3	-2.4	-5.3	-7.3
Profit before interest and Tax	0.0	2.4	6.6	19.9	31.0	42.9
Margin		5.5%	5.6%	6.3%	6.2%	6.2%
Interest	-0.2	-0.9	-2.6	-4.5	-5.7	-6.0
Profit before Tax	-0.2	1.5	4.0	15.4	25.3	36.9
Tax	0.0	-0.3	-0.8	-3.1	-5.1	-7.4
Net Income	-0.17	1.2	3.2	12.3	20.2	29.5
Net Margin	-3.2%	2.8%	2.7%	3.9%	4.0%	4.3%

The business should reach profitability in Year 1 when there is more land participation into the Cooperative.

Cash Flow Projection

<i>MILLSD</i>	Start	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Beginning Cash	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cash Flow from Operation		-0.17	1.40	4.50	14.73	25.48	36.82
Cash Required for Investments	-1.3	-8.7	-12.2	-29.9	-24.4	-25.5	-10.0
Cash from Investor	1.3	4.4	0.0	0.0	0.0	0.0	0.0
Loan Repayment	0.0	0.0	-0.9	-3.2	-9.0	-12.7	-12.7
Cash flow from New Term Loans	0.0	4.5	11.7	28.6	18.6	12.7	0.0
Ending Cash	0.0	0.0	0.0	0.0	0.0	0.0	14.2

Ending cash is 0 until Year 5 due to net cash being reinvested into the company.

Cash flow from Operation is positive since Year 1

Balance Sheet Projection

Mil USD

ASSETS	Start	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Currents Assets	0.0	0.4	3.3	8.8	23.6	37.2	65.5
Cash	0.0	0.0	0.0	0.0	0.0	0.0	14.2
Trade and Other receivables		0.1	0.9	2.3	5.9	8.8	12.2
Stock		0.3	2.4	6.5	17.7	28.4	39.2
Non-current Assets	1.3	9.9	20.8	48.3	67.3	85.5	85.7
Software	0.2	1.1	0.7	0.3	0.0	0.0	0.0
Warehouse-Land	0.0	0.3	0.7	1.6	2.4	3.2	3.5
Warehouse-Building	0.6	4.4	10.1	24.2	33.9	43.0	43.0
Irrigation System	0.5	4.0	9.3	22.1	31.0	39.3	39.3
Office Equipments	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL ASSETS	1.3	10.3	24.1	57.0	90.9	122.7	151.2
LIABILITIES AND SHAREHOLDER'S EQUITY							
Current Liabilities	0.0	0.2	2.0	6.3	18.3	33.6	49.0
Trade and other payables		0.1	0.4	1.1	2.7	4.0	5.5
Working Capital	0.0	0.2	1.6	5.3	15.6	29.6	43.5
Non-current Liabilities	0.0	4.5	15.3	40.7	50.3	46.6	30.2
Long-term Loan	0.0	4.5	15.3	40.7	50.3	46.6	30.2
Third Party Liabilities	0.0	4.8	17.3	47.1	68.6	80.2	79.2
Total Shareholder's Funds	1.3	5.5	6.7	10.0	22.3	42.5	72.0
Investment	1.3	5.7	5.7	5.7	5.7	5.7	5.7
Cumulative Net Profit		-0.17	1.0	4.3	16.6	36.8	66.3
TOTAL LIABILITIES	1.3	10.3	24.1	57.0	90.9	122.7	151.2

Average Return on Equity over the 6 years of the project is 41%.

