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STUDY ON MARKET & VALUE CHAIN MAPPING

Study on Market and Value Chain Mapping

Study of SME Cluster Value Chain of 19 Provinces along the Southern Economic Corridor and Southern Coastal Corridor of the Greater Mekong Subregion

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Trade & Investment Facilitation Department
Mekong Institute

The Study Team
Trade & Investment Facilitation Department
Mekong Institute

Madhurjya Kumar Dutta, Program Director
Quan Anh Nguyen, Program Specialist
Reza Iftekhar Patwary, Program Specialist
Sanga Sattanun, Program Manager
Toru Hisada, Sr. Project Coordinator
Seang Sopheak, Program Coordinator
Ronnarit Chaiyo-seang, Program Officer

Study of SME Cluster Value Chain of 19 Provinces along the Southern Economic Corridor and Southern Coastal Corridor of the Greater Mekong Subregion

Study conducted in: *Cambodia, Myanmar, Thailand & Vietnam*
Period of Study: *June 2016-July 2016*
Project: **Enhancing Competitiveness of Small and Medium-sized Enterprises (SME) along the Southern Economic Corridor (SEC) of ASEAN Mekong Sub region (AMS)**

Abbreviations and Acronyms

ADB	Asian Development Bank
AOBO	Analysis of Business Operations
ASEAN	Association of South East Asian Nations
B2B	Business to Business
BDS	Business Development Service(s)
BDSPs	Business Development Service Provider(s)
BMO	Business Membership Organisation
CCI	Chamber of Commerce and Industry
CDE	Community Development Enterprise
CFC	Common Facility Centre
CIFR	Cambodian International Financial Reporting Standards
CMTV	Cambodia, Myanmar, Thailand, Vietnam
DOI	Department of Industries
ERIA	Economic Research Institute for ASEAN and East Asia
FGD	Focus Group Discussion
FOB	Freight On Board
FTI	Federation of Thai Industries
GSO	General Statistics Office (Vietnam)
GVC	Global Value Chain
HACCP	Hazard Analysis and Critical Control Points
HH	Households
HP	Horse Power
KHR	Cambodian Riel
LC	Letter of Credit
LVC	Local Value Chain
OSMEP	Office of SMEs Promotion (Thailand)
OTOP	One Tambon One Product
ROCL	Ratchaburi Organic Company Ltd.
SEC	Southern Economic Corridor
SCC	Southern Coastal Corridor
SEZ	Special Economic Zone
SME	Small and Medium Enterprises
SWOT	Strengths, Weaknesses, Opportunities, Threats
THB	Thai Baht (currency)
ToR	Terms of Reference
ToT	Training of Trainers
UNHCR	United Nations High Commissioner for Refugees
UNIDO	United Nations Industrial Development Organization
VA	Value Addition
VC	Value Chain
VASEP	Vietnam Association of Seafood Exporters and Processors
VCCI	Vietnam Chamber of Commerce and Industry
VD (or VND)	Vietnamese Dong (currency)

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Executive Summary

Background

The study supports Mekong Institute in implementing the project, 'Enhancing Competitiveness of Small and Medium-sized Enterprises in the Southern Economic Corridor (SEC) of ASEAN Mekong Subregion (AMS)' which is funded by the Government of Japan through Japan ASEAN Integration Fund (JAIF) for a period of two years (2016-18). Cambodia, Myanmar, Thailand, and Vietnam are the four countries where trade capacity building of the small and medium enterprises and related stakeholders along the Southern Economic Corridor (SEC) will be developed.

Location of Study

The study was jointly conducted by the Entrepreneurship Development Institute of India (consultant) and the Mekong Institution along the Southern Economic Corridor (SEC) across 19 provinces which are:

Table 1: SEC Corridors and Provinces

SEC Countries	SEC Corridors and Provinces		Total
	Central Sub-Corridor	Coastal Corridor	
Myanmar		Tanintharyi (Dawei)	1
Thailand	Prachinburi, and Sa kaeo	Kanchnaburi, Ratchaburi, Trat, Chantaburi	6
Cambodia	Banteay Meancheay, Battambang, Pursat, Kampong Chhnang, and Svay Rieng	Koh Kong, Kampot, and Preah Sihanouk	8
Vietnam	Tay Ninh	Kien Giang, Can Tho, and Ca Mau	4
Total	8	11	19

Objectives

Broadly, the project objectives include (i) capacity development for SME clusters and networks, (ii) trade and investment promotion through public and private partnerships, and (iii) strengthening business development services (BDS) providers. Integrating the SMEs with the regional and global value chain is the inherent theme of the project design.

Specific objectives of the study are the following:

- Identify market chain actors and linkages;
- Identify enabling business environment factors;
- Identify sectoral and geographical concentration of value chains;
- Identify cluster constraints and solutions through improved linkages with markets and trade.

Methodology

The study was divided into two phases -

i. The desk study phase identified products in each province, taking into account number of SMEs in the provinces, leading products in the provinces, and the supportive policy and business environment. 'Number of people employed' in an establishment was the common criterion for defining SMEs in each of the CMTV countries. Only public data available in English were consulted.
ii. The field study took place in the four countries, simultaneously by three teams for a period of around 30 days. The work schedule in each province was as follows:

Table 2: Study Activities and Outcomes

Day	Activity	Outcome
1	Focus Group Discussion for half day and interviews with government representatives	Identification of clusters and selection of products
2	Interviews with entrepreneurs, visit to premises of SMEs, interactions with other stakeholders (banks, services providers, and others)	AOBO and value chain identification. Identifying issues and suggestions

From the findings above, the product value chain map for each SME cluster (one in each province) has been developed together with the volume and price of outputs at each stage of the value chain, number of actors involved in each stage, along with other findings. Each cluster analysis also includes a SWOT analysis to help develop insight into the particular cluster supported by responses received from FGDs conducted with direct value chain actors and local institutions. The cluster value chain is then further analysed in terms of constraints and way forward.

Observations made in the Study

Products of the SME clusters identified in CMTV during the study were based on active discussion with the stakeholders and economic benefits that can be derived from the intervention.

Table 3: Provinces and Products

Country	Provinces	Products
Cambodia	Banteay Meanchey	Silk Handloom
	Battambang	Fish Sauce
	Pursat	Orange
	Kampong Chhnang	Pottery & Ceramics
	Svay Rieng	Rice
	Koh Kong	Fish Sauce
	Kampot	Natural Salt
	Preah Sihanouk	Dry Shrimp
Myanmar	Tanintharyi (Dawei)	Mackerel (Pla Tuu)
Thailand	Chantaburi	Durian Production Processing
	Kanchanaburi	Banana Processing / Fruit Processing
	Prachinburi	Organic Rice
	Ratchaburi	Aromatic Coconut Production & Processing
	Sa – Kaeo	Herb
	Trat	Community Based Tourism
Vietnam	Ca Mau	Dried fish (Snakeskin Gourami)
	Can Tho	Catfish
	Kien Giang	Tiger Prawn
	Tay Ninh	Custard apple

Each of the clusters and their products are unique in itself in terms of their respective markets, number of people employed, turnover, or business potential -

- Chanthaburi Durian Cluster exported over 12 billion THB or about 342 million USD in 2014 which was surprising because the produce was Durian which is not very popular;
- Sa Kaeo is a rich producer of herbs through its community enterprises and supply herbs to other provinces which in turn are branded as 'herb city' and not Sa Kaeo;
- Vietnam is a pivoting supply chain node for sea food products especially shrimps;
- Myanmar's Dawei has evolved as a fishery hub employing more than 11000 people in households based enterprises with a yearly turnover of 27 million USD; and
- Cambodian SME clusters are more traditional and artisanal based clusters.

The product value chains of the SME clusters are indicative and prototypical of the needs of the SMEs in each province. For example, in case of agricultural produce and sea food items, quality and hygiene may be pressing issues, because global standards require adherence to standards; these issues may not be of immediate concerns for other produces, like rice. Further overall observations are mentioned below:

- Development of a strong and sustainable linkage between the SMEs and BMOs (e.g. CCIs, FTIs, and Business Associations) remains crucial to ensure the future sustainability of the cluster value chain interventions. A strong linkage will encourage the informal sector to join the mainstream and will provide a strong and common negotiating platform for all stakeholders and create a dynamic information dissemination pathway;

- Strong representation to policymakers in the region regarding a common SME platform and sustainable trade and industrial facilitation platform needs to be promoted. Traditional business matching needs should be supported with modern digital B2B platforms, to ensure fast and credible collaborations between producers, input suppliers and buyers;

- Across the provinces along the SEC, local businesses and producers are often in need of practical understanding of clustering and the benefits of cluster-wide production in the survival of SMEs. Awareness program on creating and / or maintaining a shared platform by SMEs, BMOs, government, and the civil society, within permissible and traditional norms is desirable;

- ASEAN Strategic Action Plan (2016-25) mentions about three necessary actions: productivity; innovation; and technology upgradation, adoption, and use. These factors remain much relevant for the SEC region. SMEs are forced to be 'price takers' in the market. In some clusters SMEs have tied up with local universities (for example - Prachinburi Organic Rice farmers with Majeo University). Similar strong and sustainable linkages can be explored and established between SMEs and specialized / educational institutions. Inter-cluster linkages and expanded markets for sourcing raw materials and other services have been proven effective in other cluster development approaches. However, these secondary linkages can only be promoted once those primary linkages are well established.

Way Forward

There is no unique approach to address the needs of all the SMEs across the selected clusters in the provinces along the SEC. The product value chains of the SME clusters are indicative and prototypical of the needs of the SMEs in each province.

Support to Strengthening Clusters: Across the clusters along the SEC, there is a need for developing strong cluster leadership and functioning to raise awareness among the cluster members about producing and marketing in a united front to attract support from the respective governments and also from development partners.

Formation of Export Consortia and Export Market Development: After strengthening the cluster management the next step is to support selected cluster leadership in formation of export consortia and develop the export market for the products developed in the clusters. This also helps to follow particular quality programs for a particular cluster for the quality upgrade of all the products that are produced in the cluster.

Structured Learning Visits: The southern economic corridor of the Mekong sub-region has similar clusters in the provinces and learning visits from one country to another can significantly improve process upgrade. Also, the learning visits can promote mutual trade discussion in case one cluster is in need of raw input from another while input from the domestic market may turn out to be costly and time consuming or simply not available.

Development of Interactive Database: Inclusion of the clusters and SMEs in the SEC in an interactive database would facilitate to connect with prospective buyers and investors who can assist these enterprises with superior technology and help them accessing new export markets. Inclusion in the SEC database will also support the SMEs to interact with other clusters and prepare themselves for large export orders.

Introduction of E-commerce: A selected number of cluster members and SMEs were identified who showed greater strength and capacity to compete in international markets. To support these entrepreneurs further in their business expansion, the prospective candidates should be screened and linked with an online marketplace provider where they can register themselves and receive trainings on how to successfully trade with overseas buyers.

Support Participation in Trade Fairs to Promote Cross-border Trade in the SEC: One of the major roles of these interventions is to promote cross border trade among the GMS countries. From the study, it was understood that some clusters in one country might be in a serious need of sourcing raw materials and that they simply did not have ideas that those inputs could be easily procured from a neighbouring cross-border provinces. These trade events will facilitate those enterprises further in engaging themselves in trade and partnership negotiation with other enterprises across the borders.

Embedded Services: Creating services providers within the cluster itself (for example – packaging and marketing service providers) can promote standards within;

Logistics development: Warehouse development, cold chain logistics (unbroken from farm to table), better transportation, and ecologically sustainable real estate development and management have been desired by cluster stakeholders to improve product quality and operational efficiency;

Soft skills training: Business management skills, negotiation skills, and cross border buyer-seller communication skills may add value to the enterprises for expanding into international markets;

Financial issues: In some clusters, changing climate affected production and has harmed the debt servicing capacity of SMEs. Lower interest rates, better banking practices (for example - decoupling insurance as a precondition to loans), accountability and governance were needs of the SMEs to cope better with the business cycles.

Chapter A

Introduction, Background of the Study & Methodology

1.1 Introduction

Economic activity across the globe possesses a complex natural dynamics. Multivariate preconditions, direct and indirect effect of copious non-economic factors and probabilistic models of unknown future tends to present these activities in a group based discourse rather than a single layer model. Cross sections between several horizontal and vertical factors affect the success of a developmental economy.

To strengthen the subregional cooperative activity in terms of trade facilitation through cluster, a large project named as "Enhancing Competitiveness of Small and Medium-sized Enterprises in the Southern Economic Corridor (SEC) of ASEAN Mekong Subregion (AMS)" has been initiated with help of Government of Japan through Japan ASEAN Integration Fund (JAIF) for period of two years (2016-18). Broadly, the project objectives include (i) capacity development for SME clusters and networks, (ii) Trade and Investment promotion through public and private partnerships, and (iii) Strengthening business development services (BDS) Providers. Integrating the SMEs with the Global Value Chain is the inherent theme of the project design.

To determine the present circumstances prevailing in the subregion, this study has been initiated to find our suitable clusters across 19 provinces spread in four target countries; i.e. Cambodia, Myanmar, Thailand, and Vietnam. The objective of the study was to determine the Market and Value Chain in various clusters identified by the suitable authority of the respective provinces.

1.2 Background of the Study

Project Name: "Enhancing Competitiveness of Small and Medium-sized Enterprises (SME) in the Southern Economic Corridor (SEC) of ASEAN Mekong Sub region (AMS)"

Assignment Title: Study on Market and Value Chain Mapping

Specific Objectives of the Project, as mentioned in the ToR are given below:

- **Objectives of Market Mapping**
    - Identified market chain actors and linkages
    - Identified enabling business environment factors
    - Identified Business Development Services (BDS) Providers
- **Objectives of Value Chain Mapping**
    - Identified sectoral and geographical concentration of value chains
    - Identified constraints and solutions
    - Identified opportunities of increased and improved connections and linkages in the value chains

As mentioned in the ToR, the project assignment covers 19 provinces in the Southern Economic Corridor - eleven (11) provinces in the southern Coastal Corridor and eight (8) provinces in the Central sub-corridor

Table 4: SEC Corridors and Provinces

SEC Countries	**SEC Corridors and Provinces**		**Total**
	Central Sub-Corridor	***Coastal Corridor***	
Cambodia	Banteay Meancheay, Battambang, Pursat, Kampong nang, and Svay Rieng	Koh Kong, Kampot, and Preah Sihanouk	8
Myanmar		Tanintharyi (Dawei)	1
Thailand	Prachinburi, and Sa kaeo	Kanchnaburi, Ratchaburi, Trat, and Chantaburi	6
Vietnam	Tay Ninh	Kien Giang, Can Tho, and Ca Mau	4
	8	11	19

1.3 Definition and Importance of Clusters: Recent Literature

Employment in the SME sector in CMTV is large and significant. About 51.7% (Vietnam) to 76.7% (Thailand) people are employed in SMEs in CMTV, while the micro enterprises (i.e. employing upto 10 people) constitute about 88.8 % (Myanmar) through 99.8% (Thailand)[1] of the total number of SMEs. SME Cluster based approach for developing the value chains may be considered from two perspectives of the present study:

i. Concept of SME clusters

The diagram summarises the structural, incidental, and factors concerning SME cluster, and

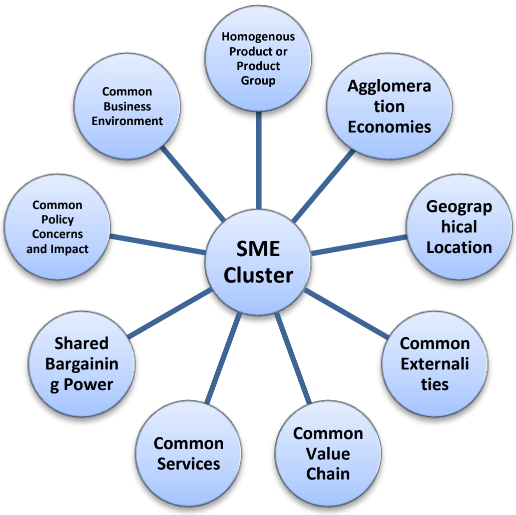


Figure 1: SME Cluster Analysis

ii. Policy vision and missions in the region

SME sector in each of the CMTV countries consists of formal and informal or unregistered enterprises. A strategy for the development of SMEs under the overarching category of private sector development was chalked out in the "Strategy and Action Plan for the Greater Mekong Subregion (GMS) Southern Economic Corridor (SEC)" published by ADB in 2010, in which relevant objectives for this study were:

- Promote and facilitate trade and investment, and
- Enhance mechanisms for promoting private sector participation for the development of the SEC.

In addition, two strategic objectives were identified in the ASEAN Strategic Action Plan 2016-25 (Jakarta Framework developed by ERIA in 2011) for the development of the SMEs in the region:

- First five years: To seamlessly integrate with the AEC and the regional value chains -
  - Pathways - Industry Cluster, Global Supply Chain, Productivity
- Subsequent five years: To become globally competitive, innovative, inclusive and resilient
  - Pathways - Innovation, Entrepreneurship, Export

In those objectives, the common pathway is enhancement of employment. In addition, those policy documents also enforce that "SMEs perform better when they are allied with other SMEs or with large enterprises including MNCs. From this perspective, industry clusters would help SMEs enhance productivity and foster innovation." And this is where the SME cluster based development becomes a significant tool for the project which the study supports.

1.3.1 About SME Clusters and Selection of SME clusters

"A **cluster** is a geographical proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and externalities". (**Michael** E. **Porter**, 'On Competition')

[1] Sources: Fig 1-1 in page 1 of Statistics of SMEs, ASEAN Strategic Action Plan for SME Development 2016-25, and ASEAN SME Policy Index (2014) study, conducted by ERIA, OECD and the ASEAN SME Agencies Working Group

"UNIDO defines clusters as sectoral and geographical concentrations of enterprises that produce and sell a range of related or complementary products and, thus, face common challenges and opportunities."[2]

During the Focus Group Discussions, the concept of clustering was described and thereafter the stakeholders were asked to select the cluster which is best representative of the province - a prototype cluster. Study of the cluster and its issues and stakeholder suggestions was to factor in during the implementation of the development of product value chain, with an inherent objective of cluster development.

Two methods were followed for cluster selection during the FGD -

i) using the product (cluster) selection matrix tool

An example of the Dawei product selection matrix is given below:

Table 5: Product Selection Matrix

Criteria – weight	**Products**							
	Rubber	Fishery	Cashew Nut	Betel nut	Mining	Crops	Tourism	Service
Total Production Value (from the province)- 5	50 mil US	27 mil US	8 mil US	14 mil US	10 mil US	10 mil US	8 mil US	20 mil US
Demand in the Local/ Domestic Market – 2	2	5	2	2	1	5	3	4
Extent of Value addition (today) - 3	2	1	2	2	3	1	3	3
Potential for higher VA -5	5	5	2	2	3	4	4	3
Contribution in GDP -5	5	5	3	3	2	2	5	4
Currently Exporting -3	3	1	5	5	5	3	2	2
Potential for Export -5	5	3	4	4	5	4	3	3
Employment Generation -2	5	3	2	2	2	5	3	3
Priority Sector Identified by the Govt. – 2	5	5	2	2	4	3	5	2
Total Score	32	28	22	22	25	27	28	24
Source: Primary Field Work Notes								

The top two products (with the top two highest scores) were selected. In the above case, both rubber and fishery clusters were visited and their value chains were studied. Due to the relative importance of the Fishery Cluster in Dawei's local community (prototype product Mackerel fish), the value chain of the Mackerel cluster was mapped and has been represented in this study.
ii) expert opinion and consensus (brainstorming)

In several clusters, due to time constraints and other exogenous and uncontrollable factors, the FGD could not come to an unanimous consensus regarding the selection of the product using the product selection matrix. In these cases, a general discussion between provincial administration, chambers of commerce and industries representatives was conducted. The final product was selected in these brainstorming sessions.

1.4 Definition of SMEs in CMTV

Referring to all four countries criteria given below, it may have observed that "***Number of Employment***" is a common factor in classifying the SMEs in the CMTV countries. It has also been observed that in case of every country, the Micro enterprises are those establishments where number of employment is 10 or less than that. 10 to 50/100 employment has been considered as Small and more than 50/100 employment been considered as Medium enterprise.

In brief, the criteria for defining SMEs are:

[2] *Source: Development Clusters and Networks of SMEs[2], UNIDO, 2001*

Table 6: Countries and SME Definitions

Country	Criteria
Cambodia	Number of employees, Value of financial assets excluding land Annual Turnover, Total Assets
Myanmar	Power Used, Number of Workers, Capital Outlay, and Production Value
Thailand	Number of employment, Value of fixed assets excluding land
Vietnam	Total number of labourers, Total Capital

Sources:

- Cambodia ADB and Royal Govt of Cambodia's Sub-committee on SME Secretariat, 2005 and 2007
- National Accounting Council of Cambodia
- Myanmar Ministry of Industry various publications
- http://www.smebank.co.th/en/definitions.php, and Chapter 2 SME Promotion Plan (http://goo.gl/rm6BTy) at OSMEP - Thailand
- Vietnam - Article 3 of the Decree 56/2009/ND-CP
- Details are given in the Appendix

1.4.1 Product Value Chain of SME clusters

After the SME cluster was selected in one province, the team of consultants visited few stakeholders and interviewed them. Representatives from chambers of commerce, trade industries, ministries of commerce, ministries of finance, departments of governments, financial institutions (banks, cooperatives), producer associations, individual entrepreneurs, and representative production and manufacturing locations were visited and data were collected from them. A value chain map of each cluster was then mapped. Stakeholders' mentioned issues and suggestions were incorporated and have been represented in a tabular form in the report.

