

Financial Support

Potential Sub-Sectors and Factors for Diversification in
Agriculture and Agro-processing Industry in Cambodia

Nith Kosal

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Outline

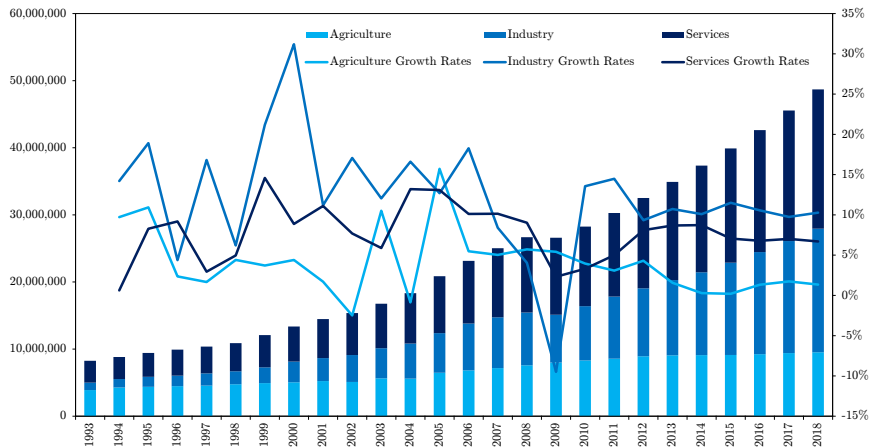
- 1 Motivation
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Motivation

- Agriculture remains a major sector contributing to Cambodia's GDP **But**
- Cambodian government has a policy to improve agriculture through the **diversity potential agricultural product** for processing and export.
- At the same time, we see that the government is seriously exporting rice and supporting the milling industry. While the new state commercial bank is **still focused on providing loan to the rices sector.**
- Although the financial sector in much better, farmers and agro-processors are **still difficult to credit.**

Background

Figure: Cambodia GDP by sector in Million Riels at constant 2000 prices



Source: Ministry of Economy and Finance 2018

Background

Figure: Value in Million Riels and Growth Rates, at constant 2000 prices

Figure 2.1: Crops value in Million Riels

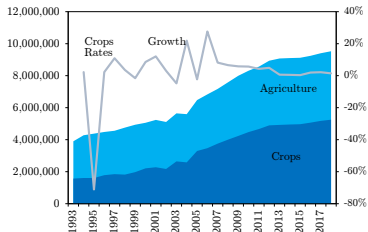


Figure 2.2: Livestock value in Million Riels

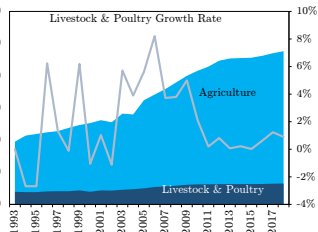


Figure 2.3: Fisheries value in Million Riels

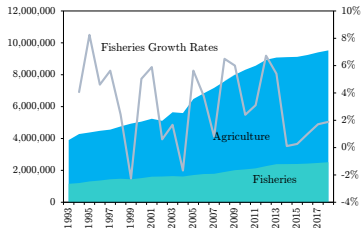
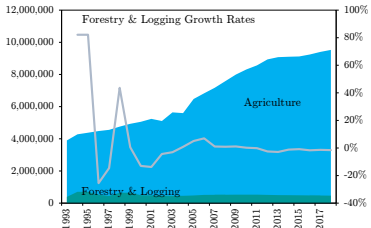


Figure 2.4: Forestry value in Million Riels



Source: Ministry of Economy and Finance 2018

Background

- The RDB ↑ its total assets by **15%, US\$157 million in 2017** ⇒ **US\$178,28 million in 2018**, and ↑ the total loans by **30%**, **US\$122.07 million in 2017** ⇒ **US\$ 159.11 million in 2018** (RDB, 2018).
 - ▶ In 2018, total loans contributed to the rice sector (76.13%), rubber, maize, cassava, pepper, coffee, and sugar cane (14.89%), and microfinance, animal-raising, and others (8.97%)
- 2018: Agro-processing sector accounted for only **2.4% of GDP**, or **US\$589.83 million**, and agriculture for about **22% of GDP**, or **US\$5.47 billion** (NIS, 2018).
 - ▶ By 2015, 77.6% of 41,674 registered SMEs are carrying out in the agro-processing (Sok, 2020). However, until now, just 10% of Cambodia's agricultural merchandise is processed (Bdlink, 2017).