Use and Source of Funds

Capital Structure and Investment Requirement (US\$' Mil)

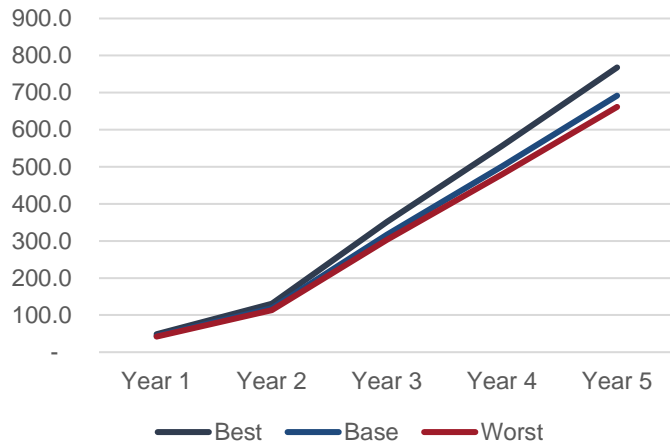
Categories	Pilot Capital Requirement					
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Software Development	0.2	1.0				
Warehouse -land	0.0	0.2	0.4	0.9	0.8	0.8
Warehouse -building	0.6	3.9	6.2	15.1	12.3	12.9
Irrigation Systems	0.5	3.6	5.6	13.8	11.3	11.8
Office Equipment		0.0				
Total Investment	1.3	8.7	12.2	29.9	24.4	25.5

Source of Capital Requirement (US\$'Mil)

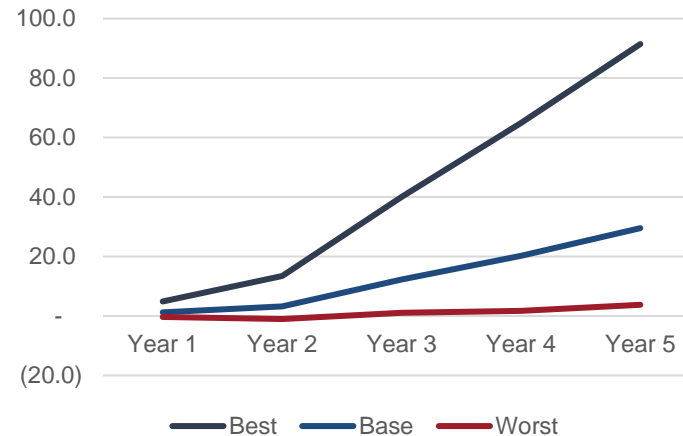
Source of Capital Requirement	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Free Cash Flow		(0.2)	0.5	1.2	5.8	12.8
Equity	1.3	4.4	-	-	-	-
Loan		4.5	11.7	28.6	18.6	12.7
Total	1.3	8.7	12.2	29.9	24.4	25.5

Scenario Analysis

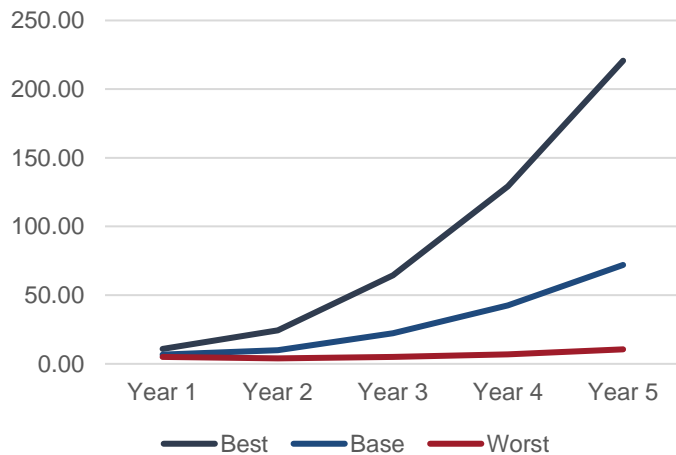
Revenue (US\$' Mil)



Net Income (US\$ Mil)



Net Worth (US\$' Mil)



Return on Equity (%)



Scenario analysis is based on cassava trading split between Dry Cassava sales vs. Fresh Cassava sales.