1.5 Trade Facilitation Assessment

1.5.1 Identification of investment needs

Trade Facilitation need assessment took place based on stakeholders' response and opinion. Infrastructure, credit, and marketing are three essential needs of SMEs which need public and private investments, in the form of hard interventions - formation of Common Facility Centres (CFCs), Transportation (road, rail, ship), Information and Communication Technology platforms, and others, all created and maintained as public goods.

Existing value chains, after their determination through the project, will need to be linked to international value chains so that (i) new markets are explored, (ii) new sources of raw materials are determined, (iii) new BDS providers are linked to the local markets, (iv) new product designs, (v) new technologies, and many other innovations, which are inducers of cost efficiencies, are linked with existing SME value chains.

1.5.2 Role of Trade Facilitators

Industrial associations, BMOs (Business Membership Organisations), chambers of commerce, private and public actors, and public departments, together comprise the Trade Facilitators. The presence or absence of trade facilitators is vital for the sustainability of an SME cluster. They promote the collective interests of the SME cluster(s), and thereby offer a platform which permit equitable bargaining by individual SMEs and collective bargaining for the entire region or cluster.

1.6 Methodology

The study, which covered 19 provinces across four countries, involved SMEs in a particular geographical area (within each province) which could be identified as SME clusters and selecting one representative cluster by the provincial stakeholders and the consultants engaged in the process through Focus Group Discussions and further interactions. SMEs were neither uniformly distributed across the provinces nor were they defined and classified in the same manner across the countries. Once SME clusters could be identified, a common value chain of their product, homogenous product being the principle determinant of an SME cluster, was then identified with the help of the stakeholders and mapped. Given below is the outline of the methodology followed for the process.

1.6.1 Population Size (Total Number of SMEs in each country)

Table 7: Countries and Total Number of SMEs

Country	Total number of SMEs
Cambodia	36,116 (376,761*)
Myanmar	40,252
Thailand	2,844,757
Vietnam	2,720

Sources:
- Cambodia - Ministry of Industry, Mining, and Energy (MIME), 2009
- * Preliminary Study on SME (Department of Trade and Investment Facilitation), Saing Sokh Sophal
- Myanmar - Myanmar Ministry of Industry, Directorate of Industrial Supervision and Inspection as cited on page number 5 of Report by UNIDO (Project number SAP 120523, Project name - " Fostering Pro-poor and inclusive SME development in Myanmar"; March 2013)
- Thailand - Office of Small and Medium Enterprises Promotion (OSMEP) publications
- Vietnam - GSO Establishments Census, 2002
- Details - sectoral and cross-sectional information, break up of Thailand's provincial distribution of SMEs, and others are in the Appendix

1.6.2 Sampling

In compliance with the ToR, **Non-probabilistic convenience sampling** method was followed, because at the start of the primary survey the detailed number of SMEs, the existence of a cluster, whether there was any agglomeration[3] economies as a cluster, the total number of SMEs in each sector in each province, and the time of about one and a half days were allotted for each province for interviews were not known.

Representatives were from ministries, departments of ministries, chambers of commerce, trade industries associations, entrepreneurs, government officials, services providers, and related people.

1.6.3 Sources of Data

1.6.3.1 Secondary Sources

The sources of materials perused are given in the Bibliography section as an appendix. Data which were openly available in the English language could be accessed and referred to. Five days were given to collect the data for the four countries, and language barrier has been an issue which needs to be addressed by the provinces before their integration in the Global Value Chain. One particular research paper addresses this issue, namely - *Government Officer's Perceptions towards SMEs' Needs of English for Thai-Myanmar Trade in Kanchanaburi Province, Thailand*, Singhanat Nomnian, Research Institute for Languages and Cultures of Asia, Mahidol University, Thailand.

1.6.3.2 Primary Sources

There were direct face-to-face interviews between consultants and stakeholders, the later included representatives from ministries, departments of ministries, Chambers of Commerce, trade industries associations, entrepreneurs, government officials, services providers, and related people.

Details on Types and Numbers of Representatives

- FGD - Focus Group Discussions: Group size varied from 10 to 20, across provinces,
- Interviews

Several interviews were conducted during the field work. The average numbers of interviews with different stakeholders, cluster actors, are classified under the following:

- Government Officials - about 5 (five) in each province from the departments of industries, commerce, community development, trade promotion, and other
- Entrepreneurs - about 5 (five) in each province, representing different sector.
- Services Providers (BDS) - about 5 (five) persons representing banks, logistics, design, and others. One-on-one interviews were conducted with at an average 3 (three) entrepreneurs, and community enterprise owners
- BMOs (CCI, FTI, Associations) - about 5-7 (five to seven) persons from chambers of commerce, industry associations, cooperatives, and others

[3] *" Agglomeration economies are the benefits that come when firms and people locate near one another together in cities and industrial clusters." - Edward L. Glaeser in "Agglomeration Economics", February 2010, National Bureau of Economic Research*

Chapter B

Clusters & General Analysis

2.0 Stakeholders Perception on Trade Potential

2.1 General Analysis

Table 8: Trade Potential Matrix

Country	Cluster Name	Potentiality Factors		
		International Export	Regional Trade	Domestic Market
CAMBODIA	Bantey Meanchey Silk Weaving			
	Battambang Fish Sauce			
	Pursat Orange			
	Kampong Chhnang Pottery & Ceramics			
	Svay Rieng Rice			
	Koh Kong Fish Sauce			
	Kampot Natrual Salt			
	Preah Sihanouk Dry Shrimp			
MYANMAR	Dawei Mackerel			
THAILAND	Kanchanburi Banana (Fruit)			
	Ratchaburi Aromatic Coconut			
	Prachinburi Organic Rice			
	Sakaeo Herb			
	Chanthaburi Durian			
	Trat Health & Well-being Tourism			
VIETNAM	Ca Mau Dried Fish			
	Can Tho Catfish			
	Kien Giang Shrimp (Tiger Prawn)			
	Tay Ninh Custard Apple			

A Cluster Trade Potential Matrix has been presented here to understand the potential of identified clusters in terms of their export related development; i.e. linkage with Local and Global Value Chain (LVC and GVC). The matrix has been derived from the perception of the stakeholders opined in FGD and cluster stakeholders interview session. Suggested Action in terms of Pressure Points identified is directly corelated with this matrix. The colour indications used here are: High Potential – Green; Medium/Low potential – Orange and Very Less Potential – White.

It has been observed that out of 19 clusters, 10 clusters have very high potential for linkage in GVC. 9 clusters have very high potential for LVC linkage. But, it is an interesting fact that out of these 10, only 2 possesses very high potential for linkage in GVC.

The trend represents special characteristics of the cluster products. Out of 19 clusters selected, 15 are representing some sort of Food products which is nearly 78% of the total clusters. The regional speciality of these food products and their acceptability in other parts of the globe determines their trade potential.

Roadmap Matrix for the Clusters in 19 provinces of Vietnam, Cambodia, Thailand, Myanmar

Cluster	Skill Development Training	Managerial Training	Product Design	Product Diversification	Technology BDS	Marketing BDS	Export BDS	Packaging BDS	Finance	Logistics	Raw Material	B2B Portal	B2C Portal	ICT Tools - MIS, etc	Trade Fair	Exposure Visits	Testing Laboratory	Common Facility Centre	Women Entrepreneurship	BMO Capacity Building	Strategic Master Plan Development	Policy Advocacy
Cambodia																						
Bantey Meanchey Silk Weaving	+	+	++			+	+		+		++		+		+	+			++	+	++	+
Battambang Fish Sauce	+	+		+	+	+	+	+	+			+			+		+	+		+		
Pursat Orange			+	+	+		+	+	+	++		+		+			+			+	+	+
Kampong Chhnang Pottery & Ceramics	+	+	+	+	+	+	+	+	++		+		+		+	++			+	++	+	
Svay Rieng Rice		+		+					+			+					+			+		
Koh Kong Fish Sauce		+			+	++	++	+	+	+		+					+		+	+	+	+
Kampot Natrual Salt				+	+	+	+	+	+			+		+	+		+			+	+	
Preah Sihanouk Dry Shrimp	+	+			+	+	+	+	++	+					+	+	+	+		++		+
Myanmar																						
Dawei Mackerel	+				+			++	++	++	+	+					+	++	+	+	++	++
Thailand																						
Kanchanburi Banana (Fruit)	+		+		+	+	+	+	+		+		+				+		+			+
Ratchaburi Aromatic Coconut	+			+	+	+	+	+	+			+	+		+		+			+		
Prachinburi Organic Rice	+	+			+	+	+		++				+		+	+		+		+		+
Sakaeo Herb	+	+	+		+	+	+	+	++		+		+		+		+	+	+	+	+	+
Chanthaburi Durian			+	+	+		+	+	+			+		+	+		+			+		+
Trat Health & Well-being Tourism	+	+	+	+		+			++				+	+	+				+	+	++	++
Vietnam																						
Ca Mau Dried Fish	+				++	+	+	+				++				+	+	+			+	
Can Tho Catfish	+	+		+	+	+	+	+	+	+		+	+		+	+	+	+		+	+	+
Kien Giang Shrimp (Tiger Prawn)	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Tay Ninh Custard Apple	+				+	+	+	++	+		+				+		+	+			+	

Table 9: Roadmap Matrix for the 19 Clusters
Notes: i. Summarised from the responses of the stakeholders.
ii. + and ++ signs are subjective weights or importance given where ++ sign means more important than a + sign

Chapter C

Value Chains of SME clusters in 19 Provinces

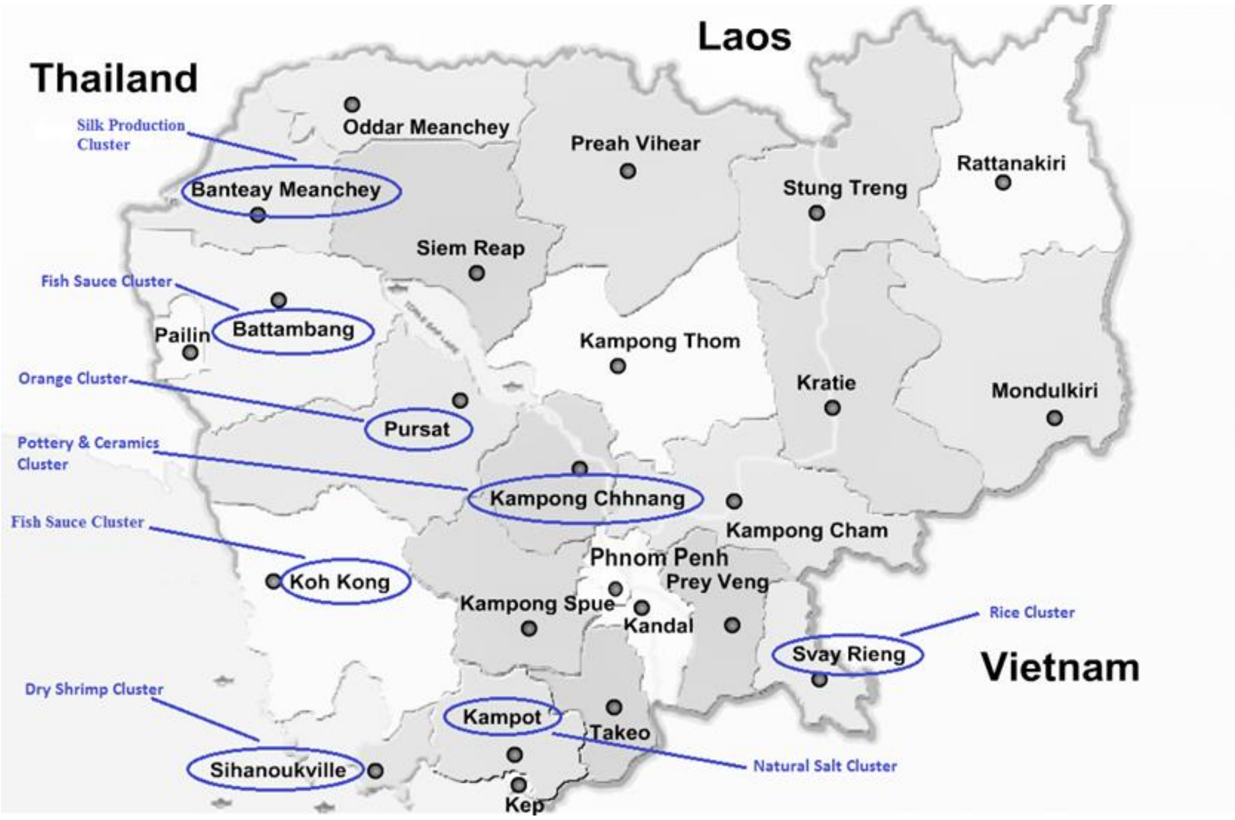
3.1 Cambodia

Provinces Name

- Banteay Meanchey
- Battambang
- Pursat
- Kampong Chhnang
- Svay Rieng
- Koh Kong
- Kampot
- Preah Sihanouk

Cluster Name

- Silk Weaving Cluster
- Fish Sauce Cluster
- Orange Cluster
- Pottery & Ceramics Cluster
- Rice Cluster
- Fish Sauce Cluster
- Natural Salt Cluster
- Dry Shrimp Cluster



Map 1: Provinces and Clusters in Cambodia

3.1.1 Banteay Meanchey Silk Weaving Cluster

3.1.1.1 Provincial Overview

Agriculture

- Rice Production (925 rice milling factories majority of which home based)
- Silk Production
- Sauce and noodles production

Cross-border Trade

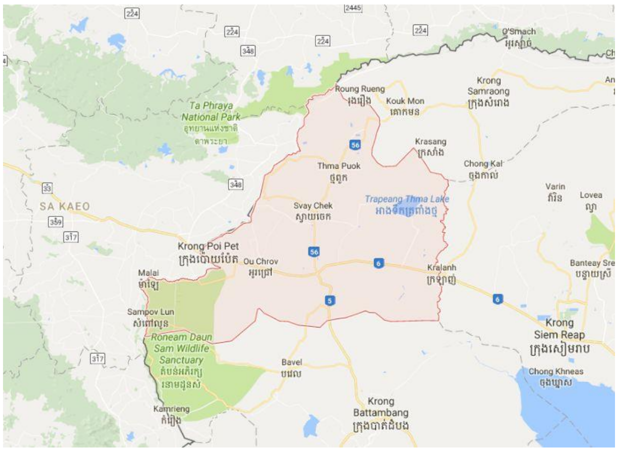
- 2 SEZ and 1 Industrial Park exist
- Some of the goods traded through Thailand border route include plastics, textiles, food and consumer goods.
- Good roads connectivity

Access to Finance

- Sathabana Commercial Bank
- 80% of banks lend to SMEs

Selected Product Cluster

Silk Weaving Cluster



Map 2: Banteay Manchey, Cambodia

About the Province

Area: 6679 sq. km area
Population: 678033 (2008)
GDP: Agriculture has the highest share of Provincial GDP
Border regions: International border with Thailand
Source: "Economic Census of Cambodia 2011 – Provincial Report"
By NIS; Ministry of Planning; Phnom Penh. February 2013
Map source: Google

3.1.1.2 Cluster Introduction and SWOT Analysis

Silk production is a widespread livelihood activity in many parts of the province. Silk in Cambodia is generally produced on a small scale and it is a female dominated activity. Men however assist in making and fixing the equipment. Today the production of raw silk in Cambodia is low compared to other silk producing countries like Thailand and Vietnam. Local silk production (400 tons nationally) can satisfy only 2% of total domestic demand throughout the country. In order to meet this demand, raw silks are imported from neighboring countries, primarily from Vietnam to produce silk products. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 9: Banteay Manchey Weaving Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Availability of skilled labour • Indigenous knowledge • Support from Department of Culture, Govt. of Cambodia • Easy to operate homemade looms	• Traditional product items and no design variations • Limited access to raw material • Lack of market development • Inadequate machine adoption • Lack of coordination and cooperation between different cluster actors
OPPORTUNITIES	**THREATS**
• Availability of modern technology • Availability of modern design • Government-supported logistics facility in preserving the sector • Access to high value export market	• Imported silk-based products • Labour migration • Fluctuating market price • Decreasing domestic demand

3.1.1.3 Value Chain Map of Banteay Meanchey Silk Weaving Cluster

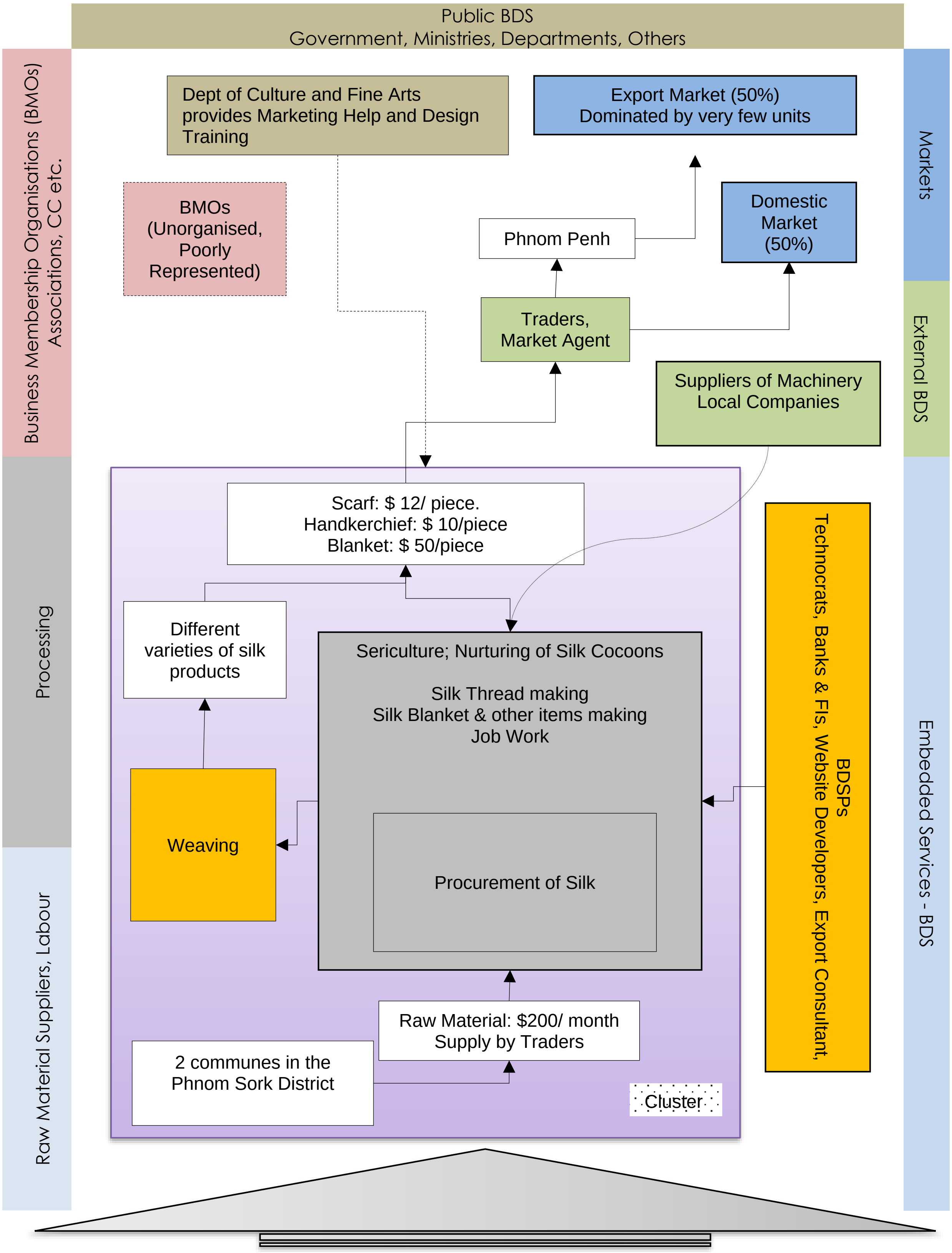


Figure 2: Value Chain Map of Banteay Manchey Silk Weaving Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Continious lines mean strong linkages

3.1.1.4 Banteay Meanchey Silk Weaving Cluster VC in Numbers

Table 10: Banteay Meanchey Silk Weaving Cluster in Numbers

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC	Comments
Step 1 – Silk Purchase / Raising the Silk Worm				
A private company provides silk for the villagers to weave for them, the villagers do not raise the silkworm by themselves. Only few villagers have raised the worm but not enough to provide the silk. The looms belong to the villagers.	Only few villagers have raised the worm but not enough to provide the silk. The looms belong to the villagers.	Silk producers Silk weavers Silk sellers Silk sellers and final product sellers	Domestic value chain	Raises economic activities for women.
Step 2 – Looming				
In Phnom Srok district there are 2 Communes make silk weaving. Poycha and Sra Chik. In Poycha alone, 3 villages make silk weaving **1) Poy Snoul = 18 looms** **2) Poycha = 35 looms (30 owners)** **3) North Trapeng Thmor 20 looms (2 place raise the silkworm)**	Products (per loom) - Handkerchief around 30 pieces/month - sell 12 $ (get 5 $/piece for the labour) - Blanket around 15 pieces/month – sell 50$	Silk weavers Silk product Silk final product sellers	Silk weavers	Family labor: 2 supervisors (1 day/person) to monitor the cleaning of fresh fishes. [cost for family labor is 250.000 VND/day if payment is made actually]
Step 3 – Selling				
Products (per loom) - **Handkerchief around 30 pieces/month - sell 12 $ (get 5 $/piece for the labor)** - **Blanket around 15 pieces/month – sell 50$**	Diverse silk products sold from 12-15 $	Contract buyers	BDS Providers: Not available	BDS providers to promote exporting: Not Available

3.1.1.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Raw material supply constraint resulting from lack of quality silk found locally and at the required quantity;
ii. Dependency on large traders' purchase orders that result in reduced access to final customers and lack of motivation in design innovation;
iii. Lack of awareness of support eco-system for community enterprises producing silk;
iv. Manual processing of silk result in variable quality and eventually make the producers vulnerable to the negotiation with the large traders;
v. No organised marketing and business development activities as large traders deal directly with the producers keeping in mind their individual capacity which result in weak effort in building brands and marketing and try design innovation at an increased price;
vi. Limited and irregular access to design and BDS support that result in continued marketing weakness and long term commitment with the large traders.