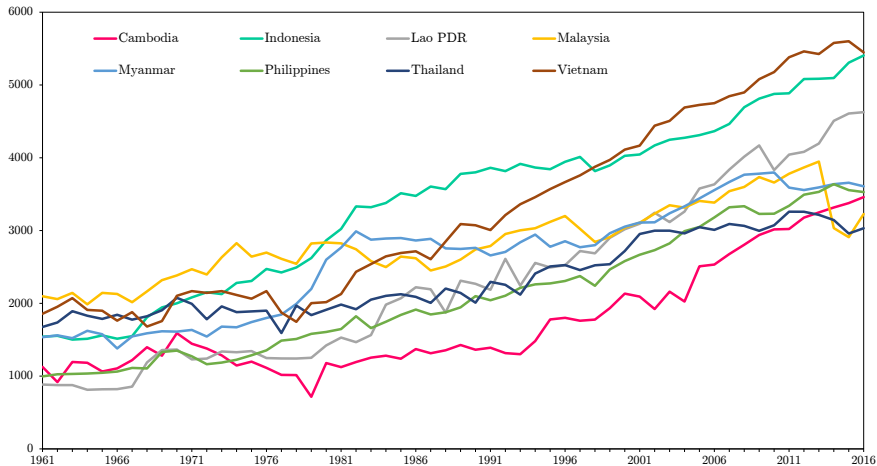
Background

- By 2015, the total loans to the agricultural sector is about around US\$ 2.3 billion (NBC, 2015).

Due to the difficulties in accessing financing were due to **lack of collateral and high interest rates** are a critical problem for the agricultural and agro-processing industry (e.g., Bdlink, 2017; Keosothea & Molyaneth, 2020; Phlong, 2009; Serey & Theara, 2016; Sothorn, 2020).

Background

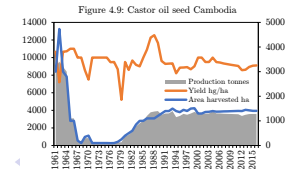
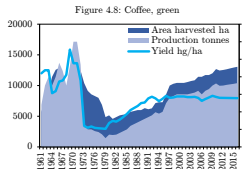
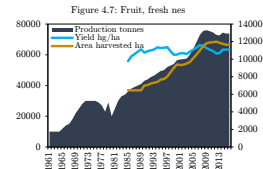
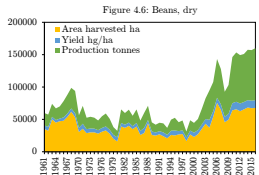
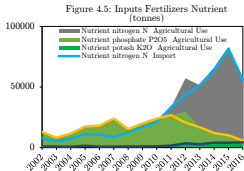
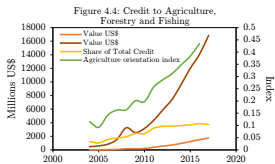
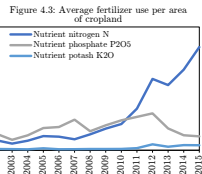
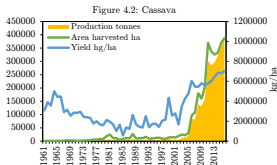
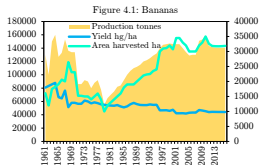
Figure: Cereal yield (kg per hectare)



Source: World Development Indicators 2018

Background

Figure: Value in Million Riels and Growth Rates, at current prices



Literature Review

- Most farmers used **credits for seeds, fertilizers, pesticides, petrol and irrigation water**, while short-term loans were granted several months before crop income was insured (Ovesen et al., 2012).
 - ▶ Subsistence farmers were generally loaned from the local lender, semi-commercial farmers have received loans from multiple MFIs, and commercial farmers can loans from the banks and MFIs (Ovesen et al., 2012; Phlong, 2009; Sothorn, 2020).
- Amount of the study of Shen et al. (2014), Galindo and Micco (2004), Dinç, (2005), Porta and Shleifer (2000), Micco et al. (2007), Iannotta et al. (2007) found that the state ownership banks located in developing countries are **less profitable than private** and it also has **very different performance** during election years.

Literature Review

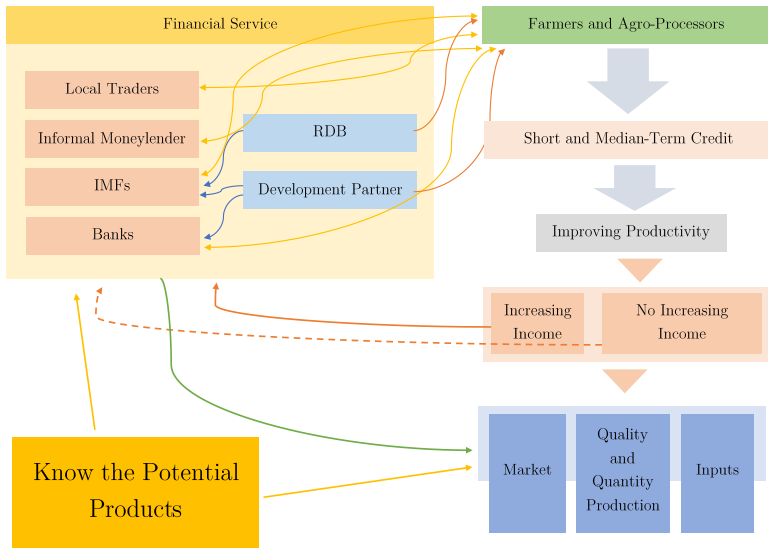
- Theoretically, government ownership of banks is always less efficient and less productive than private banks because they have established themselves by **proposing to meet political, public objectives and socially beneficial investments** from being funded rather than being left to the search for profits and productive extension (e.g., Andrianova et al., 2012b; Shen et al., 2014; Stiglitz, 1994).
- Financial subsidy policy is **very useful** with the **right policies and good piratical**. In case of South Korea, financial support focused on technology industry, and finally, it helps Korea's economic growth (Doh & Kim, 2014; Kim et al., 2004).