Base Scenario:

- Dry: Fresh: 50%:50%

Best Scenario:

- Dry: Fresh: 100%:0%

Worst Scenario:

- Dry: Fresh: 30%:70%

Observations:

- Net worth refers to the book value or shareholders' equity of the company. In the case of worst scenario, due to much smaller net worth, ROE turn out to be high relatively.



Social Impact and Community Benefits

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Socioeconomics and Sustainability

The purpose of the project is to develop a business model that is both sustainable and socioeconomically beneficial for the farmers. In order for the business to be sustainable, considerations must be made to ensure that the farmers receive quantifiable benefit such as through increased cassava yields, improved quality of their crops and enhanced income. In addition, environmental factors, such as improving soil health, ensuring conservation of the soil and minimising chemical usage must also be considered to ensure that the land can maintain high productivity over time.



Sustainability is a prerequisite for long-term Profitability and Community Livelihood

Expected Outcomes in Phase 1

The company will play the key role as a trailblazer in driving beneficial effects to the socioeconomic aspect of Cambodian farmers, as well as to the environment.



Soma Domnam
FARMING FOR TOMORROW

Growth in household income for

75,000

Increase in income by

20% in 1st project phase:

- Increased sales price
- Additional dividends

**Up to
50%**

Increase of
farmers income
after 5 years

**Climate Change
Resilience**

15,000

farmers trained in
1st project phase

Up to 65%

Increase of food production based on today's average

Soma Domnam will be a trusted partner in building sustainable farms

Benefits: Farmers & Commune

As a social enterprise, Soma Domnam aims to develop farming communities through agriculture organisations which will give more opportunities to individuals by increasing their buying power, facilitating knowledge sharing, improving their health and bringing social benefits to the local communities.

Financial

- ✓ Cost benefits owing to bulk purchase of seeds, fertilisers & other input materials.
- ✓ Improved income due to higher yield & stable selling price, additional income from multi-cropping and dividend from Soma Domnam shares.
- ✓ Use of data to help in demand & price forecasting.
- ✓ Improved quality of life owing to higher income.

Skill & Knowledge Development

- ✓ Training to ensure all Soma Domnam standard knowledge & information is shared with farmers.
- ✓ Improve the skill & knowledge levels of farmers to ensure high quality produce.

Health

- ✓ Use of technology to ensure judicious use of fertilisers & pesticides.
- ✓ Soma Domnam to ensure quality farm produce will result in health benefits for everyone.

Social

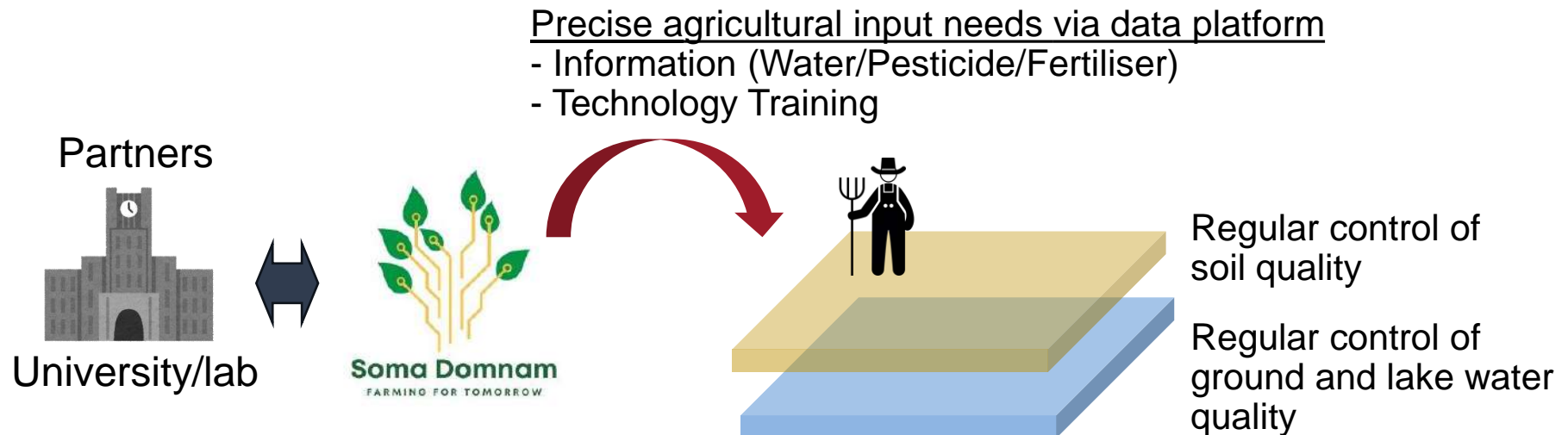
- ✓ Cooperatives to invest in community development projects for infrastructure, healthcare, access to procurement, market, finance & education.
- ✓ Enhanced food security due to higher agricultural produce.