3.1.1.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the clusters involve the following:

i. Creation of Raw Material Bank through organised association may reduce the vulnerability coming from the regular supply of quality silk;
ii. Market linkages through creation of high-tech embedded BDS which calls for close contact with the buyers in the foreign market with a high demand for silk .e.g. Japan and establishes computerized distant quality control mechanism to ensure high quality at the producers' end;
iii. Linkages with design development institutes will expose the producers with numerous design variety and access to additional clients;
iv. Marketing support by BMOs that will first require strong association bonding among the producers which in turn also create enough demand for marketing services from the BDS providers in the province;
v. Product diversification can also ensure access to additional clients;

vi. Policy advocacy for sericulture development can bring great changes to the way producers run their enterprises, through accessing tax incentives and export cash subsidies, subsidized fair events within the country and the region, government procurement for special purposes, government supported campaigns in favour of using silk etc.

3.1.2 Battambang Fish Sauce Cluster

3.1.2.1 Provincial Overview

Main produces / products

- Main products in the province include:
  - Battambang grapes & wine
  - Battambang orange (no processing facility / value addition)
  - Fish meatball
  - Fish sauce
  - Rice
  - Mug bean, green bean
  - Balm oil
- Rice accounts for 75% of total trading
- Limited modern facilities available for agro- processing

Access to Finance

Phnom Penh Bank
Loan to farmers (agriculture and fishing)
Commercial Loans are priority sector

AMK Microfinance
Loan to SMEs- priority
Business loan, personal loan
Total disbursement till June: 17 million USD

Selected Product Cluster

Fish Sauce Cluster
Total number of units are 7
Direct employment in total 150

Map 3: Battambang, Cambodia

About the Province
Area: 11,702 sq km
Population: 1126345
One of the most important trading City
Source: "Economic Census of Cambodia 2011 – Provincial Report" By NIS; Ministry of Planning; Phnom Penh. February 2013
Map source: Google

3.1.2.2 Cluster Introduction and SWOT Analysis

Fermented fish in the form of fish sauce, known as 'Tuk Trey' in Cambodia, is a very important culinary adjunct providing micro minerals and micro nutrients essential to healthy life. Battambang host a large number of fish sauce factories out of a total of nearly 800 fish sauce factories throughout Cambodia. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 11: Battambang Fish Sauce Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• High market demand • Availability of fresh fish • Availability of other ingredients	• Lack of pro-active BMO • Units have limited market access • No quality control • No export / marketing brand
OPPORTUNITIES	**THREATS**
• Regional market demand is very high • Traditional skill is available • Land Area for expansion is available • Capacity expansion indicating positive outlook	• Infiltration of Thailand-based products • High tax for boiler • Increasing competition from other AEC zone countries; i.e. Vietnam

3.1.2.3 Processing of Fish Sauce

Figure 3: Processing Steps of Fish Sauce

3.1.2.4 Value Chain Map of Battambang Fish Sauce Cluster

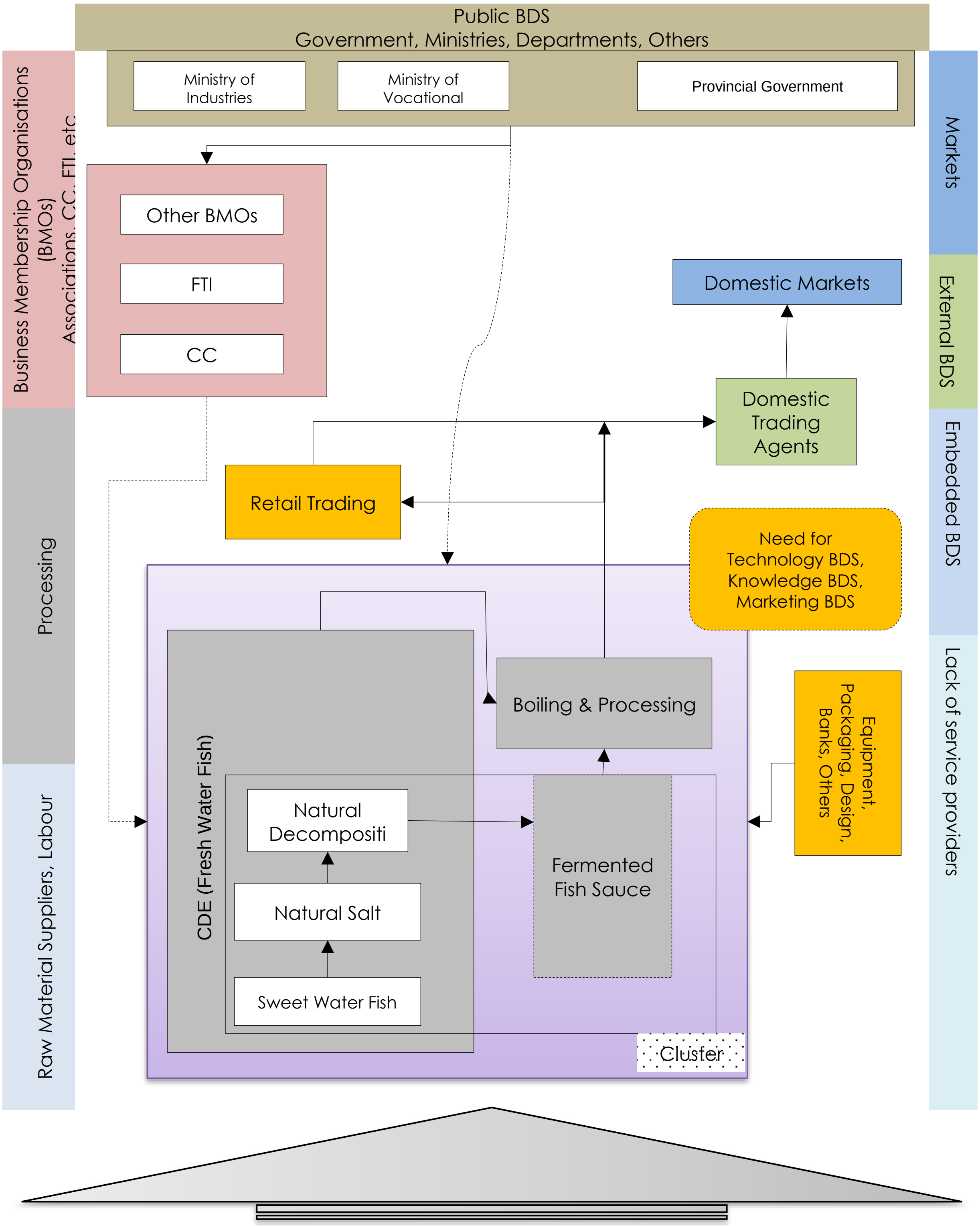


Figure 4: Value Chain Map of Battambang Fish Sauce Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Continuous lines mean strong linkages

3.1.2.5 Battambang Fish Sauce Cluster Value Chain in Numbers

Table 12: Constraints of the Cluster and the Value Chain

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC
Step 1 – Procurement of Fish and Ingredients			
From the cost and revenue analysis of Ponler Preah Atit Fish Sauce, Romcheck 4 Village, Ratanak District, Battambang City. **Procurement of fish:** **During Nov. and Dec. 12 T (2 barrels) as annual requirement.** **Procurement of fermented fish sauce:** - **One year 1200 baskets** - **One basket = 30 Lit** - **One basket = 40000 R**	Cost of ingredients - 1 kg = 2000 R - Salt = 340 R/kg - Salt is 30 % of 100% - Renting stock for the fish 200 $	Fish traders, input sellers	Domestic value chain
Step 2 – Processing and boiling			
One month of boiling with the fermented fish sauce. Keep 6 months to get the fermented fish sauce. **180 skets (1 day = 3 to 6 baskets)**	Cost of processing - Firewood 5 metre/day (1 metre = 50000R) - Electricity 160$/month - Water 800000 R/month - Salt 300kg/day - Sugar 32kg/day (1kg=2000R) - Kamel (for making fish sauce color) =30$/month; Iron 3kg/day (1kg=10$)	HH members Hired workers	Domestic and regional value chain
Step 3 – Packaging and Selling			
Packaging - **Bottle 1 unit = 300 R** - **Cover 1 unit = 60 R** - **Tag 1 unit = 50 R** - **Cable 1 unit = 20 R** - **Plastic 1 unit = 150 R** - **Bag 1 unit = 30 R** - **Rubber 1 unit = 0.5 R** - **1 bottle = 0.75 Litre** **Selling: 6500 R/6 bottles**	Cost of packaging (workers) - 14 people - Salary = 400000 R/person/month - Food, water, electricity 8000 R/day - Social security 60000 R/month - Care insurance 280 $/year - Security guard 140$/month - First aids kid 150000 to 200000 R/month	Wholesalers Traders	

3.1.2.6 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Scale of production (lack of economies of scale) coming from traditional smaller units of production without strong business cooperation links among the producers;
ii. Investment capacity of producers is limited when it comes to purchasing capital equipment like boiler and there has been little cooperation among the producers in the use of shared capital assets;
iii. Mechanization, testing and international quality certification has been identified as a major constraint as maintaining quality of the processing and ingredients proved to be a concern;
iv. Failure in compliance of proper hygiene practices in processing also contribute to quality of the products;
v. Producers / SMEs here have little experience in forming associations activate the same to achieve strength in marketing and procurement affecting independent well-being of all producers;
vi. Since there have been limited association-based activities or even consortia formation among the producers, demand for business development services has never been significant enough to encourage service providers to come forward and support the producers.

3.1.2.7 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the clusters involve the following:

i. Support to mechanization of few large producers to ensure quality and build awareness among the producers towards a common quality management;
ii. Introduce ToT (Training of Trainers) course to ensure standard and quality training and dissemination and implementation of the quality programs among the producers;
iii. Quality program will also facilitate packaging with nutritional and quality label;
iv. Market development and market diversification which would include connection to new clients and markets through an interactive database. This arrangement can also support formation of export consortia among the producers and increase over-border and overseas trade;
v. Introduction of embedded BDS which can emerge from 'value business value partners' or investors and can improve the quality and capacity of the producers fit for an upper-end consumer market;
vi. Business Matching Programs can be initiated with the help of online database requesting technical support or it may also be supported physically or through face-to-face communication.

3.1.3 Pursat Orange Cluster

3.1.3.1 Provincial Overview

Total producers = 2066 (out of which 202 producers are not registered)

SEZ: Province Is going to have 1 SEZ

Govt. Support: Govt. plans for developing the SMEs in the province through diverse support schemes

Products: Important products in the province include:

- Stone/marble
- Rice
- Maze
- Cassava
- Pepper
- Orange
- Palm sugar

- Non availability of resources
- Lack of entrepreneurship

<u>**Selected Cluster**</u>

Orange Cluster

Total farming area consisting of four villages

- Angkrong Village
- Tades Village
- O Preal Village
- Rovieng Village

Map 4: Pursat, Cambodia

Area: 12692 sq km
Population: 425704
According to available economic census reports, Pursat is ranked 14th as per number of establishment (which is around 12075; including street business) and 15th as per number of employee engagement.
Source: "Economic Census of Cambodia 2011 – Provincial Report" By NIS; Ministry of Planning; Phnom Penh. February 2013
Map source: Google

3.1.3.2 Cluster Introduction and SWOT Analysis

In Pursat province, orange orchards can be found in Dob Bath, Roleap village, Sampov Meas and Bak Chenh Chean commune, and Phnom Kravanh district. Oranges are considered an special fruits in this province and fresh oranges are usually displayed and sold along the sidewalk on the eastern side of

Pursat market. '270 Trees per hector' is an average cultivation estimate while a total of 131298 trees are estimated in the province, 40700 of those trees are in cultivation range. Average yield per tree is estimated at 440 fruits in one season. Price varies from USD 5-10 per "Phloun" (44 fruit = 1 Phloun). The identified strengths, weaknesses, opportunities and threats are listed below:

Table 13: Pursat Orange Cluster SWOT Analysis

STRENGTHS	**WEAKNESSES**
• Unique natural and climatic conditions (soil, tropical climate) • Large available land for firming • Traditional knowledge of farming • Constant market demand	• Shortage of irrigation facility • Lack of market development with further processing (e.g. juice making) • Inadequate technology adoption • Lack of cooperation among cluster actors • No storage and processing facility available
OPPORTUNITIES	**THREATS**
• Modern technology to boost sorting / processing • Use of better seeds • Emerging technologies in food processing • Govt. support logistics facilities through SEZ • Upcoming SEZ to facilitate further processing • Contract farming and commercialization	• Inadequate irrigation system • Occasional dry climate and seasonality causing drop in production and pushing up prices • Fluctuating market price of Orange

3.1.3.3 Value Chain Map of Pursat Orange Cluster

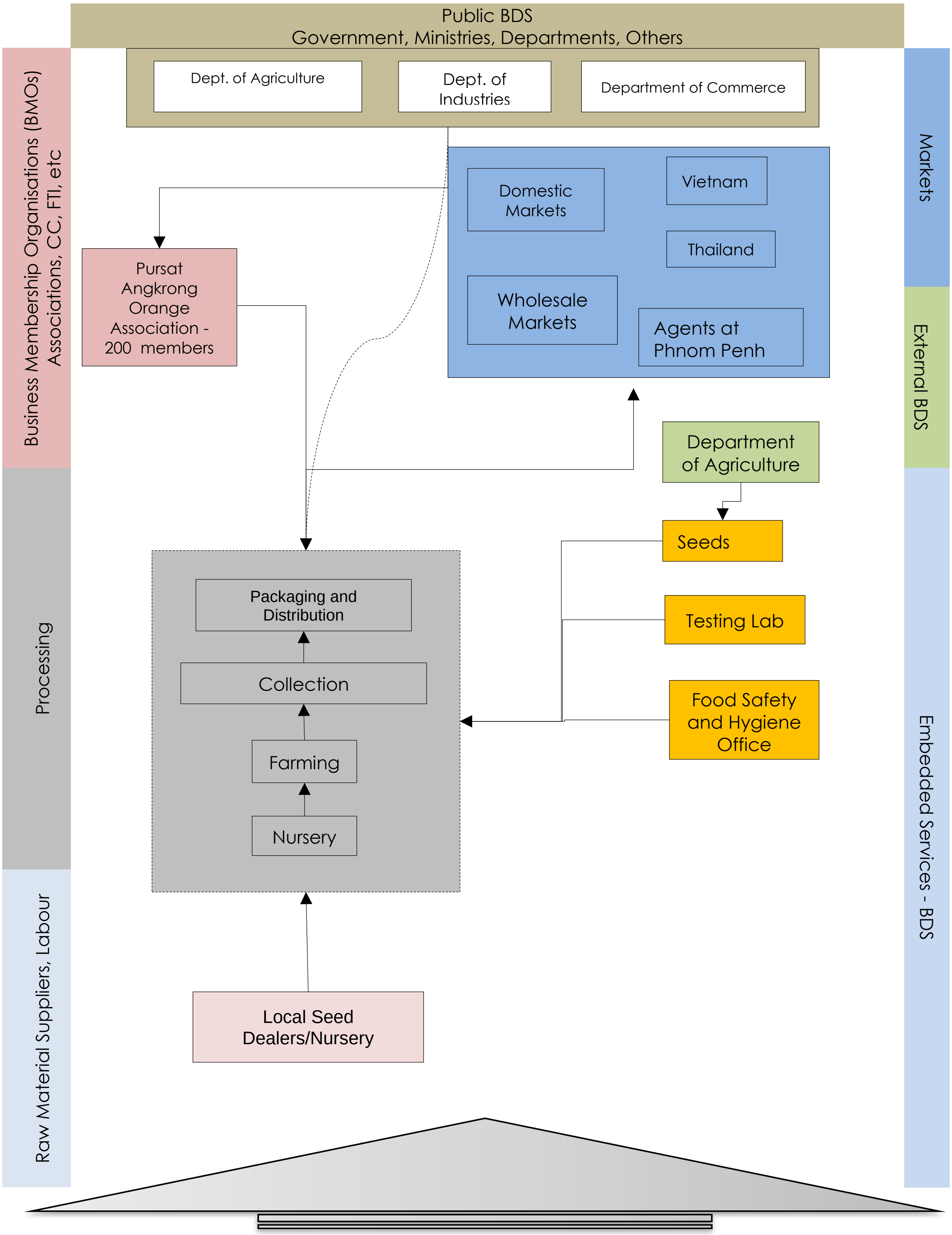


Figure 5: Value Chain Map of Pursat Orange Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.1.3.4 Pursat Orange Cluster the Value Chain in Numbers

Table 14: Pursat Orange Cluster the Value Chain in Numbers

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC
Step 1 – Plantation			
Plantation area includes Angkrong Village, Tades Village, O Preal Village and Rovieng Village. Angkrong village data shows total plantation of 131298 Trees with 270 tress in 1 hectare and 40,700 trees are being cultivated / harvested	Yield 1 tree = 10 Phloun = 440 fruits 1 Phloun = 44 fruits	Farmers Nursery	Domestic / Regional value chain
Step 2 – Harvesting			
Cultivating 2 times per year - **Sept – Dec** - **Mar – Apr (20 to 30 % of the 1st cultivation)**	Selling price 1st : 1 Phloun = 20000 to 25000 R 2nd : 1 Phloun = 35000 to 40000 R	Farmers Hired workers Traders	Domestic and regional value chain
Step 3 – Sorting and packaging			
Selling channels through middlemen to - **Phnom Penh** - **Battambang**	Sold as generic products. Not much sorting and packaging functions available.	Traders	

3.1.3.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. No processing facility (e.g. juice processing) nearby. Thus value addition becomes restricted to farming practices, harvesting, sorting, grading, post-harvest storage, packaging and transportation;
ii. Though there are many orange growers in the region, there is no organized efforts in negotiating with the local authorities in technology upgrade and / or seeking marketing services in a group;
iii. Overseas market competition is another constraint that needs to be addressed through branding and packaging;
iv. Lack of export market research and limited contact with buyers result in dependency on the channel intermediary about market information and prices;
v. Lack of value addition in improved industrial packaging results in low access to quality logistic services;
vi. Information asymmetry leads to lack of awareness on the part of entrepreneurs about Government-led supportive schemes;
vii. Non-compliance with good farming practices remains another key constraint.

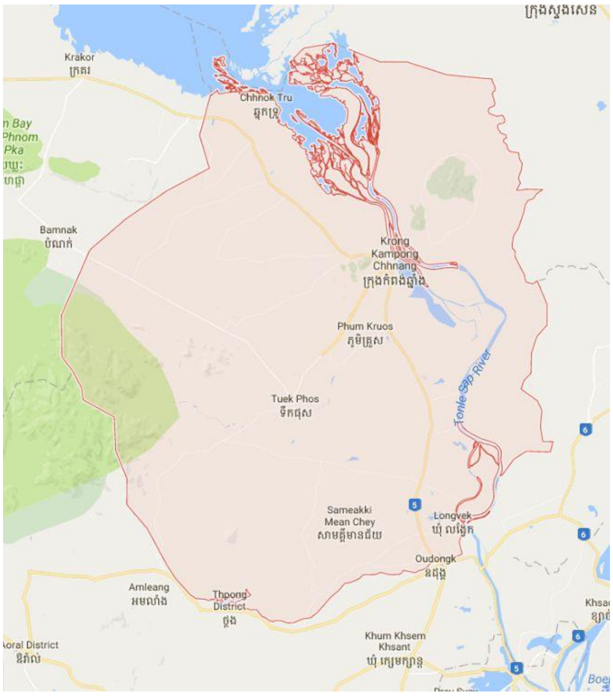
3.1.3.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the clusters involve the following:

i. Organizing the cluster members so as to make them good candidate for common facilities and cluster-wide investment or technical assistance;
ii. Cluster actor development that would enable better business relationship between growers, transporters, processors and wholesalers / exporters;
iii. Development of export consortia through better organizing the cluster members is a key to overcome organizing problems in the cluster;
iv. Export market research through interactive online database and access to e-commerce platforms by lead / large institutional growers;
v. Hi-end testing lab for processed fruits can be initiated to promote further value addition by processing of oranges.