Literature Review

- Economic diversification is **very important to the developing country** by using the efficiency and effectiveness of resources and time.
 - ▶ To explore in order to find a potential sector for a country for development and improvement, most economists usually use **the I-O method**, a traditional development by **Leontief** (Garía et al., 2005, 2008; Revilla et al., 2015; Kilkenny & Nalbarte, 2002).

Conceptual Framework

Figure: Conceptual Framework



Research Question

- Main Research Question
 - ▶ What are the **sub-sectors** and **factors** in agriculture and agro-processing industry that the Agricultural and Rural Development Bank should **support financially**?
- Sub-Research Question
 - ▶ What products of the agriculture and agro-processing industry have the **potential to develop**?
 - ▶ What are the **essential factors** to stimulate production in the agriculture and agro-processing industry sectors?
 - ▶ What are the **critical factors** in the agriculture and agro-processing industry that require financial support?
 - ▶ What **types of policies** are necessary for the Agricultural and Rural Development Bank to respond to sustainable development in agriculture and agro-processing industry?

Method and Design

Research Design

- The research study will mostly be quantitative in nature.
 - ▶ Explore to identify **key factors or sub-sectors** in agriculture and agro-processing that the Agricultural and Rural Development Bank should focus on providing financial support.
- Limitation of the Study
- Leontief input-output model is a quantitative economic model
 - ▶ That quantifies the mutual interrelationships between industries in a nation's economy (Miller & Blair, 2009; Soto & Monterrey, 2008).
 - ▶ there are n agriculture and agro-processing industries producing n different products
 - ⇒ Input = Output or Consumption = Production

Method and Design

Research Design

- The n industries denoted by $S_1, S_2, \dots, S_i, \dots, S_n$, where a_{ij} denoted the industry S_i that produce one unit by industry S_j .
- d_i is the number of externally demanded units of industry S_i .
- Where x_1, x_2, \dots, x_n be the total output of industry S_1, S_2, \dots, S_n

$$\left\{ \begin{array}{l} x_1 = a_{11}x_1 + a_{12}x_2 + a_{1i}x_i + \cdots + a_{1n}x_n + d_1 \\ x_2 = a_{21}x_1 + a_{22}x_2 + a_{2i}x_i + \cdots + a_{2n}x_n + d_2 \\ \vdots \\ x_i = a_{i1}x_1 + a_{i2}x_2 + a_{ii}x_i + \cdots + a_{in}x_n + d_i \\ \vdots \\ x_n = a_{n1}x_1 + a_{n2}x_2 + a_{ni}x_i + \cdots + a_{nn}x_n + d_n \end{array} \right.$$

Method and Design

Research Design

- Since $a_{ij}x_j$ is the number of units produced by industry S_i and consumed by industry S_i .

⇒ Total Consumption = Total Production for the product of each industry S_i .

$$A = \begin{pmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & \ddots & \vdots \\ a_{n1} & \cdots & a_{nn} \end{pmatrix}, D = \begin{pmatrix} d_1 \\ \vdots \\ d_n \end{pmatrix}, X = \begin{pmatrix} x_1 \\ \vdots \\ x_n \end{pmatrix}$$

- ▶ A is the input-output matrix
- ▶ D the final demand vector
- ▶ X the production level vector.

Method and Design

Research Design

- The Matrix Equation:

$$AX + D = X \Rightarrow (I - A)X = D$$

- ▷ The logical is required the inverse of $(I - A)$ to be non-negative and non-singular.

$$\implies X = (I - A)^{-1}D$$

Method and Design

Research Design

Figure: Input-Output Transaction Table

Users Suppliers		Producers as Consumers				Final Demand				Total Output
		S ₁	S ₂	S _i	S _n	Personal Consumption Expenditures	Gross Private Domestic Investment	Government Purchases	Net Exports	
Producers	S ₁									
	S ₂									
	S _i									
	S _n									
Value Added	Employees	Employee Compensation				Gross Domestic Product (GDP)				
	Business Owners and Capital	Profits-Type Income and Capital Consumption Allowances								
	Government	Indirect Business Taxes								
Total Input										

Method and Design

Data Collection

- The project will use secondary data:
 - ▶ National Institute of Statistics
 - ▶ The World Bank
 - ▶ National Bank of Cambodia
 - ▶ Agricultural and Rural Development Bank
 - ▶ Ministry of Agriculture, Forestry and Fisheries
 - ▶ The Food and Agriculture Organization
 - ▶ Ministry of Economy and Finance
 - ▶ Ministry of Commerce
 - ▶ And another relevant source for this study.

Thank you!