The partnership will improve the livelihood of farmers.

Benefits for the Environment

Through information sharing, knowledge transfer and use of precision farm technology, Soma Domnam will encourage the use of sustainable agriculture practices for long term resilience to climate change and preservation on the environment.

- ✓ Use of data, technology & knowledge transfer to ensure sustainable agricultural practices.
- ✓ Reduced chemical usage due to integrated fertilisers & pest management techniques thereby reducing environmental pollution.
- ✓ Soil conservation & waste reduction practices to conserve the environment.
- ✓ Water conservation policies to encourage judicious utilisation of water.
- ✓ Banning of open burning to reduce air pollution and environmental impacts of crop burning.



Benefits for Soma Group

The following are key benefits of the proposed business model for Soma Group:

- ✓ Attract investors and partnerships
- ✓ Good practices allow for better market access
- ✓ Improved quality control of agricultural produce by working closely with farmers
- ✓ Reduced production risks owing to use of data & working closely with farmers
- ✓ Optimised supply chain and increased efficiency thereby reducing costs
- ✓ Diversified revenue stream for Soma Group by taking this to other crops in the future



Key Environmental and Social Issues

Some of the environmental and socioeconomic issues that may arise from the business model are listed here along with mitigation measures.

	Risk	Mitigation Measure
Socioeconomic	Dependency of individual farmer on single buyer and limited negotiation power of individual farmer towards prices of inputs and cassava price	The core of the business model is the organisation and coordination of the individual farmers within cooperatives. These cooperatives give balanced power in between Soma Domnam and the farmers. Basing this on existing local structures like the communes or the Cassava Federation is expected to help to build trust in between the partners.
Environmental	Overuse of pesticide leading to unwanted effects on fauna and potential health issues to the farmer	Soma Domnam's data-driven approach will reduce excess use of pesticide, by giving precise information on the amount of pesticide needed. The use of agricultural technology such as drones for precise pesticide application, will also reduce pesticide use and avoid direct contact of the pesticide with farmers.
	Overuse of fertiliser leading to potential water contamination	Regular monitoring of ground and lake water to ensure chemicals amounts are at a safe and suitable level.
	Overuse of water from irrigation system leading to decrease in water availability	The level of ground water should be controlled to ensure that water sources do not get depleted.

Monitoring & Measuring – Pilot Phase

In order to maintain the integrity and sustainability of the partnership, the socioeconomic and environmental impacts will be measured based on diverse indicators.

Soil quality

The repeated plantation of cassava on the same ground will deplete the soil. The use of appropriate fertilisers and crop rotation shall reduce these effects.

Indicator: Soil quality

Source: Partnering laboratory

Income of Farmers

A major expectation is the improvement of the farmers quality of life.

Indicators: Earnings of the cooperative, yield per hectare

Source: Cooperatives financial reports

Stability of Farmers Income

Decreasing the risk of loss of income by dropping cassava prices is addressed by sale of cassava at scale.