3.1.4 Kampong Chhnang Pottery & Ceramics Cluster

3.1.4.1 Provincial Overview



Map 5: Kampong Chhnang, Cambodia
Map source: Google

Major Agro-products

Agro products includes mug bean, lotus seeds, and palm sugar

- Very low industrial presence
- Lack of Infrastructure, Resources and Finance

Access to Finance

- Prasak Microfinance: Loan for productivity improvement
- Working with SMEs

Identified Product Cluster

Pottery and Ceramic

Area: 5521 sq km
Population: 512667
Agro based province with less industrial development
Source: "Economic Census of Cambodia 2011 – Provincial Report" By NIS; Ministry of Planning; Phnom Penh. February 2013

3.1.4.2 Cluster Introduction and SWOT Analysis

Kampong Chhnang, meaning 'Port of Pottery' in Khmer is centrally located in the Tonle Sap Lake region of Cambodia and as the name suggests, is well known for its pottery. The province consists of eight districts, 69 communes and 546 villages. The province, located some 91 kilometers north of the country's capital Phnom Penh. From one generation to another, locals have followed their ancestors' tradition in making pots, vases and various objects from clay during slack seasons. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 15: Kampong Chhnang Pottery & Ceramics Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Traditional Skill available • Demand is available for handicraft product items • Required soil is easily available	• Poor infrastructure • Traditional technology, mainly manual • No market access • Poor finishing • Lack of working capital leads to poor raw material usages, thus low quality production
OPPORTUNITIES	**THREATS**
• Modern technology available • Tourism creates export demand • Opportunity for product diversification • Capacity expansion indicating positive outlook	• Imported products • Poor quality leads to lower price and lower profitability • Non-availability of Pollution control mechanism

3.1.4.3 Pottery & Ceramics Production Process

Figure 6: Pottery and Ceramics Production Processing Steps

3.1.4.4 Value Chain Map Kampong Chhnang Pottery Cluster

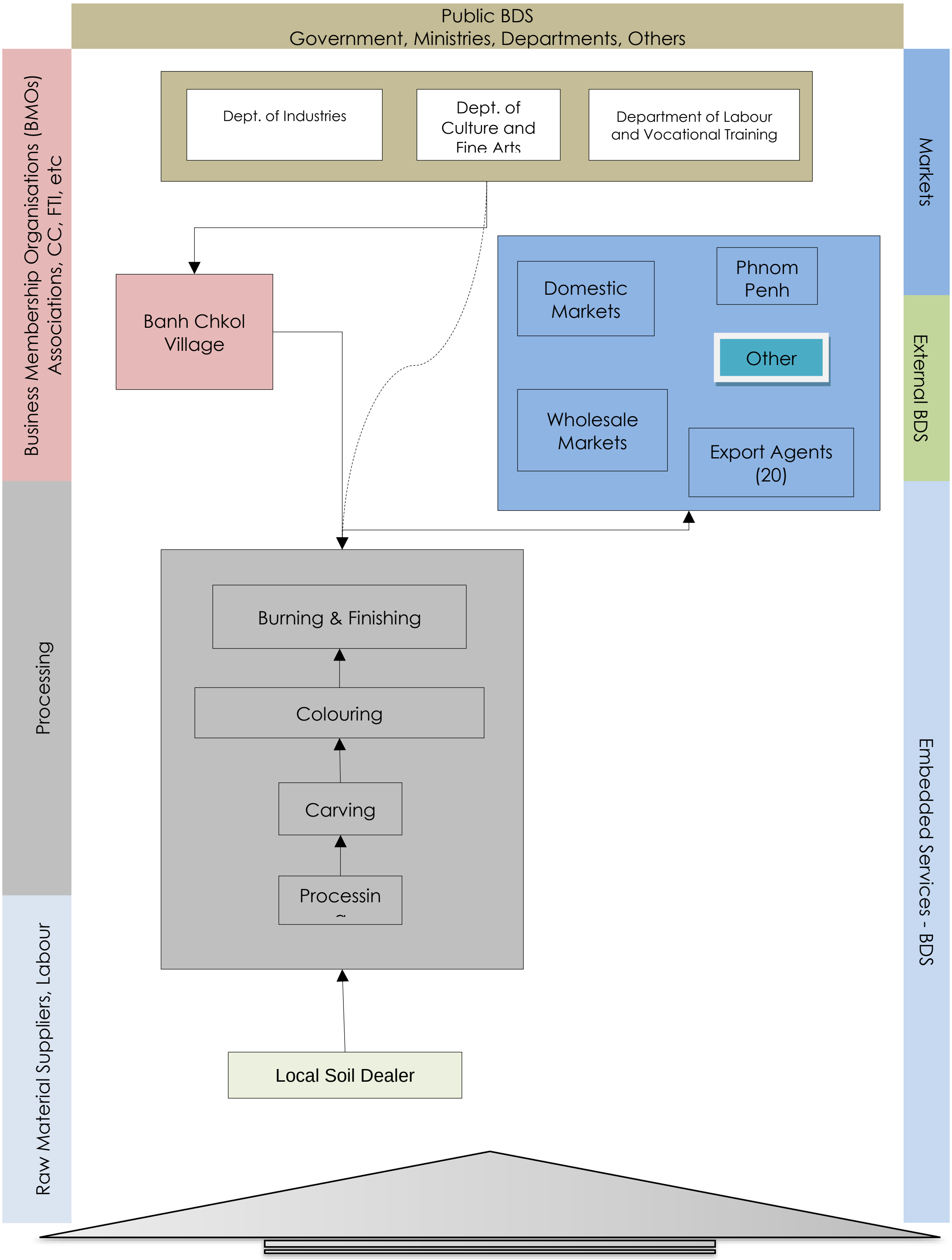


Figure 7: Value Chain Map Kampong Chhnang Pottery & Ceramics Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.1.4.5 Kampong Chhnang Pottery Cluster Value Chain in Numbers

Table 16: Kampong Chhnang Pottery Cluster Value Chain in Numbers

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC
Step 1 – Soil collection and preparation			
Collection and processing of soil - **One ton every 3 months = 5000 R** - **Get the soil – dry – put in the water – mix = 5 days (Grinding 6=7 kg = 600 R**	Wages - Making soil = 80 to 90 USD - Curving = 150-200 USD	Producers Soil traders	Domestic value chain
Step 2 – Production			
Making the product **curving – burn – ceramic = 2 weeks**	Production cost - Color water = 10 kg cost 40 USD - Around 200 pieces - Burn 2 times/month - Firewood and gaze 110 USD	Producers Hired workers	Domestic value chain
Step 3 – Marketing and Sales			
1 standard pack of pottery / ceramic production = 100 USD	Marketing cost - Send through bus to Siem reap around 1 to 2 packs/time - 1 pack around 50 pieces = 10000 R - Send to Phnom Penh by themselves, 1 time around 100000 R (5/6 packs)	Traders	Domestic and occasional regional value chain

3.1.4.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Like in many other clusters in Cambodia, Campong Chhnang is not organized very well to take advantage of support services provided by the local authorities, to get benefitted from marketing service providers etc.;
ii. The province promoted traditional art of pottery which has its significant share of market. However, design innovation to adapt the design theme in other product line has not been experimented and as result the pottery art is applied to a handful of traditional items;
iii. The Khmer traditional art is practiced in many villages and since there is no organized marketing, the products remain at odd while competing in the overseas market with similar products vying for their stake;
iv. There has not been enough research on finding new market or adapting the pottery design theme to cater to new product ideas;
v. Limited cross border trade in GMS has also been identified as another constraint;
vi. As it has been mentioned earlier that the pottery has rather depended on traditional manual operation with basic tools and techniques. However, the markets or clients often require that the volume of the first orders should be large enough to cater to their client base. But without access to and adoption of modern tools and technologies, the production cannot be scaled up and hence the new market cannot be approached;
vii. Smaller lots of products translate into lack of quality logistic services.

3.1.4.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the clusters involve the following:

i. Clustering activity through awareness creation among the cluster members;
ii. Technology intervention through introduction of new tools to achieve time efficiency;
iii. VC up-gradation along the actors to particularly strengthen government support, marketing and branding services, greater cooperation among the cluster members and promoting access to new clients and markets;
iv. BDS market development through strengthening the cluster and making the sector attractive to service providers to come forward benefitting each cluster members;
v. Formation of export consortia and development of export market to achieve new markets for the cluster members and to boost total sales, total output and increase jobs;
vi. Export market research with the help of interactive online database and train the cluster members to take most advantage out of it;

vii. Cross border trade facilitation by simplifying the trade procedures with a strong association by the cluster members;

viii. Logistics service development by introducing suitable packaging and transport to support the fragile nature of the products and to achieve cost advantage tagging with some other products to be serviced together; Hi-end design and quality programs to facilitate export.

3.1.5 Svay Rieng Rice Cluster

3.1.5.1 Provincial Overview

Available Products

Rice (Srov Smach) – red color – total cultivable area: 132 hec. (yield 1800kg/hec, 4000 riels/hec)
Sugar cane – total land 25000 hec (60T/hec)
Cassava – Total land 7000 hec (20T/hec.)

As per economic characteristics of Svay Rieng province, the largest revenue earning source of the province is "Wholesale and Retail Trade" followed by "Manufacturing" and "Arts, Entertainment and Recreation".

Access to Finance

Improvement of agri-finance in recent years

Identified Produce Cluster

Rice

About the Province

Area: 2966 sq. km area,
Population: 500275
Long border with Vietnam

Map 6: Svay Rieng, Cambodia
Map Source: Google
Source: "Economic Census of Cambodia 2011 – Provincial Report" By NIS; Ministry of Planning; Phnom Penh. February 2013

3.1.5.2 Cluster Introduction and SWOT Analysis

Rice has been chosen as the top priority agro- product of this province considering the growing export of rice from this province and the numerous family-led farming and trading businesses that are un operation and employ a large section of the working population in this province. Here, rice can both be scaled-up for export, promoting improved farming practices, commercialization through contract farming, facilitating access to finance to purchase high quality inputs during the sowing and cultivation time. Rice can also be diversified (e.g. ecological rice) as value added products considering the growing rice niches around the world. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 17: Svay Rieng Rice Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Unique natural and climatic conditions (soil, tropical climate) • Proximity to border • Traditional knowledge of farming practices with supportive natural resources and conditions	• Traditional farming practice and lack of exposure in improved farming • Weak market development for high value products (e.g. ecological rice, sticky rice) • Inadequate technology adoption to achieve production efficiency • Lack of coordination and cooperation between different cluster actors • No post-harvest storage facility

OPPORTUNITIES	THREATS
• Modern technology may boost production • Availability of variant good quality seeds • Emerging technologies in rice cultivation / milling • Logistics facility is in good progress – thanks to supportive programs and schemes	• Dry climate and seasonal fluctuations with inadequate irrigation facility • No contract farming or modern production partnerships that may lead to the possibility of accruing stocks and loss of revenue and low production of rice in the subsequent years

3.1.5.3 Value Chain Map of Svay Rieng Rice Cluster

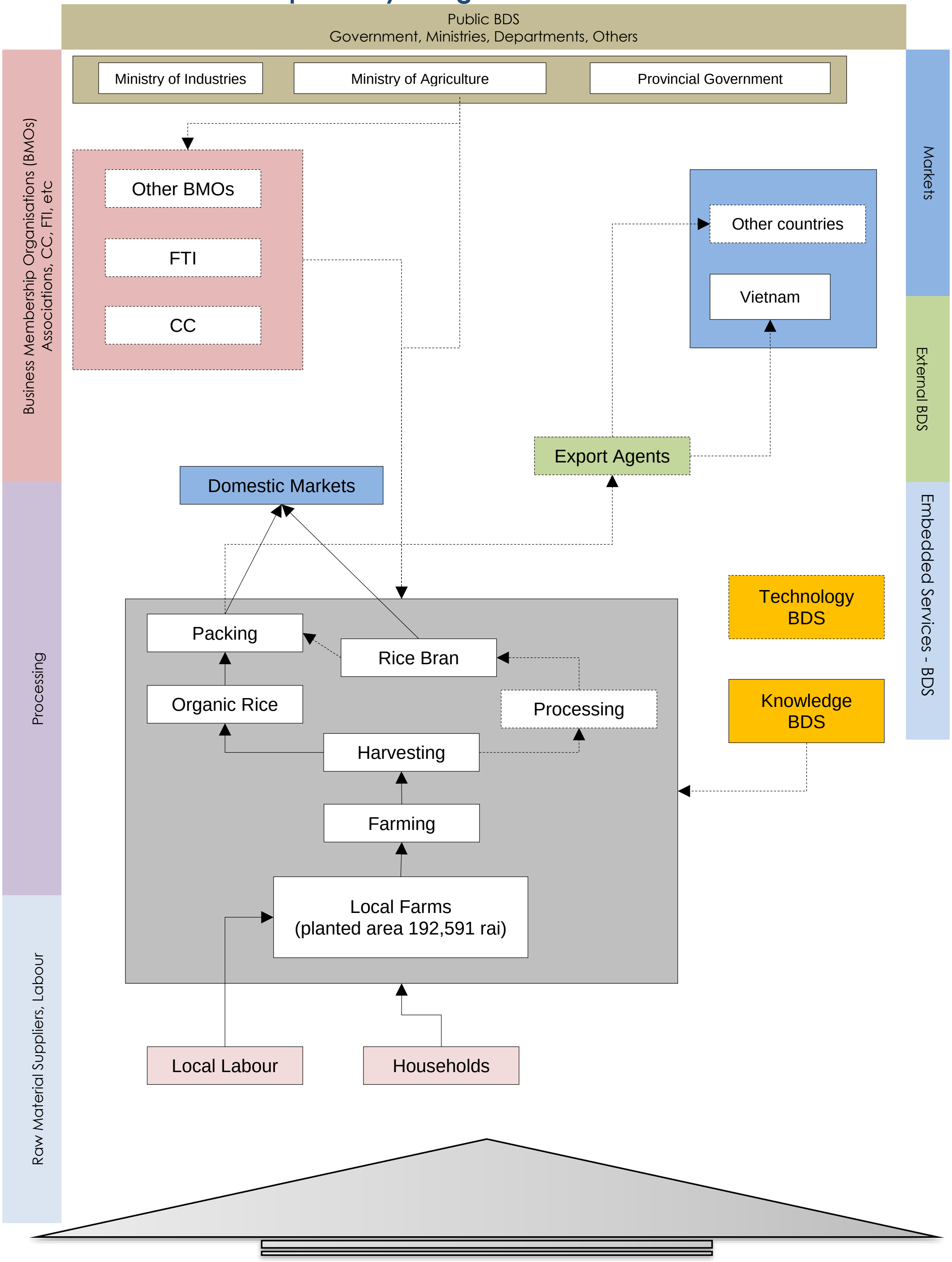


Figure 8: Value Chain Map of Svay Rieng Rice Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.1.5.4 Svay Rieng Rice Cluster the Value Chain in Numbers

Table 18: Svay Rieng Rice Cluster the Value Chain in Numbers

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC
Step 1 – Land preparation			
Land area: 4400 hec. **Member of Rice Assoc. 58 farmers / traders**	Irrigation: Only depend on rainfall one time a year for rice production Water consumption underground water – 30 meters digging	Producers	Domestic value chain
Step 2 – Plantation and farming practice			
Rice production cost per hec. **Seed = 0 Sowing = 130000 R** **Fertilizing= 130000R Watering/grassing= 0** **Nutrient - Fertilizing = 290000 R x 3 times** **Harvesting – rice reaping = 300000 R**	Fertilizer commonly used from Vietnam and from Japan In the whole district 70% use Vietnam, 30 % use Japan	Input manufactures and traders	Domestic value chain
Step 3 – Harvesting and Sales			
Rice yield average 2T/hec (sell at 1kg=750r.)	Share pattern: 50 to 60% sell – the rest for family consumption. Interest rate from Microfinace = more than 1200000 r. at 3%/month	Traders	Domestic and occasional regional value chain

3.1.5.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified:

i. There have not been much clustering activities among the rice producers which is crucial to adapting to new farming practices and use of inputs;
ii. Irrigation has rather been traditional and based on rainfall. However, as production is scaled-up, improved irrigation practices all over the year is necessary and drought-resistant rice species needs to be introduced;
iii. Dependency on informal cross border trade for further processing mostly over the border to Thailand provides alternation channel for the producers to sell. However, without formal production arrangements, the producers may become vulnerable to market fluctuation and channel cartel; Lack of marketing support for different products e.g. rice bran;
iv. Traditional farming techniques that are not suitable to scaling up production;
v. For high value products, modern packaging with nutritional label is necessary while for mainstream products suitable industrial packaging is a priority;
vi. This is a major cross-border trade practice where paddy or rice-harvest is transported over border for milling and further processing. However, value addition in the farming and post-harvest facility is weak so as to strengthening and formalisation of the trade relationship between the producers and the over-border millers.

3.1.5.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the clusters involve the following:

i. Efficient irrigation in the traditional low season and mechanisation of the agricultural practices remains a priority. For this embedded services together with capital machinery is a key so that users can take full advantage of mechanisation and achieve the required efficiency;
ii. Cluster strengthening can also be taken place by selecting and training of lead farmers to convey farming knowledge to the rest of the cluster members through group learning sessions and managing demo plot(s);
iii. Development of 'agri-management support system' can be initiated with online / mobile enabled information about the weather and soil condition and the use of appropriate input to reduce vulnerability at the producers' end;
iv. On-the-field 'quality testing' would help farmers to reduce vulnerability and also support harvest grading and storage priority while competing on storage facility;
v. Ecological rice is a growing demand from foreign markets where origin of rice weather and the people, involved can also add value making it traditional or fair-value products. To tap this market improved packaging, labelling and branding are significant steps forward;
vi. Access to finance in agriculture, though has been improved recently, is still needed to be improved, particularly in rice farming. Since there is no contract farming, it becomes difficult for the financial institutions to determine financial needs and follow proper assessment of the loan applications. Over-border millers are not engaged directly with the farmers. As a result, there is

a vacuum of information in the Cambodian banking practices while it come to financing ricer producers;

vii. Policy advocacy may bring solutions to many of the problems stated above including access to finance which again requires strengthening of leadership in the cluster.

3.1.6 Koh Kong Fish Sauce Cluster

3.1.6.1 Provincial Overview

Koh Kong province is largely a forested mountainous area, not easily accessible by road or other means. Total number of fish-sauce establishments across the province is around 5051.

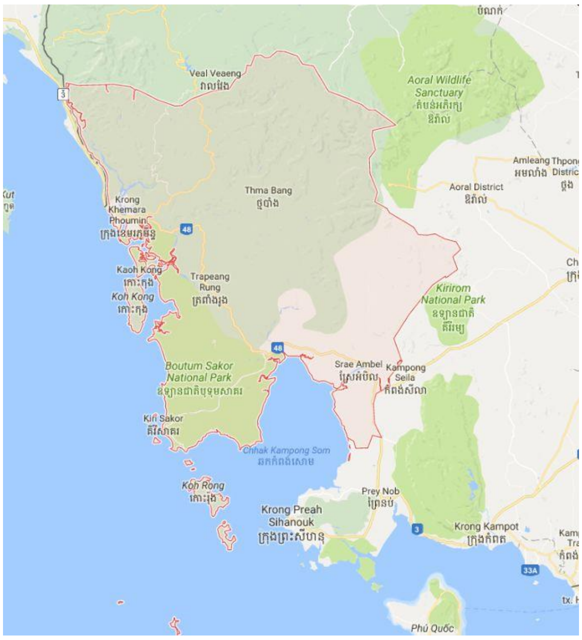
Department of Commerce, Cambodia has identified sea produce, honey, sugar and banana wine as potential areas in Koh Kong province to develop the market, strengthen the quality and raise the income of the farmers. However, 'cluster' is somewhat absent among these producing communities who are rather independent in producing fish sauce and is entirely dependent on the market intermediary for sale of their products.

Challenges of SMEs in the province:

- Access to finance;
- Technical and value chain development;
- Process and packaging development;
- Lack of interest and knowledge;
- No network/SME clusters;
- Marketing/lack of information.

Identified Product Cluster

Salt Water Fish Sauce



Map 7: Koh Kong, Cambodia

About the Province

- **Area:** 10090 sq km
- **Population of the province:** 133047
- One of the most important province in Mekong Delta

Source: "Economic Census of Cambodia 2011 – Provincial Report" By NIS; Ministry of Planning; Phnom Penh. February 2013
Map: Google

3.1.6.2 Cluster Introduction and SWOT Analysis

The fish-sauce cluster in the province plays a great role in local and regional gastronomy and provides for part-time employment to many households in the province. Traditionally, women take the role of the fish-sauce processing while the male members often contribute in technical fix-up, transportation of the ingredients and processed products. The ingredients include one or more of diverse sea-sourced food that are commonly used in the fish-sauce serving a range of culinary needs. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 19: Koh Kong Fish Sauce Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Constant regional high market demand • Availability of fresh salt water fish and sea food • Aavailability of workers with indigenous knowledge of producing fish sauce	• Lack of pro-active BMOs to strengthen clusters • Smaller units tend to depend on occasional sales orders from channel intermediaries • Lack of knowledge about hygiene and food processing quality programs • Poor packaging and weak access to packaging services due to remote and disperse locations

OPPORTUNITIES	THREATS
• Knowledge-base of traditional skill • Availability of land for expansion of units • Forging regional value chain competitiveness together with Thailand and Vietnam both specializing in this category of products	• Infiltration of Thailand-based products being traded unofficially • High tax for boiler import • Increasing competition from other GMS countries; i.e. Vietnam

3.1.6.3 Value Chain Map of Koh Kong Fish Sauce Cluster

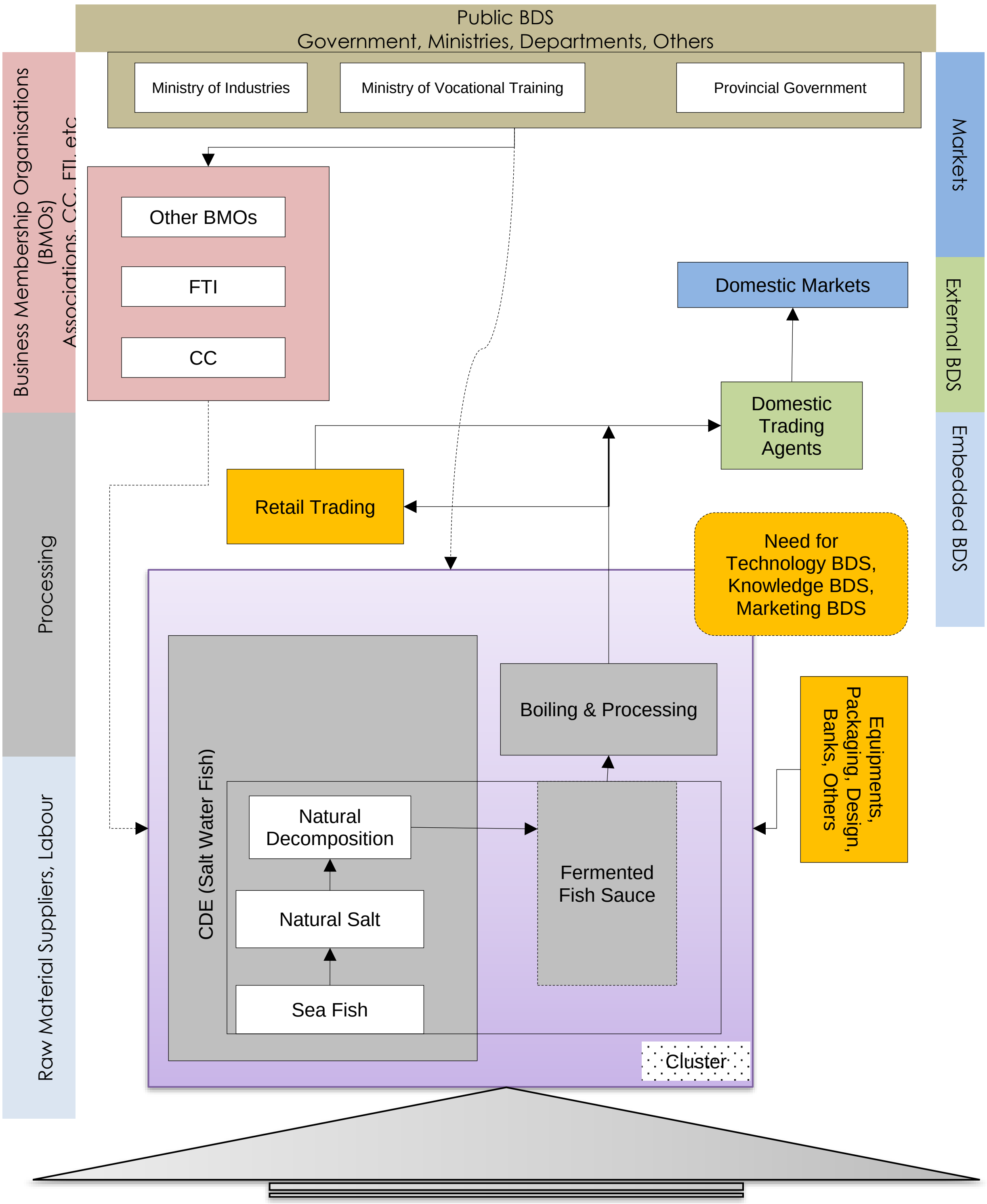


Figure 9: Value Chain Map of Koh Kong Fish Sauce Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkage

3.1.6.4 Koh Kong Fish Sauce Cluster Value Chain in Numbers

Table 20: Koh Kong Fish Sauce Cluster Value Chain in Numbers

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC
Step 1 – Procurement of Fish and Ingredients			
Fish bought directly from fishermen's catch	A small producer can make 12 jars of fish sauce - One jar = 8 Ton - Proportion 30% are salts	Fishermen Producers	Domestic value chain
Step 2 – Processing			
- **Fish mixed with salt** - **Get the already mixed fishes (mix with salt) and put into the jar** - **6 months of processing to get the 1st grade of fish sauce** - **Next 0.5 month to get the 2nd grade** - **Next 0.5 month to get the 3rd grade**	Production volume - Produce 8 jars per time - 1 month could produce 10000 liters Staffed mostly by household members	HH members Hired workers	Domestic and regional value chain
Step 3 – Packaging / bottling and Selling			
Producers sell the fish sauce in large jars **No packaging or bottling functions take place at producers' end**	- First grade 20000 R/liter - 2nd and 3rd grade 3000 R	Wholesalers Traders	Domestic value chain

3.1.6.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Scaling up of the production of the smaller units remains a challenge as many of the fish-sauce producing units are traditional home-based production facilities;
ii. Cluster strengthening is a new concept to the disperse production units and many of the producers are simply unaware that establishing market opportunity to each of the producers separately is difficult;
iii. Investment capacity of SMEs is also limited and investing in a common purpose supported by provincial authorities is also something has never been tried out;
iv. Technical development of the production process is tied to exposure to improved system what has never taken place for most of the producers. Dissemination of newly gained technical expertise can be carried out by the selected producers who have visited improved facilities or attended technical courses;
v. Testing and international quality certification is a pre-condition to brand the products with high value that can claim higher prices from export markets;
vi. Hygiene practices in processing is also a key issue if the export markets taken into account seriously;
vii. No significant cluster-related or joint activities among the producers took place and the producers are unaware of forging informal and formal alliances themselves to achieve common good and increased income;
viii. Limited marketing and other business development services available due to the fact that there has not been common branding and marketing attempts among the producers.

3.1.6.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the clusters involve the following:

i. There are opportunities to train these producers towards a common goal of contributing to bulk production under common branding and packaging. Formal partnerships with larger processors or the lead producers is needed to connect with the export market and get benefitted from increased sales;
ii. Modern plant with less manual intervention is necessary to attain higher quality and to target quality-sensitive export markets. In this case, the smaller producers can also follow quality programs in their primary processing and connect with the lead processors as secondary input suppliers for further processing / packaging;
iii. Market development and market diversification of fish sauce can be achieved by targeting different regional and global niches and following appropriate packaging;
iv. Export consortia formation with the lead producers can contribute to achieving further cooperation among the smaller and medium producers in the cluster and finally lead to increased income for all the producers;
v. Embedded business development services can play a leading role in connecting the cluster with the regional and overseas market where the service providers can train the producers on quality programs, take care of the packaging and also establish good contacts with the export markets directly and act both as a 'quality and sales agent' for the producers;
vi. The selected producers can join learning visits to cluster in the neighboring countries that follow improved food-processing and quality programs. The learning can also come in the form of joining trade fair and regional business matching programs;

3.1.7 Kampot Natural Salt Cluster

3.1.7.1 Provincial Overview

Kampot is a coastal province in Cambodia. The province hosts 17042 salt processing establishments which contribute to 1.1% of economic output to the national economy.

The basic encumbrance across the province is lack of market demand in domestic market. Thus, a problem of over production occurs.

Priority products in the province are:

- Pepper
- Durian
- Coconut
- Mango
- Fish sauce and
- Salt

<u>**Product Cluster Identified**</u>

Salt (Kampot Natural Salt)

Map 8: Kampot, Cambodia
Land Area: *4873 sq. km.*
Population: *613305*
Source: "Economic Census of Cambodia 2011 – Provincial Report" By NIS; Ministry of Planning; Phnom Penh. February 2013
Map Source: Google

3.1.7.2 Cluster Introduction and SWOT Analysis

Natural salt production is a well-known economic activity in Kampot province of Cambodia. The salt fields are close to the ocean. At the start of the production process water is let in from the ocean to the fields. The fields are then blocked from the ocean and the water is allowed to evaporate, leaving salt crystals. This process is repeated many times to harvest the hard crystal of salt. The salt trapping and drying season last from the beginning of December to April when the weather is dry with minimum rainfall. This is one of the major alternative livelihoods of the communities living around the salt-production belt by the sea. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 21: Kampot Natural Salt Cluster SWOT Analysis

STRENGTHS	**WEAKNESSES**
• Unique natural and climatic conditions (soil, tropical climate) • Availability of sea water as a source of raw input • Traditional knowledge of production trapping sea water and producing salt	• Traditional mind-set & resistance to up-gradation • Lack of coordination and cooperation between different cluster actors, particularly salt-producers and refiners and further processors, after extracting the salt from the field • Labour migration and sudden shortage of labour as the salt-producing job guarantees only part-time employment of few months under the sun
OPPORTUNITIES	**THREATS**
• Modern technology in salt processing • Good branding possibility as Kamput natural salt • Value addition through addition of micro-nutrients and positioning as high value products in the region and abroad	• Competition from overseas markets - Malaysia, Indonesia, Singapore, China, Vietnam and Thailand • Rainy season create problem in drying the water, turns to a seasonal production

3.1.7.3 Value Chain Map of Kampot Natural Salt Cluster

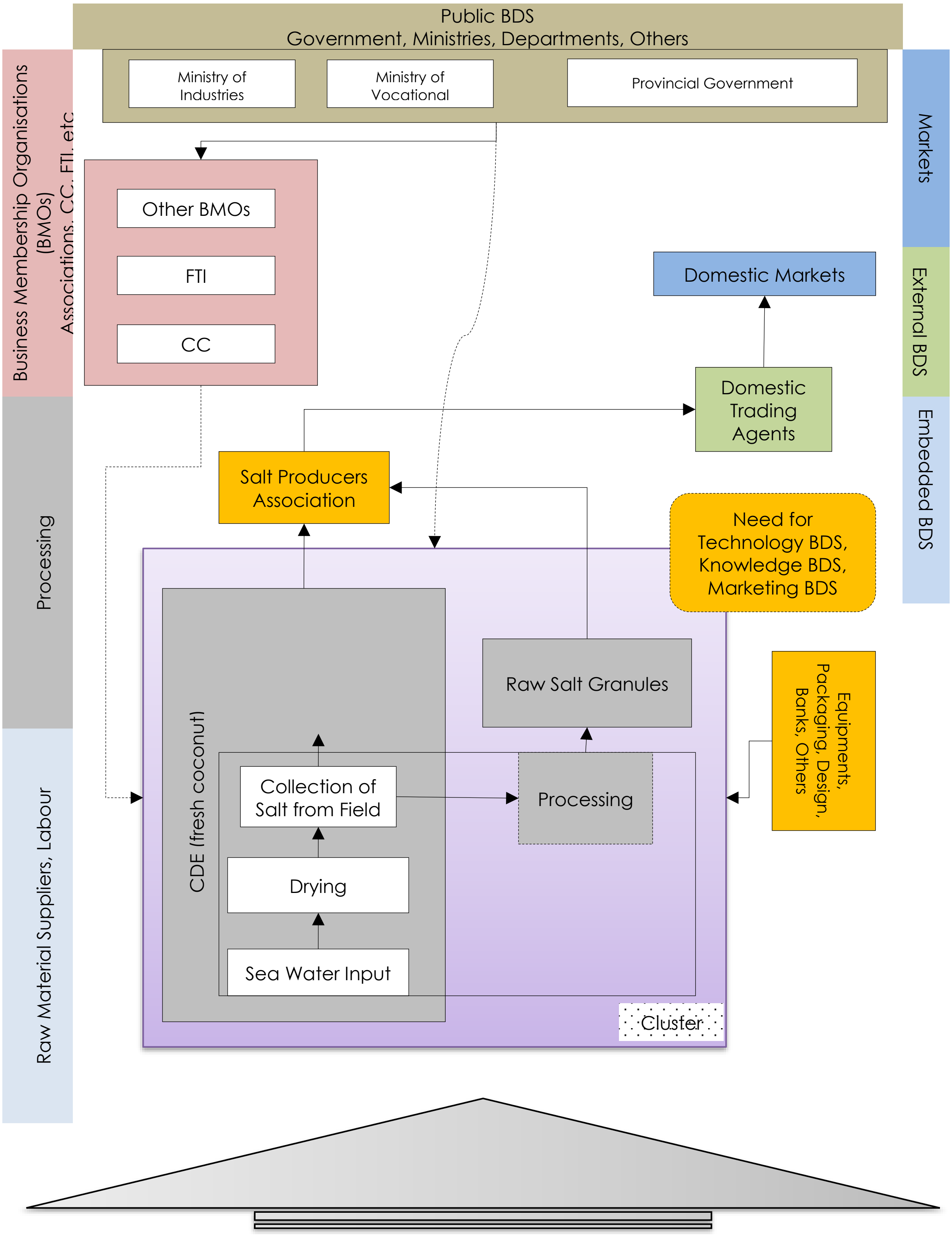


Figure 10: Value Chain Map of Koh Kong Fish Sauce Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.1.7.4 Kampot Natural Salt Cluster Value Chain in Numbers

Table 22: Kampot Natural Salt Cluster Value Chain in Numbers

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC
Step 1 – Land preparation			
- **4500 hectare land (Kampot)** - **143000T of production (2016)** - **190 Salt producer group**	Family break-down may change groups but land area remains the same. The salt group prepare the land for trapping the sea water.	Producers Land-owners	Domestic value chain
Step 2 – Salt Production			
For producing 50 kg of salt: - **3600 R (for workers, package and association sustainability)** - **5000 R (provided by the association) = 0 (means currently there is no profit)**	Association provide capital of 5000 R per 50kg to producers	Producers / workers, Association	Domestic value chain
Step 3 – Selling			
3675,95 Hec produce salt in Kampot and current selling price is 8600 R	Overproduction continues which led to current 320000 T of salt in stock	Traders	Domestic and occasional regional value chain

3.1.7.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Manual production process cause several quality issues while quality control remains a pre-condition to export the excess salt after national consumption;
ii. Lack of suitable storage and packaging technology remains one of the major bottlenecks. After harvesting the salt, there is an immediate necessity to store the salt as both the weather conditions and the workers situations becomes worse towards the end of the salt drying season;
iii. Lack of infrastructure including transportation of the salt-harvest to the processing centre remains a constraint;
iv. Cluster producers have limited cooperation among themselves and there is a high dependency on the channel intermediaries.

3.1.7.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Introduction of proper technology and tools can reduce the time for processing significantly and can also improve the quality of salt during sun-drying;
ii. Lead producers and processors can be taken on guided learning visits to have first-hand experience about cooperation between cluster or community members and the processors. This will also give the participants ideas about the modern salt production factories;
iii. Creating linkages with marketing / business development services or interactive database to bring the producers in contact with technical collaborators and the buyers of natural salts;
iv. Find alternative use of sun-dried salts like in processing of leather and others which will give it the opportunity to export of salts in bulk not conforming to the quality control of edible salts;
v. Capacity building of BMO can also be an important initiative foster cooperation among the producers and connecting with investors / buyers.

3.1.8 Preah Sihanouk Dry Shrimp Cluster

3.1.8.1 Provincial Overview

Preah Sihanouk Province of Cambodia has an estimated number of 10728 establishments that account for nearly 1.7% of national revenue.

Numbers of producers / manufactures (2015) = 140
- Prey Nop = 52
- Stueng Hav = 29
- Kampong Seila = 7

The other clusters under consideration in the province, that were not selected for final intervention, includes: manufacturers and handicrafts in the province (iron repair/replace, mirror cutting, breads, drinking water, steam fish and dry shrimp.

It is a coastal province of Cambodia and has a long coastal line with the Gulf of Thailand.

Access to Finance

Financial institutions have been responsive to the needs of the dry-shrimp cluster-producers. However, there is a need to introduce new financial services targeting the cluster.

Cluster Product identified

Dry Shrimp

Map 9: Preah Sihanouk, Cambodia

Area: 1938 sq km
Population: 247355
Source: "Economic Census of Cambodia 2011 Provincial Report" By NIS; Ministry of Planning; Phnom Penh. February 2013
Map Source: Google

3.1.8.2 Cluster Introduction and SWOT Analysis

Sun-dried shrimp has been a major economic activity among the communities along the coastline of Preah Sihanouk province of Cambodia. Many households and small and medium producers engage directly with shrimp-drying as a major or alternative livelihood activity. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 23: Preah Sihanouk Dry Shrimp Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Abundant natural resource e.g. fresh shrimps • Availability of workers with traditional knowledge of dying techniques • Supportive weather and advantage of location (e.g. situated by the sea)	• Manual and natural processing that also involves time-consuming production process and quality management issues • Lack of coordination and cooperation between different cluster actors • Inconsistency in raw material supply • Quality management issues
OPPORTUNITIES	**THREATS**
• Availability of modern technology • Large market demand • Basic cluster activities among the producers and awareness among the cluster actors on quality management, common branding for easier recognition etc.	• Overseas market competition • Inadequate Capita investment

3.1.8.3 Value Chain Map of Preah Sihanouk Dry Shrimp Cluster

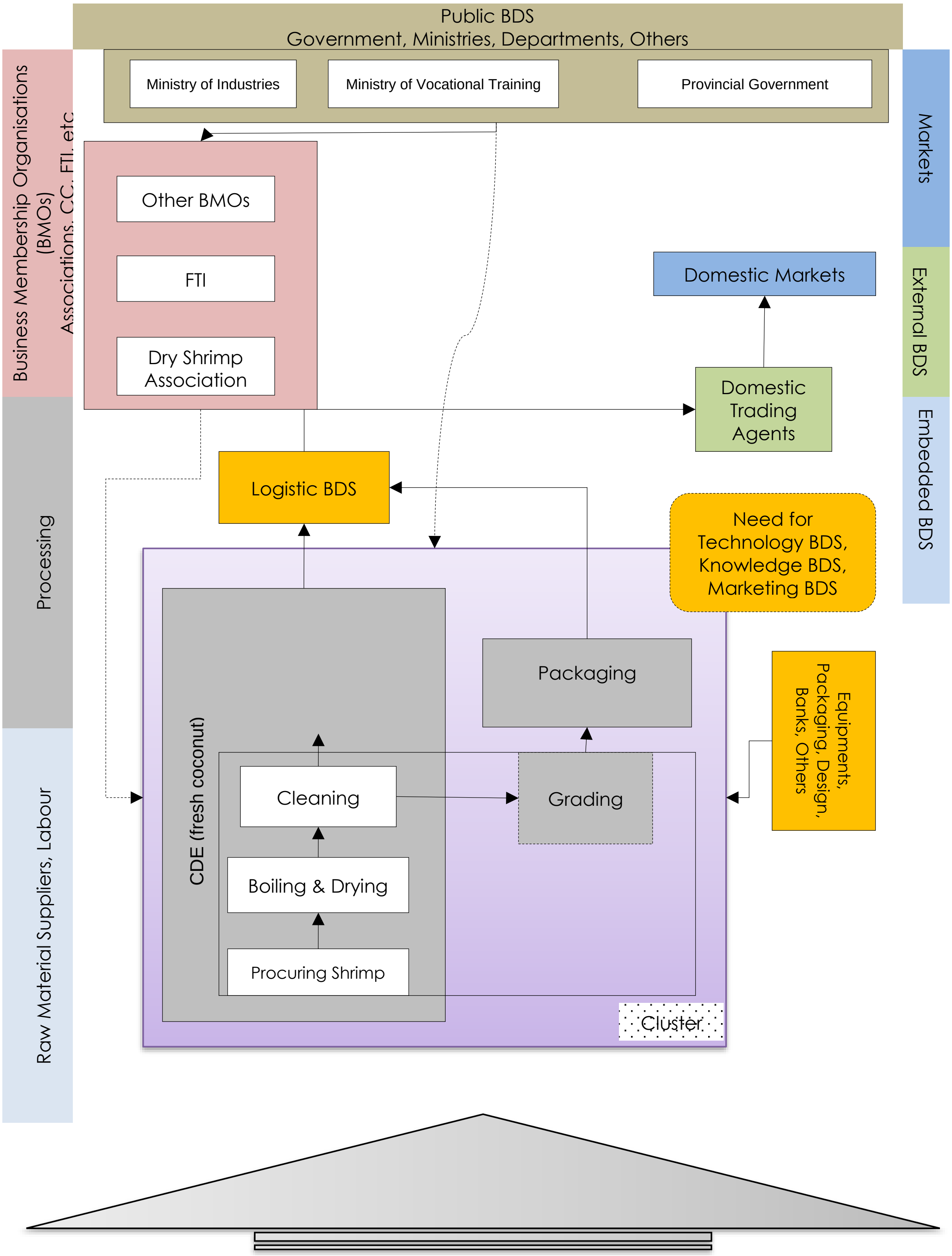


Figure 11: Value Chain Map of Preah Sihanouk Dry Shrimp Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Continuous lines mean strong linkages