Indicator: Volatility of cassava price

Source: Market pricing in the digital app

Environmental Impact

Overuse of fertiliser or pesticides has many effects on soil quality, fauna, ground and lake water. Indicators should be regularly checked to be able to react on critical situations.

Indicator: Quality of ground and lake water

Source: Partnering laboratory

Farmers Knowledge & skill

One of the services of the Soma Domnam is training farmers in the proper use of technology to increase productivity. Even if farmers decide to step out of the cooperative the knowledge will still help him.

Indicator: Number of farmers trained by Soma

Source: Soma report on trainings

Meeting the expectations of the pilot project shall be validated by a regular monitoring of the effects



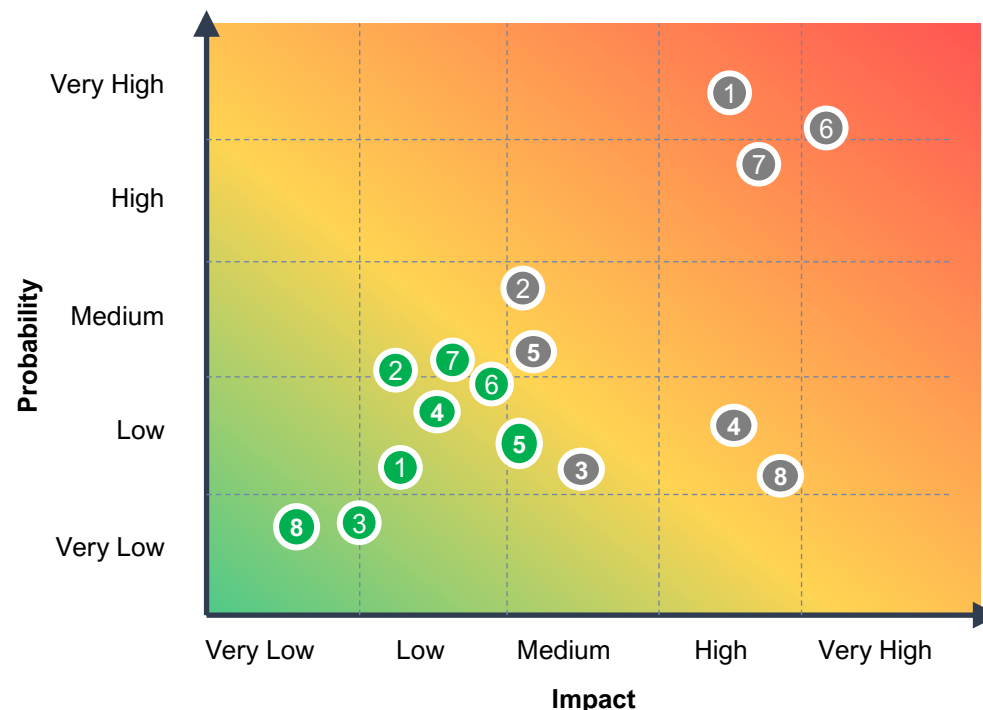
Risk Analysis and Mitigation

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Risk Analysis & Mitigation

This section identifies the potential risks and how to mitigate them through actions.

- ① **Risk:** Volatility of agri-product prices
① **Mitigation:** Recommended government subsidy
- ② **Risk:** Insufficient access to funding
② **Mitigation:** Government financial incentives for credit companies
- ③ **Risk:** Demand uncertainty for all revenue streams
③ **Mitigation:** Bulk purchasing through Soma Domnam and cooperatives
- ④ **Risk:** Uncertain supply of skilled labor
④ **Mitigation:** Education, training and information
- ⑤ **Risk:** Soil erosion
⑤ **Mitigation:** Improved soil management and sustainable farming knowledge transfer
- ⑥ **Risk:** Crop diseases / Natural disasters
⑥ **Mitigation:** Recommended policies on sustainability
- ⑦ **Risk:** Irrigation infrastructure (productivity)
⑦ **Mitigation:** Recommended policies on irrigation
- ⑧ **Risk:** Reputation risk & trust among farmers
⑧ **Mitigation:** Cassava Federation, communes and government



- ① Risk probability and impact before mitigation
- ② Risk probability and impact after mitigation

Conclusion

In conclusion, the proposed business model has significant potential for **improving the livelihoods of small-scale farmers** while **promoting sustainable agricultural practices**.