3.1.8.4 Preah Sihanouk Dry Shrimp Cluster Value Chain in Numbers

Table 24: Preah Sihanouk Dry Shrimp Cluster Value Chain in Numbers

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC
Step 1 – Purchase and transport			
Group members: Currently 12 groups **Production 300-500 kg**	Purchase and transportation cost of 3 kinds of shrimps (grade 1, 2 and 3,4,5) - Grade 1 from 6000 to 7000 R / kg - Grade 2 from 4000 to 6000 R / kg - Grade 3 from 3000 to 5000 R / kg	Producers Fish traders	Domestic value chain
Step 2 – Processing (clean, dry, steam)			
Buy – transfer – **Clean – steam – Dry (Fire and sunlight) – grading** – packaging	10 kg (fresh shrimp) = 0.8 to 1 kg (dried shrimp)	Producers / workers, Association	Domestic value chain
Step 3 – Packaging and Selling			
70% domestic sales, 30% international sales	Final selling price at producers level - Grade 1 = 80000 r - Grade 2 = 60000 to 70000 R / kg - Grade 3 = 55000 to 60000 R / kg - Grade 4 = 45000 to 55000 R / kg - Grade 5 = 30000 to 35000 R / kg	Traders / Buyers	Domestic and occasional regional value chain

3.1.8.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Scale of production of the dried-shrimp is mostly at house-hold / micro-level lacking advantage in case of procuring fresh shrimps from the suppliers and taking advantage of selling dried shrimps in a bulk;
ii. Investment capacity of SMEs is limited and that drives out the possibility of enterprise-level or cluster-level investment-sharing together with provincial or development partners;
iii. Technical development of the drying process and accumulation and packaging remains a key-constraint to scale up the drying and post-drying value chain functions;
iv. Very few producers observe the necessary hygiene practices in the process which may get the product exposed to outside filth and wastes that cannot be cleaned properly under traditional drying practices;
v. Extreme climatic condition affects the supply and drying of shrimps. Climate change affects the timing and amount of rains in the seasons and that ultimately affects the amount of sun and duration of no-rain period. As a result, natural drying process has been affected;
vi. To improve the quality of drying and to observe quality and hygiene programs among the producers, it is necessary to organize the cluster for the common good of all the producers. But there is little awareness of the local association and the common benefits that can bring to producers;
vii. Scattered production / drying facilities have not been supportive to developing local business development services like packaging, storing and the like.

3.1.8.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Standard and quality training program to all the members is a key to improve the quality of the shrimps. This can be made easier by conducting a ToT program with some leading and experienced producers who can further train the cluster members after completing their trainings;
ii. Dried shrimp is used in different ways in different regions of the world and each of the market requires its unique processing and sub-ingredients. Targeting different markets differently will also increase the total sales of the dried shrimps and ensure diversification of the markets; and
iii. Formation of export consortia by medium to large producers can also lead to sales increase and subsequent integration of smaller producers in the export supply chains following quality programs.

3.2 Myanmar

Provinces Name	Cluster Name
➢ Dawei	• Mackerel (Pla Tu) Cluster

Map 10: Provinces and Clusters in Myanmar

3.2.1 Dawei Mackerel (Pla Tu) Cluster

3.2.1.1 Provincial Overview

Dawei (formerly called Tavoy) is a district and name of a city in the south-east Myanmar, about 614.3 kms from Yangon, on the banks of Dawei river.

It is near the border of Thailand's province of Kanchanaburi, and is famous for sea-food, fishery, rubber, oil and natural gas, weaving ('longyi'), teak wood amongst many other products.

In recent times, Dawei has become famous for the large scale deep sea port and Dawei SEZ, which is being set-up jointly with the collaboration of Italy, Thailand, Japan, and Myanmar government. The population in Dawei.

Name	Status	Population Census 2014-03-29
Dawei	**District**	**493,576**
Dawei	Township	146,964
Launglon	Township	118,317
Thayetchaung	Township	105,662
Yebyu	Township	122,633

Table 26: Population of Dawei
Source: The 2014 Myanmar Population and Housing Census - The Union Report, May 2015 (web).
Area figures are calculated from geospatial data of Dawei

Map 11: Dawei, Myanmar
Map Source: Google

3.2.1.2 Cluster Introduction and SWOT Analysis

The Andaman Sea is a body of water to the southeast of the Bay of Bengal, south of Myanmar (Burma). This has traditionally been used for fishery and transportation of goods between the coastal countries. Dawei is a large fish-processing cluster in Myanmar. Mackerel species (*Rastrelliger kanagurta* and *Rastrelliger brachysoma*) are caught mostly in purse seines and surrounding gillnets and sometimes bottom trawls. Near-shore areas are defined as less than 10 nautical miles from the shore of Dawei. Boats less than 30 feet in length with not more than 12 h.p. engine capacity can fish Mackerel during November to April with annual catch ranging from 10,000 – 20,000 tonnes in recent years. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 25: Dawei Mackerel (Pla Tu) Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Abundance of fish stock in the waters • Varieties of fishes in demand both domestically, in the region and also overseas • Lower levels of pollution in the area & in the sea • Traditional skill in catching fish in the area	• No jetty. It was expected to be built at least 6 meters long and 30 meters wide. • Weak access to financial services • Lack of support from regional government • Weak access to market • Lack of data related to fish (price, markets)
OPPORTUNITIES	**THREATS**
• Low labour cost may turn Myanmar into a leading Mackerel exporter to export destinations like Japan • Rising demand in the national market, i.e. Yangon last two-year • Infrastructure facility after construction of SEZ	• Ecological changes due to Dawei SEZ which may affect the fish stock in the near future • Fishing may decline due to large scale shipping activities in the region in the future after Dawei SEZ becomes fully operational

3.2.1.3 Value Chain Map of Dawei Mackerel Cluster

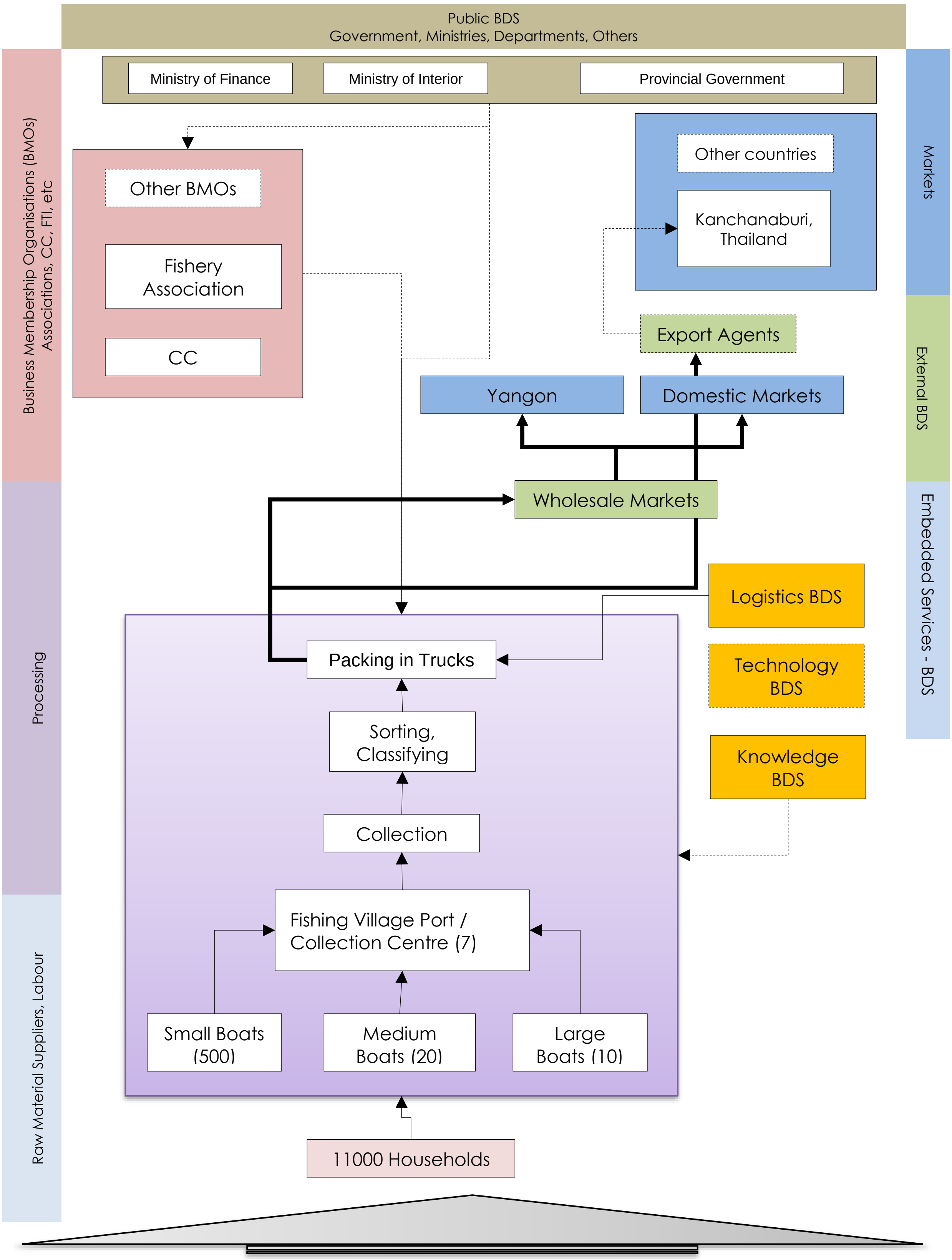


Figure 12: Value Chain Map of Dawei Mackerel Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.2.1.4 Value Chain of Dawei Mackerel Cluster in Numbers

Table 26: Overview of Dawei Fisheries

Description

Fishing Boats and Trawlers

Off-shore region: beyond 10 miles of shore line of fish port
On-shore region: up to 10 mile of shore line of fish port
Type of fishing boats, trawlers

Size of Boat	Total No. of Boats	No. of Boat Owner in Selected Port (At village Bauk Seik; Ref Mr. Thet	Capacity of Fish Catching
Small Boat	500	500	1.2 -1.5 metric tons of fish per day at every 2 day
Medium Boat	20	20	15 – 20 metric tons per trip. Each trip is about 20 days during October – May of the year
Large Boat	10	4	60-100 metric tons per trip. Each trip is about 20 days during October – May of the year

Total Catch (Production numbers)

- 1 Kg. of fish is 900 Kyat (minimum price) with maximum price of 13,000 Kyat for some type of fish.
- About 2000-2500 metric tons of fish per month
- Estimated 2 billion Kyat worth of fish is caught (calculated at base price of 900 Kyat / kg)

Transportation, Distribution, and Logistics

Only one transportation company operates from Dawei to Yangon with 3 trucks per day. Each truck carry at 15 metric tons

Transport routes:

- From fish port to Dawei local market
- From fish port to Yangon and thereon to China by unspecified logistic company
- From fish port to Kanchanaburi (salt fish) to Mahachai and thereon exported to Malaysia

Costs of Transport:

- Transportation cost from Dawei to Yangonis 130 Kyat per kg per trip

Markets

Total Production Value (from the province) is 27 million USD
Total Production Value is 843,750 US per month

- estimation of 15 metrics tons X 3 trucks X 25 days X 900 Kyat) and
- 1,218,075 USD maximum (estimation of 130,000 Kyat per Kg)

Regional market (Kanchanabur to Mahachai : TH)

- Plar Tho (type of fish) at 60 TH Baht per Kg. or 2100 Kyat
- Plar Leng (type of fish) at 90 TH baht

3.2.1.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Lack of exposure and experience in sorting and processing of Mackerels in Myanmar which has not been known as a traditional Mackerel exporters in Asian and Western export markets having high demand;
ii. Absence of any common facilities, fishing jetty, logistics services, cold chains and packaging makes it difficult to pursue a value product e.g. Mackerel which is a quality sensitive product;
iii. Marketing and branding of Dawei Mackerel does not exist unlike Thailand and Norway which enjoy high recognition around the world.

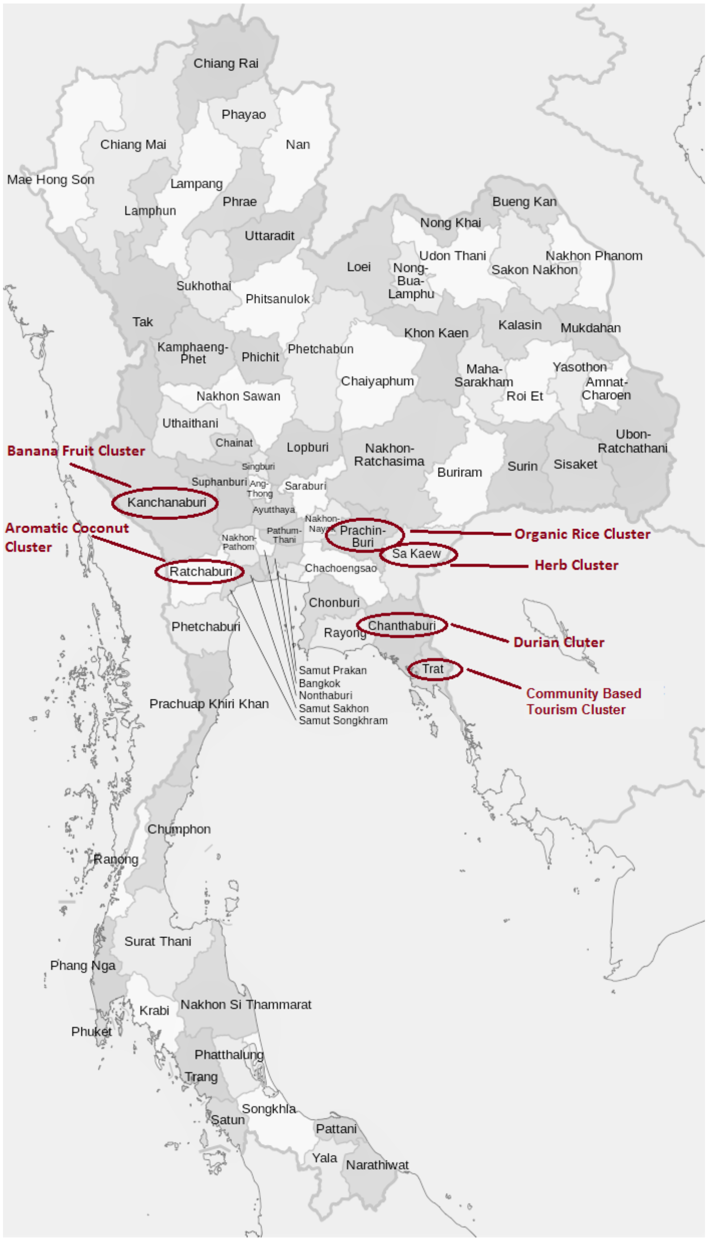
3.2.1.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Training on Mackerel processing will boost the quality of products which would be beneficial to many of the more than 11,000 households in 7 fishing villages whose livelihood that depend on Dawei fishery;
ii. Fish collection, sorting, and packing processes need to be modernized led by the local authorities;
iii. Dawei Mackerel cluster needs to be directly brought in touch with upper-end export market like Japan with buyers ready to offer technical collaboration for upgrading the processing technology.

3.3 Thailand

Provinces Name	Cluster Name
➢ Kanchanburi	• Fruits (Banana) Cluster
➢ Ratchaburi	• Aromatic Coconut Cluster
➢ Prachinburi	• Organic Rice Cluster
➢ Sakaeo	• Herbs Cluster
➢ Chanthaburi	• Durian Cluster
➢ Trat	• Community Based Tourism Cluster



Map 12: Provinces and Clusters in Thailand

3.3.1 Kanchanaburi Fruits Cluster (Prototype - Banana Processing)

3.3.1.1 Provincial Overview

Kanchanaburi province covers an area of approximately 19,473 square kilometers and is the 3rd largest province in Thailand. The province shares a border with Myanmar and enjoys around 10% of annual economic growth. The population of the province is 848,198.

Kanchanaburi fruits processing cluster (banana processing) is a large, diversified, and differentiated cluster. There are considerable differences between large enterprises and SMEs, who are engaged in fruits processing.

The CCI / FTI offices estimate that amongst their members, who are registered community development enterprises, fruit processing cluster has an aggregated annual revenue of THB 5-10 billion. These community enterprises employ more than 500 workers and play a great social and economic role in the province.

Different areas of the province is growing as mixed cultivation farms with organic vegetables and plants of various kinds, processed agricultural products such as corn milk, vegetable juice, dehydrated banana or jack-fruit, vegetable juice-coated Krayasat dessert and others.

Map 13: Kanchanaburi, Thailand

Map Source: Google

3.3.1.2 Cluster Introduction and SWOT Analysis

Recognizing the diverse nature of Kanchanabury fruit clusters with many fruits and species of the same fruits, banana processing was chosen as a prototype to develop a value chain and initiate value-chain centred intervention through the project. The sectors experts from private sector and CCI, FTI members, Department of Industries, Department of Commerce, and other participants at the FGDs during the study supported the idea of choosing banana processing cluster. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 27: Kanchanaburi Fruits Cluster (Banana) SWOT Analysis

STRENTHS	WEAKNESSES
• Good irrigation system for banana plantation; • Kanchanaburi is located near Myanmar and also not far from Bangkok; • Most of the area in Kanchanaburi are flat, suitable for agriculture	• Weak adaptation to modern technology • Weak connection to markets • Unregistered enterprises not supported by CCI / FTI • Weak association skills / BMO activities • Lack of advocacy of common problems
OPPORUNITIES	**THREATS**
• National and regional Government schemes to support banana processing;	• Competition from other GMS countries • Drought and dry climate is lowering production and pushing up prices

3.3.1.3 Value Chain of Kanchanaburi Fruits Cluster (Prototype - Banana Processing)

Table 28: Value Chain of Kanchanaburi Fruits Cluster (Prototype - Banana Processing)

<table>
<tr><th>Steps (Value Addition)</th><th>Description</th><th>Linkages with Domestic VC & GVC</th><th>Recommendations</th></tr>
<tr><td colspan="4">Step 1 - Purchase of Raw Material</td></tr>
<tr><td>10-15 THB per 'Hwee' ('hand' of about 20 fruits)
5-7 THB per kg</td><td>'Kum' or group based trading, and farming
30% from area 14 kms from Thao district in Kanchanaburi province
70% from Sayok and Thom Pha Phun, also part of Kanchanaburi
12 groups– Thom Pha Phun; 4 groups – Sayok; 1 grp – Petburi (largest)
Each group may be composed of 20 HHs/individuals</td><td>Domestic and Local linkages only
Suggested - Myanmar, Other provinces</td><td>Due to shortage of quality RM, need to link the cluster with other sources (banana from Myanmar said to meet the quality standards)</td></tr>
<tr><td colspan="4">Step 2 - Quality Control</td></tr>
<tr><td></td><td>Selection banana done at the CDE level after quality training</td><td></td><td></td></tr>
<tr><td colspan="4">Step 3 - Peeling, Cleaning, Slicing</td></tr>
<tr><td>Cost of slicing tool 2000 THB</td><td>Members process themselves (slicing tool bought from Sukhothai)</td><td></td><td></td></tr>
<tr><td colspan="4">Step 4 - Frying and Quality Control</td></tr>
<tr><td>Price of fried banana chips: 50 THB per kg</td><td>Undertaken by the group members themselves
Price of oil: 400 THB per tank of 13.7 litre (support price by CDE)
Market price of oil: 700 THB per tank of 13.7 kgs
CDE purchases the fried chips in plastic bags; Quality control done at the work-floor of the CDE, meeting quality requirements of DoI</td><td></td><td></td></tr>
<tr><td colspan="4">Step 4 - Addition of Flavours</td></tr>
<tr><td>Price: THB 250 / flavour (needs 60 gms of flavour for 60 kgs chips (value addition: THB 0.25/ kg)</td><td>Patented process - ingredients, and proportion of the same
CDE owner contacts BDSPs in Muang ThongThani area near Bangkok, Mahachai district of Samut Sakon province, who prepares flavours (9)</td><td>Muang ThongThani area near Bangkok, Mahachai district of Samut Sakon province</td><td></td></tr>
<tr><td colspan="4">Step 5 - Packaging</td></tr>
<tr><td colspan="3">
Packaging (for each of the 9 different flavours)
<table>
<tr><td>Type</td><td>Weight of 1 packet</td><td>WS Price</td><td>Retail Price</td><td>Min Order Size = 1 bag (Lot Size)</td></tr>
<tr><td>Small</td><td>18 gms</td><td>2.8 THB per packet</td><td>3 THB per packet</td><td>10 bags (1 bag = 12 pkts; 120 pkts)</td></tr>
<tr><td>Large</td><td>85 gms</td><td>20 THB per packet</td><td>25 THB per packet</td><td>24 packets in 1 bag</td></tr>
</table>
1 kg of fried banana (50 THB) can be processed and packaged into
<table>
<tr><td>Type</td><td>Weight of 1 packet</td><td>Number of Packets from 1 Kg of fried banana chip</td></tr>
<tr><td>Small</td><td>18 gms</td><td>55 packets</td></tr>
<tr><td>Large</td><td>85 gms</td><td>11 packets</td></tr>
</table>
There are 3 companies – 2 in Bangkok, and 1 in China, who acts as packaging BDS to the CDE
<table>
<tr><td></td><td>Thailand</td><td>China</td></tr>
<tr><td>Large packets</td><td>2,10 THB per piece of packet</td><td>1.70 THB per piece of packet</td></tr>
<tr><td>Small</td><td>0.9 THB</td><td>-</td></tr>
<tr><td>Package Design Template</td><td>32,000 THB per design template
8000 THB per colour</td><td></td></tr>
<tr><td>Minimum Order Quantity</td><td>50,000 pcs of pkts</td><td>50,000 pcs of pkts</td></tr>
</table>
</td><td>New package BDS needed in the cluster
Package Design BDS are absent int he cluster
Package design costs are not competitive
China based package BDS also acts as an importing agent, who procures the fried product, and market them in their own brand
Brand building support needed
Training for export operations needed</td></tr>
<tr><td colspan="4">Step 6 - Transportation, and Distribution</td></tr>
<tr><td colspan="3">Transportation
Own trucks, own staff – gets monthly salary
Two time per week
Distribution
CDE sends flavoured banana chip to a packaging BDSP in China, who in turn packages them and sells the final products to the Chinese markets
Sells final products from Kanchanaburi to Mahachai district in Samutsakong province, and Bantbouthong district in Nonthaburi province, and Samkok district of Ayuthaya province, and Swarnabhumi Airport (exports)
Sells to Lotus shopping chain and 7-11 convenient stores; Exports contracts are FOB contracts</td><td>Marketing BDS needed in the cluster
Export linkages needed
Cross border matchmaking needed
Export credit risk mitigation needed</td></tr>
</table>

3.3.1.4 Value Chain Map of Kanchanaburi Fruit Processing Cluster

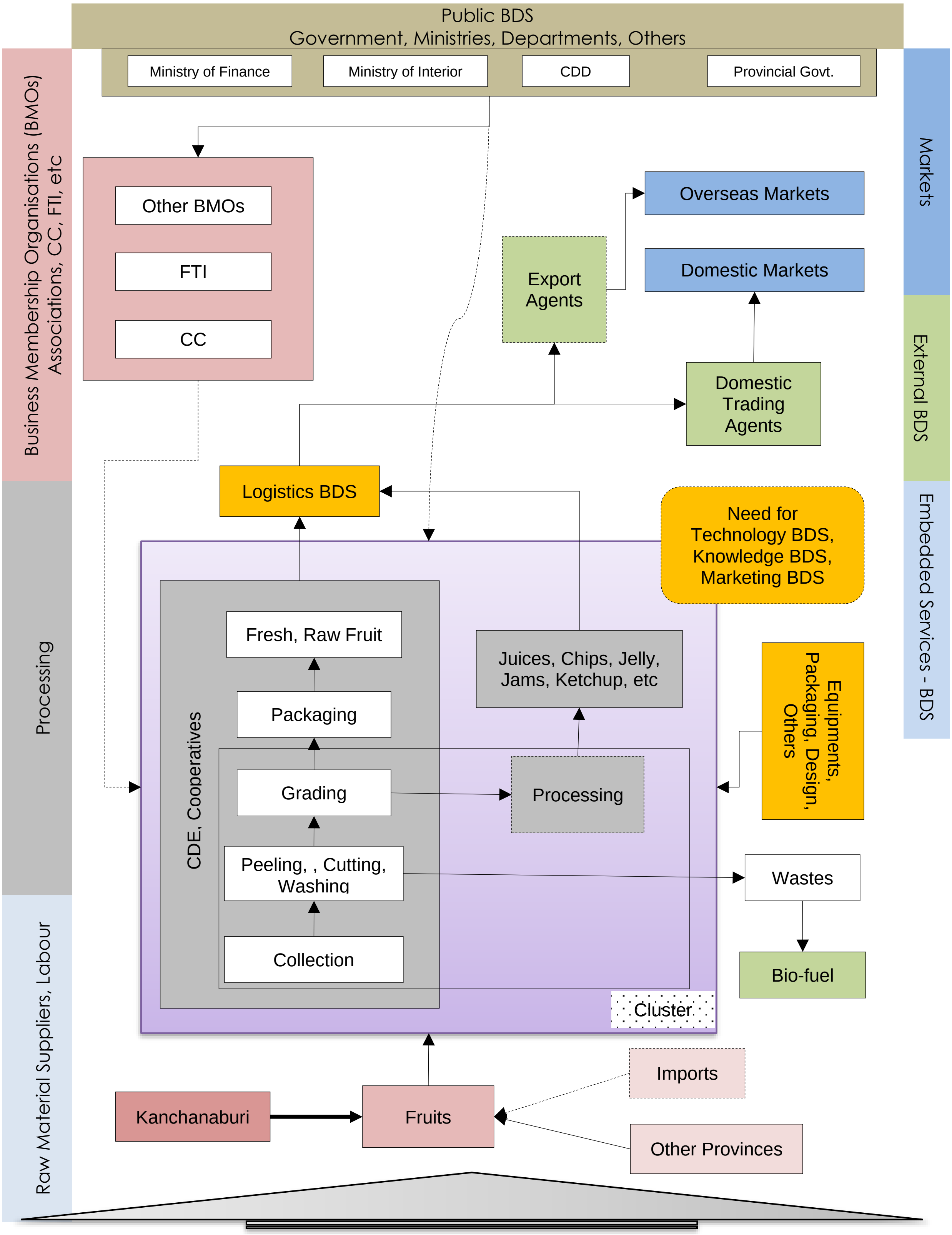


Figure 13: Value Chain Map of Kanchanaburi Fruit Processing Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.3.1.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Raw material supply i.e. fresh banana vary over time and lack stable quality. For producing dried banana and producing banana chips, particular type of banana are considered suitable than the others. The quality of supplied banana also determine the quality of the final products;
ii. Since most banana processing establishments are managed by the community enterprises, coordination between community enterprises and groups of households / village communities remain crucial which determines product quality, trade partnerships and delivery on time;
iii. Lack of awareness of support ecosystem for community enterprises offered by the national and local authorities in Thailand which were initiated to promote community enterprises and cluster activities, e.g. banana processing;
iv. Technology used are outdated and not modern (for e.g - use of hand held wooden slicer) which makes it difficult to scale up the production;
v. Marketing and Branding - most households & community enterprises supply processed fruits (e.g. banana) to others who in turn package them and market the products with their own brand;
vi. Protection of intellectual property rights for processing and product innovations.

3.3.1.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. To scale-up production, it remains crucial to source raw materials (right type of fresh banana) from other provinces, Cambodia, Lao or Myanmar which will help to scale-up supplies of the fresh banana needed for the desired final products;
ii. Suppliers and providers of modern technology may be linked to the community enterprises. Community enterprises can largely benefit from technical collaboration and guidance;
iii. Linkages with food processing institutes will help identify the many areas to improve the hygiene practices and to maintain the necessary nutrient quantity and quality;
iv. Many community enterprises are connected to larger processors who buy and brand the semi-processed fruits and sell them in and outside Thailand. However, provision for further value addition at the producers and community enterprise level may raise the income of the producers and also lessen the tasks at the end of larger processors. A campaign of embedded services and quality programs can be introduced to benefit these actors in the value chain;
v. BMO-SME linkages can play a great role to enhance the capacity of the community enterprises and productivity of the producers at different level who grow the banana, cut them and finally dry them;
vi. Product diversification can be achieved by the involvement of the national research institutions in the province or from Thailand who will identify diverse uses of banana;
vii. Quality testing laboratory and certification program is high on demand which can claim better price in upper-end national and international markets.

3.3.2 Ratchaburi Aromatic Coconut Cluster

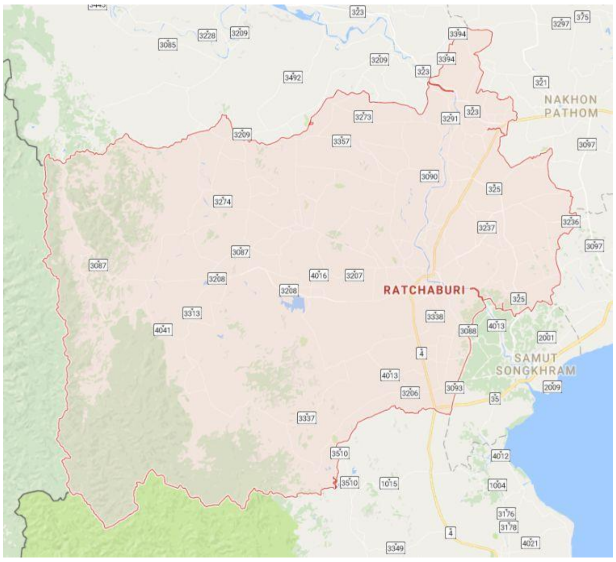
3.3.2.1 Provincial Overview

Nam Hom coconut is the name of the cultivated coconut in the province whose scientific name is *Cocos nucifera L.*

Table 29: Provincial Data of Ratchaburi

Description	Number	Unit
Area of province	5,196.462	Sq. Km.
Administrative Subdivision	10	Districts
Population (January 6, 2015)	867,883	People
GPP (2013) at current market prices	13,216	Mil. THB
Average income per capita	25,742	THB / month
Unemployment (2015)	0,7	%
Minimum labour wage	300	THB/day

Source : Provincial Commercial Operation Center of Ratchaburi at http://www.aecthaibiz.com/pcocaecreport/fm/factsheet.aspx - monthly report as of May 2016)
Map Source: Google



Map 14: Ratchaburi, Thailand

Table 30: Production Data of Aromatic Coconuts

Production figures

	Planted area (rai)	Harvested area (rai)	Production (tons.)	Yield per rai (kgs.)	
2013	17096	16678	38041	2281	Coconut
	29709	27354	79864	2920	Young coconut
2014	17863	16796	31868	1897	Coconut
	32092	28922	77089	2665	Young coconut

Source: Provincial Statistics, 2014, Tables 9.7.1, 9.7.2)

3.3.2.2 Cluster Introduction and SWOT Analysis

Ratchaburi is famous for its delicious Aromatic (Nam Hom) Coconut (Thai 'Nam Hom' means 'delicious water' in English), which is cultivar typical around this geographical region. Ratchabury province is home to the famous aromatic coconuts in Thailand. The value of total sales in local market is estimated to be THB 3 billion coming from an estimated 80,000 tons of production of young coconut and further 40,000 tons of coconuts; making a total production of 120,000 tons.
Processed coconut (at local market price) is amounted to THB 1 billion for an estimated 500,000 coconut fruits that are processed in the region, with about a maximum of 200 times value addition to the cost price of 10 THB per coconut. However, this is a conservative estimate from the discussions with the stakeholders in the province[4].
Exports value of the fresh coconuts has increased to 1.5-2 times the normal costs, due to the dry season and fall in supplies. However, for a minimum order quantity of 9000 kgs of coconut the price per kg is about 40-50 THB. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 31: Ratchaburi Aromatic Coconut Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Unique natural and climatic conditions (soil, tropical climate) • Proximity to sea-ports and cold chain warehouses • Close to Myanmar - source of migrant workers • Traditional knowledge of farming	• Traditional mindset in farming • Government prioritises industry over agriculture • Lack of coordination and cooperation between different cluster actors • Little support from local cooperatives for local farmers development
OPPORTUNITIES	**THREATS**

[4] *One stakeholder adds value of about 300 times, if not more, to the cost of procuring raw coconuts from farmers.*

• Modern technology in processing coconuts • Ratchaburi is one of the 6 provinces promoted as green province (organic food / art / culture); • Ratchaburi has community markets in southern Krabi); central (Ratchaburi) and northern (Tak) and northeastern (Buriram) regions	• Competition from overseas markets - Malaysia, Indonesia, Singapore • Very dry climate and seasonal fluctuations causing drop in production and pushing up prices

3.3.2.3 Value Chain Analysis of Ratchaburi Aromatic (Nam Hom) Coconut Cluster

The global demand of coconut comes in raw form, coconut water, pulp, and processed coconut. Some producers are members of Ratchaburi Organics Co. Ltd or (ROCL.).

Table 32: Value Chain Analysis of Ratchaburi Aromatic (Nam Hom) Coconut Cluster

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC	Recommendations
Step 1 - Farm - Planting, Harvesting				
• 138 farmers members of ROCL (20 for coconut) • Productivity: 8000 coconut per rai per year • 15 harvests per year • 4 farming areas supply fruit to DFCL	THB 8-30 / coconut (seasonal variation) Operating cost is 10-20% of sales price	Local farmers Nam Hom coconut is being cultivated too in Malaysia	Domestic farmers Malaysia, Indonesia farmers have started to grow this cultivar too	Govt support, Research in farming, Technology upgrading
Step 2 - Sorting, Peeling, Cutting, Washing,				
• Coconuts are cleaned, of the external fibre by hand using knives • Discarded parts are sold as bio-fuel • White shaped coconut fruits are cleaned	Min wage rate of 300 THB per day	Burmese, Cambodian and local Thai workers Women workers from farms	Domestic labour markets Cambodian and Myanmar Labour markets Knives are bought form departmental stores (Germany made knives)	Labour issues Border point problems for workers from Myanmar and Cambodia
Step 3a - Packaging of Fresh/ Raw Coconut Fruit				
• Coconut fruits are wrapped in plastic papers • Packed into boxes, cartons, loaded in containers	Min wage rate of 300 THB per day	Women workers from farms	Domestic markets only	Quality check required
Step 3b - Cold Chain Transport to Markets				
• Cold chain logistics • From farm, CDE to markets		Logistics agents Trading agents	Domestic departmental stores; Overseas Markets - ASEAN, India, Europe, China, Japan	Logistics & export training, Management training
Step 4 - Processing - Separation and Boiling of Coconut Milk and Coconut Meat (pulp) and Boiling				
• Boil C/Milk for 30 mins at 100 degree Celsius • Boil C/Meat for 20 mins at 100 degree Celsius	1150 THB per tank of 48 kgs LPG	LPG supplier (15 kg/day) Labour - local, Myanmar Knife, Equipment BDS	Equipments from Germany, China, Japan LPG from local agents	Technology for boiling, past-eurization needed; Prese-rvation training needed
Step 6 - Processing - Mixing with Jelly				
• Mixing jelly with coconut milk • Adding of coconut flesh • Mixing in boiling coconut milk & flesh 1 ton Jelly powder needed per month	1000 THB per kg of Jelly powder; 4000 THB per stainless steel mixing tank	Local traders	Equipment from Germany, China, Japan Jelly powder from one BDS in Samut Prakan (about 1 km far)	
Step 7 - Processing - Adding Flavours, and Other Fruit Pulps				
• The mixture naturally cooled in room temp. • Addition of other fruit flavours and fruit meat	1-2.9 THB per cup (Rambutan, Longan)	Local traders Local workers	Boiling tanks - stainless steel, bought from departmental stores	Technology upgradation needed
Step 8 - Packaging				
• Label design done by owner of DFCL, another social venture; 600,000 cups bought • Packaging machines (semi-automatic) about 12 in number; Labels attached in-house;		In-house design; BDS in Bangkok; Cups bought from Nonthaburi (Y-Net Systems); Local traders	Local trader, Bangkok, Nonthaburi Copyright on label	Packaging technology needed Preservation of quality training needed
Step 9 - Finished Product - Cold Chain Transport to Markets				
• Price of 1 cup of Coconut Jelly is 30 THB • Different flavours • Different product - Raspberry jelly		Logistics BDS Export BDS Domestic traders	Sold to Bangkok, export agents	Marketing BDS needed and market linkages needed; Collaboration with research institutions, universities;

3.3.2.4 Value Chain Map of Ratchaburi Aromatic Coconut Cluster

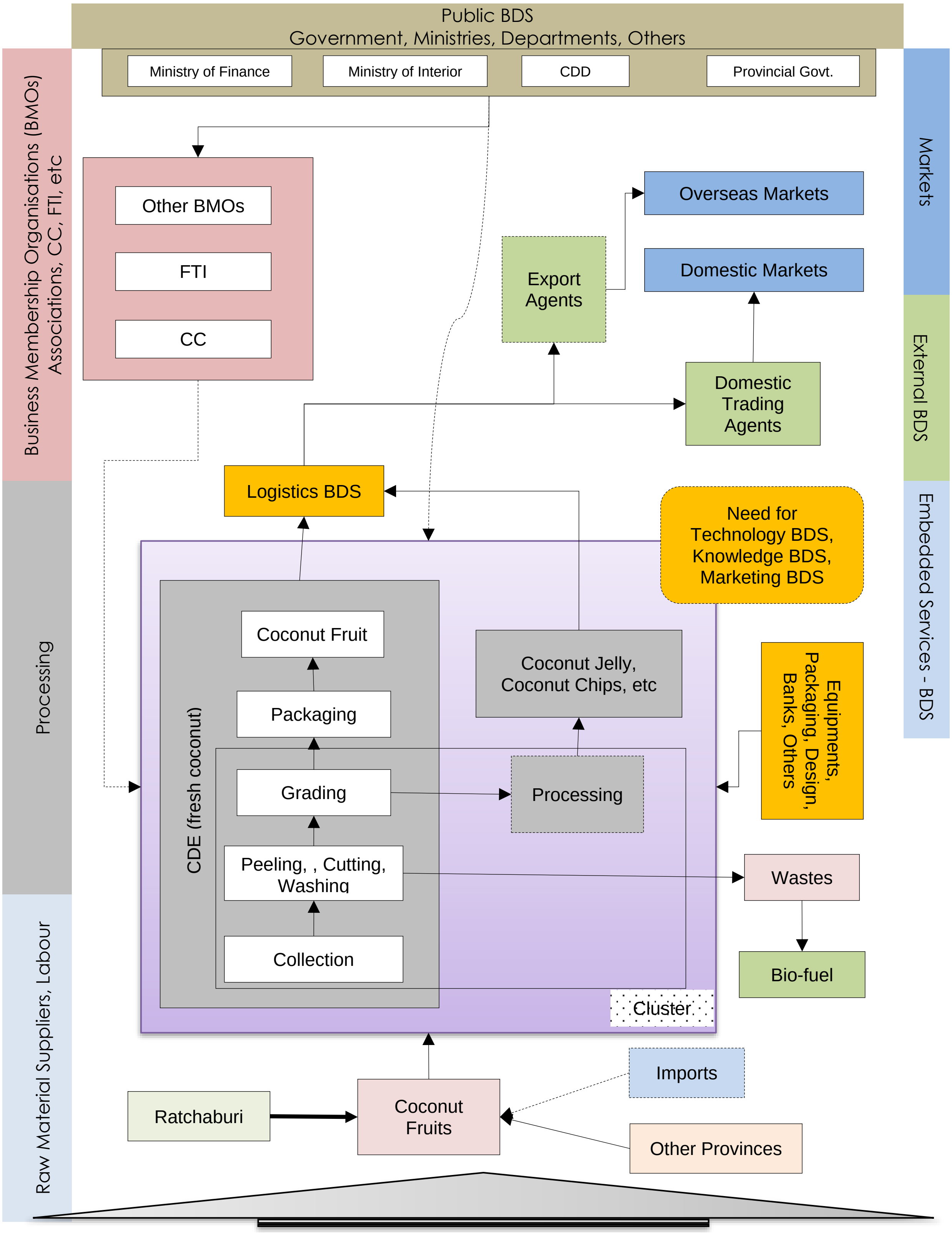


Figure 14: Value Chain Map of Ratchaburi Aromatic Coconut Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.3.2.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Lack of exposure to business management training makes it difficult for the SMEs to calculate theirs costs and the prices they should charge for carrying out the business. The entrepreneurs here also lack skill in people management, dealing with suppliers and diverse service providers;
ii. Lack of understanding of best practices make it difficult to upgrade the process and the quality of the products;
iii. Marketing issues - lack of marketing BDS has made this product, a generic one and consumers are largely unaware of the source of the products and the best practices it followed;
iv. Technology - lack of innovative technology for preservation, processing, and packaging remains an issue. Lack of preservation makes it harder to store and sell later like other commercialized bottled drinks
v. Preparation of aromatic coconuts requires a specialized skill that is mostly available among the people living around the coconut cluster. To scale up the operation, workers with right kind of skill in preparing the coconut and packing it are necessary.