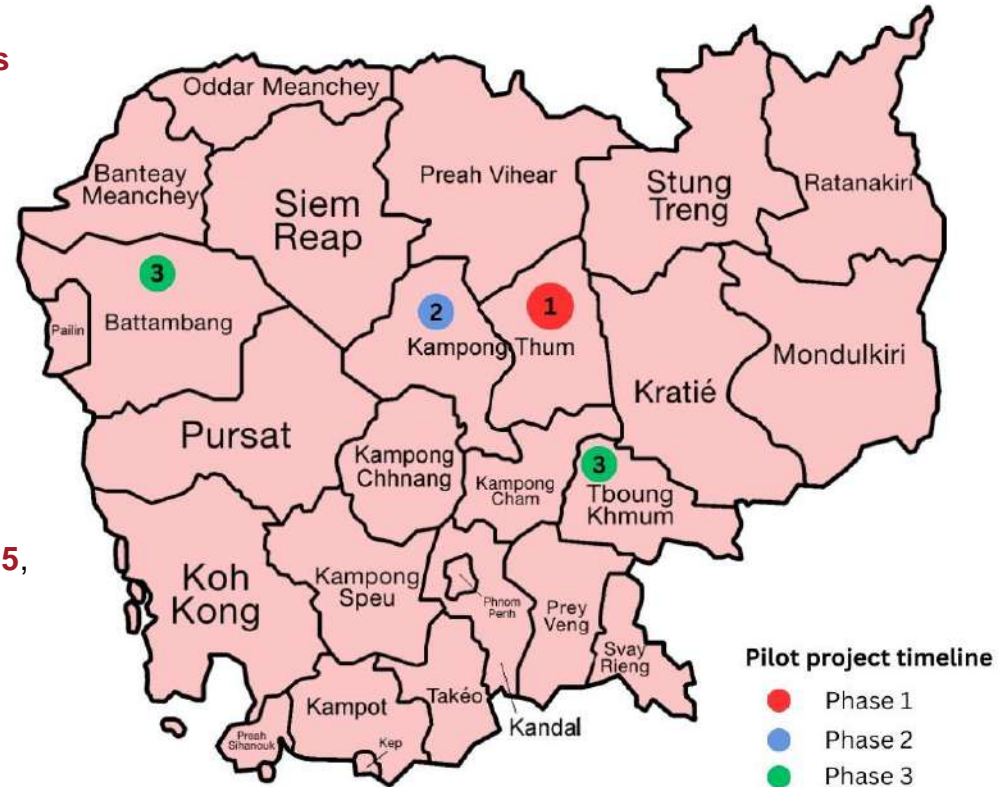
Farmers will gain:

- **Access to stable markets**
- **Improved production techniques**
- **Enhanced income** opportunities.

The business model features the creation of a **new subsidiary, Soma Domnam**, with a pilot phase on Soma Group's 3,000-hectare Sal Sopheapreanich cassava farm before being expanded in 3 phases across Cambodia.

The business model is predicted to be **self-sustaining by Year 5**, with an average return on equity of 41% by Year 5.

Through partnerships with the public and private organisations, the business model aims to bring together all members of the supply value chain, leveraging technology to connect all the key players, and enhancing the agriculture sector as a whole in Cambodia. Starting first with the Cassava industry, the vision is to expand to all farmers and crops.



Soma Domnam will be at the heart of the entire agricultural sector, bringing all key stakeholders together.



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