3.3.2.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Training on the preparation to participate in the event (e.g., trade fair) is necessary to connect with buyers interested in aromatic coconuts as the product has already attracted enough attention mostly from the traveling expatriates;
ii. Soft skills training - English language, business meetings, negotiations is also necessary among the selected entrepreneurs to spread the message of aromatic coconuts;
iii. Creating linkages with marketing services providers and also technical services providers in choosing appropriate packaging for the right consumer niche would be necessary. Introduction of e-commerce to this products will also help establishing access to regional and overseas market;
iv. Quality BDS needed in the cluster who will train the community enterprises and the producers on complying with best practices at every step of preparation and maintaining hygiene necessary for dealing with food products;
v. Capacity building of common facility centres to deal with preparing large quantity of coconuts and to load them into larger packaging is necessary.

3.3.3 Prachinburi Organic Rice Cluster

3.3.3.1 Provincial Overview

Prachin Buri has plain areas and highlands. In the south and east, there are plains and forests. Low-lying plains suitable for agriculture, particularly rice are in the west of the province. Prachin Buri has an alternative climate of both dry and damp. Tropical rain in the southeast monsoon season causes damp and rain throughout the season – supportive to rice cultivation.

About the Province

Area of province	: 4,762.36 sq. km.
Administrative Subdivision	: 7 Districts
Population (as of January 2016)	: 482,195

Map 15: Prachinburi, Thailand
Source: http://www.thailandmaps.net/prachinburi/prachinburi.html
Map Source: Google

GPP (2014) : THB 217,106 million
(at current market prices)
Average income per capita : THB 25,742 /month
Minimum labour wage : THB 300 /day

Economy

Sector	Value	Units
GPP (2014) at current market prices	217,106	Mil. THB
Agriculture, hunting and forestry	6,533	Mil. THB
Industrial production	897	Mil. THB
Wholesale, retail trade, repair of motor vehicles, motorcycles and personal and household goods	164,405	Mil. THB
Hotels and restaurants	20,337	Mil. THB
Construction	742	Mil. THB
Others	2,340	Mil. THB
Average income per capita (16,725 THB / month)	317,520	THB
Unemployment (2015)	1.45	%
Minimum labour wage	300	THB/day

Source: http://www.aecthaibiz.com/pcocaecreport/fm/factsheet.aspx : April 2016

3.3.3.2 Cluster Introduction and SWOT Analysis

The Prachinburi province is rich with several species of indigenous rice which is tolerant of problematic soil condition such as acidic soil, resistance to blast fungus and bacterial blight, and so on. There is a growing niche for organic rice in the international market and some parts of Thailand are promoting organic rice through community enterprises and shared best practices. Some community enterprises are certified with The Organic Thailand logo on a package that represents the certification of farming, processing and packing of organic rice.

Table 33: Prachinburi Organic Rice Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Unique natural and climatic conditions (soil, tropical climate) • Stable high market demand internationally due to nutrient contents and health benefits • Traditional knowledge of farming	• Traditional mindset in farming • Lack of coordination and cooperation between different cluster actors • Capacity constraint in forming cooperatives and collaborating around best practices
OPPORTUNITIES	**THREATS**
• Ecological certification and branding (e.g. The Organic Thailand) • Also known as 'hub of innovative and organic agriculture' qualify to receive benefits from national and provincial governments	• Very dry climate and seasonal fluctuations causing drop in production and pushing up prices

3.3.3.3 Value Chain of Prachinburi Organic Rice Cluster

Respondent: Nakham Organic Rice Community Enterprise: Contact Person: Mr. Sivapoth Kuvichitsuwan

Table 34: Value Chain of Prachinburi Organic Rice Cluster

Steps	Description	Issues

Farming	• Community Enterprise based organic rice production and processing
	• There are 10-15 different groups in Prachinburi province; Other organic rice farmers are based in Kabinburi province
	• Average size of farm-holding : 600 rai (1 rai = 0.16 hectares)
	    • There are 2 (two) seasons of rice - single (1 time / year): 530 rai; (ii) double (2 times / year): 70 rai
	• Harvesting: 220 tons / year / 600 rai of land
	• Organic Fertiliser - chicken and buffalo dung; chemical fertilisers are not applied
	    • Price of organic fertiliser: 1000 THB
	• Labour costs: 1200 THB / rai of land
		• Modern farming techniques
		• Linkages with agriculture and research institutes
		• Training of labours

Processing	• Machines:
	    • Machine: vacuum (70,000 kg / per day);
	    • Rice mill (horsepower): 600 – 800kg / day;
	• Cost of rice mill: 250, 000 THB. There are 3 labors (30,000THB / per labor / month);
		• Common Facility Centre - feasibility study
		• Training of modern technology
		• Technology BDS needed

Quality Certification	• Certificate from Maejo University (MJU) in Chang Mai more than 3 years ago. • Certificate costs 70,000 THB which lasts for 3 years	• Quality certification linkages with Department of Industries, OTOP • Process quality assurances • Quality certification training
Products	• Green Rice - Price 200 THB/kg • Ordinary Rice - Price 15 THB/kg • Riceberry Rice - Price 350 THB / pack of 1 kg • Sinlek Rice • Rice Bran Tea - 600 THB / kg; 1 kg is packed in 4 packs which can make 120 cups of rice bran tea; Each cup of tea costs 10 THB	• Quality assurance of products • Innovative packaging • Nutrition assurances • Costing study and control for product pricing
Distribution	• Display of products at trade event e.g. IMPACT exhibition center in Muang Thon Tani • Majority of their products are sold at government shop / family shop • Participates in trade fair at Vietnam • Has an agent in Singapore • CE sells its organic rice products at Abhaibhuber Hospital (500 kg / month); Kabinburi Hospital (1 ton / month); and Nari hospital (1 ton / month)	• Logistics • Marketing BDS needed • Government support for marketing of products • Export related regulations - training and support

3.3.3.4 Value Chain Map of Prachinburi Organic Rice Cluster

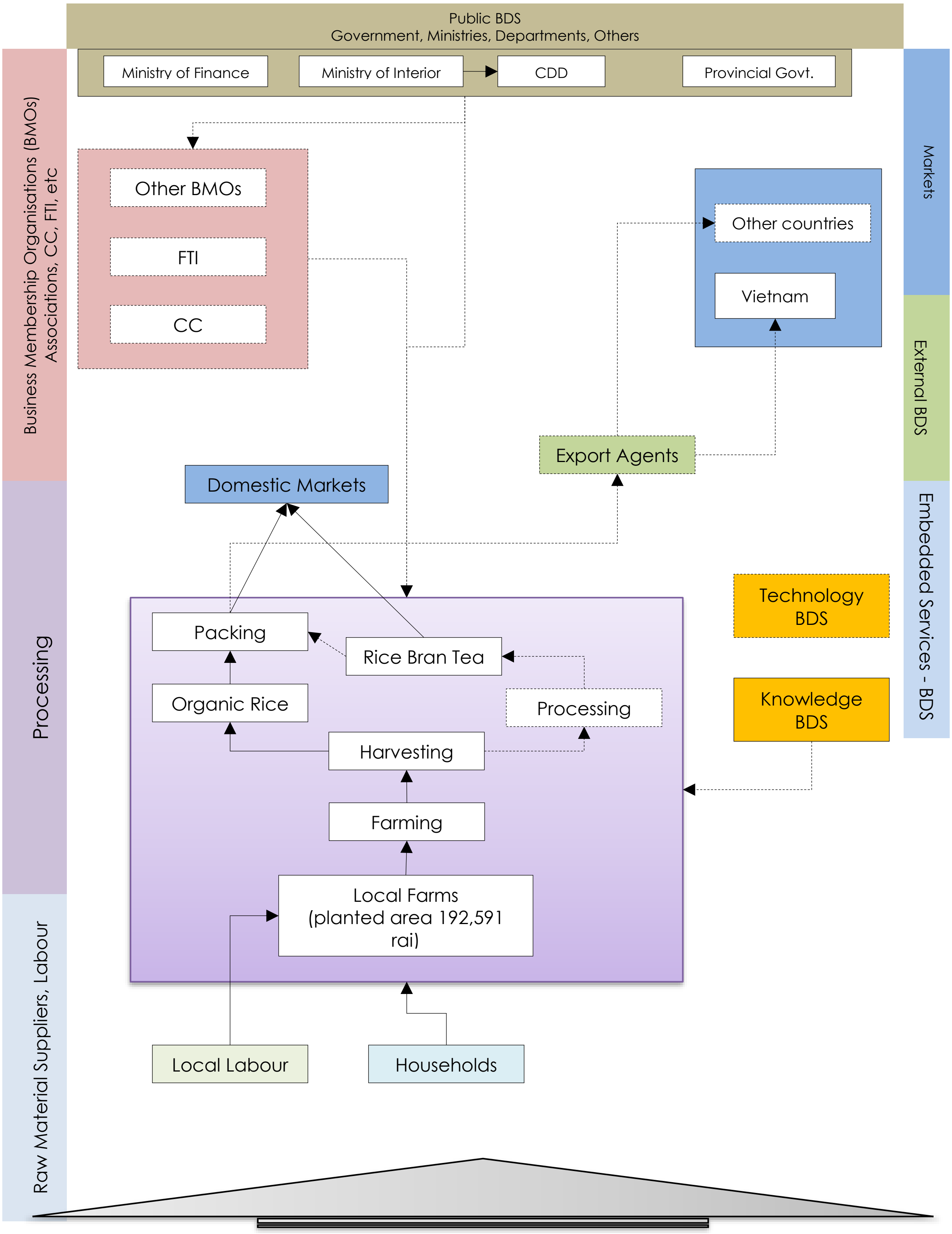


Figure 15: Value Chain Map of Prachinburi Organic Rice Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.3.3.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Product innovation cannot be made due to lack of technology and the constraint in scaling up of the organic produce;
ii. Rice market is dominated by rice cartel and occasionally, community enterprises cannot survive in this ecosystem;
iii. Lack of marketing support for different products both final organic produce i.e. rice and also other products e.g. rice bran tea, rice-bran composed fuel and other uses of rice bran and straw;
iv. Most community enterprises lack the skills and support to be in touch with the government and BMO linkages with the cluster-producers;
v. Farming techniques are traditional among the cluster-members.

3.3.3.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Technology BDS linkages, particularly in irrigation and using manure to save cost and increase effectiveness in using agri-inputs;
ii. Quality testing services to qualify a particular produce or product for an 'organic label' and the necessary support for ToT and further farmers' training in complying with organic best practices;
iii. Packaging technology needed to effectively take advantage of organic label and penetrate in health-conscious upper-end market;
iv. Make quality organic seeds available on time to the cluster producers and also to train the producers effectively collect and store organic seeds through their common facilities;
v. BMO capacity building through training of the leadership so the cluster members and cluster leadership can be made aware of being involved with such organization for common good of the producers and the community enterprises;
vi. Legislative, Government and Policy advocacy for helping small enterprises or community enterprises and farmers survive market inefficiencies.

3.3.4 Sakaeo Herbs Cluster

3.3.4.1 Provincial Overview

Table 35: Sakaeo Provincial Overview

Description	Number	Unit
Area of province	7,195,13	Sq. Km.
Administrative Subdivision	9	Districts
Population (as of January 2016)	552,187	People
GPP (2013) at current market prices	33,417	Mil. THB
Average income per capita	32,269	THB
Unemployment (2015)	1.70	%
Minimum labour wage	300	THB/day

Source : Provincial Commercial Operation Center of Sakaeo at http://www.aecthaibiz.com/pcocaecreport/fm/factsheet.aspx - monthly report as of January 2016

Map 16: Sakaeo, Thailand
Map Source: Google

Economy

Table 36: Sakaeo Provincial Overview Sector's Contribution in Economy

Sector	Value	Units
GPP (2013) at current market prices	33,417	Mil. THB
Agriculture, hunting and forestry	9,973	Mil. THB
Industrial production	9,456	Mil. THB
Wholesale, retail trade, repair of motor vehicles, motorcycles and personal and household goods	4,985	Mil. THB
Hotels and restaurants	125	Mil. THB
Construction	1,227	Mil. THB
Others	12,493.56	Mil. THB
Average income per capita (16,725 THB / month)	32,269	THB
Unemployment (2015)	1.70	%
Minimum labour wage	300	THB/day

3.3.4.2 Cluster Introduction and SWOT Analysis

Sa Kaeo province is located on Thai-Cambodian border and 245km east of Bangkok. Sa Kaeo also possesses abundant natural resources including diverse types of herbs grow in abundance with the soil condition. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 37: Sakaeo Herbs Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Unique natural and climatic conditions (soil, tropical climate) suitable for herbs production • Traditional knowledge of farming • Rich source of indigenous herbs • Supplies herbs to local value chains (other provinces	• Production from gardens/farms/natural sources prove to be difficult to quantify in total • Production process is not standardized and varies in the farming practices • Certification and standards issues shape up the eco-systems with growing niches in eco-herbs • Lack of Information System / database • Weak collaboration & co-ordination between herb experts and modern technologists

OPPORTUNITIES	THREATS
• Growing interest in herbal/traditional medicine • Traditional Thai medicine based hospitals (e.g. Abhaibhubejr) are developing • Wang Nam Yen hospital has R&D on herbal soap • Burappa University, Community Enterprise College – Vocational training about herbs	• Very dry climate and seasonal fluctuations causing drop in production and pushing up prices • Branding of herbs sourced from Sa Kaeo by other provinces and markets. Sa Kaeo is losing their identity

3.3.4.3 Value Chain of Sakaeo Herbs Cluster

The following herbs cluster VC is based on the responses of 'Aroma Scent Community Enterprise Sakaeo' (brand name 'Thammadi'), which is one of the groups based community development enterprises based in Sakaeo and related to herbs. There are 68 similar CDEs (groups based enterprises) in Sakaeo each involved in herbs collection, processing, and trading.

Table 38: Value Chain of Sakaeo Herbs Cluster

Steps	Actors Involved	Description	Linkages with Domestic VC & GVC Values
Step 1 - Herbs Collection			
From districts • **Wang Som Boon** • **Wang Nam Yen** • **Wat Thana Nakhon** • **Muang**	30 Local HHs (Households) Each HH is a member of the CDE Each HH-member has about 3-5 persons 7 (seven) staffs in the CDE	Types of herbs = 108; e.g. – Butterfly Pea, *Zingiber ottensii Valeton* – Pai Dam / Pai Pooksek, Aloe Vera, etc) Total collection about 1 tons of herbs per month Cost of collection = 100,000 THB per month Main herb Zingiber: 20-50 THB per kg	Local, Domestic sources of herbs .
Step 2 - Grading, Classifying			
	CDE staff CDE members	Different herbs are graded according to types and quality, use Finally they are classified as regards the process	Local
Step 3 – Processing			
	CDE staff CDE supervisor	Use directly as a poultice – 20 varieties Powdering, Drying Mixing with salt Extraction of liquid Vaporisation, Sublimation, etc.	Local
Step 4 – Packaging			
	CDE staff CDE supervisor Packaging done by CDE staff	Box, bottles, plastic cups, etc purchased from Bangkok Cloths – purchased from Sakaeo 30 different types of final products 100-500 pieces per month Cost about 30,000 – 50,000 THB per month	Traders from Bangkok
Step 5 - Marketing / Selling			
	CDE staff CDE owner, supervisor Trading agents Export agents Customers	OTOP shop in Kanchanaburi, Spa shop, souvenir shops Customer order by phones, Existing customers Agents, Exhibition, Trade Fair participation Avg. sales 50,000 – 80,000 THB per month	Direct Exports to Italy (7 years back). Now traders, export agents buy the herbs, sell them under their label.

3.3.4.4 Value Chain Map of Sakaeo Herbs Cluster

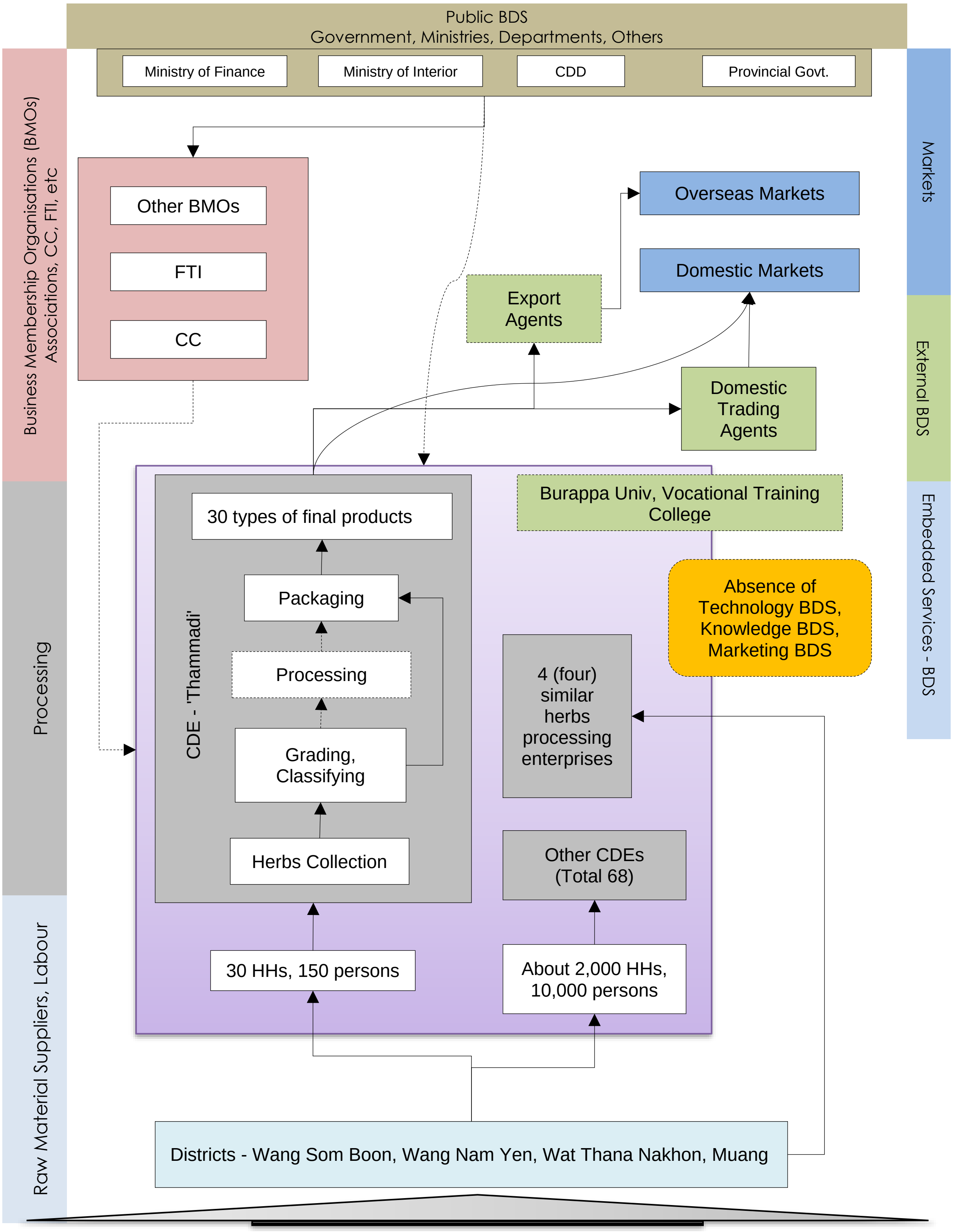


Figure 16: Value Chain Map of Sakaeo Herbs Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages
- Dotted Box implies a fragmented cluster

3.3.4.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Being a comparatively new province – Sa Keo lacks government support and lack access to BDS and lack awareness about BMOs;
ii. Underdeveloped business ecosystem - lack of cooperation between SMEs and other actors, inadequate number of knowledge based OTOPs, comparatively less supportive government schemes and new BMOs lacking good numbers of registration;
iii. Agrarian economy - young generation farmers tend to join other profession often choosing the lives of urbanites;
iv. Farmers lack knowledge, information about good harvesting practice and promotional schemes available to them;
v. Institutional deficiencies lead to information bottlenecks which deters the support available to the direct beneficiaries.

3.3.4.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Integration of VCs of different agricultural and herbal produce to achieve economies of scale of packaging and transportation and also achieve efficiency at the growers' level, e.g. lemon and honey;
ii. CFC capacity building is necessary for processing & manufacturing of herbs;
iii. Product diversification is necessary to grow several herbs together in the same field and also together with different horticulture products;
iv. Government and policy advocacy is needed to bring in more small entrepreneurs having a commitment to herbs production and passion into promotion of herbal products;
v. Young entrepreneurship development remains a key to the develop of this herb sector as sometimes they are more connected to international market getting in touch directly the government agencies, established enterprises, weaknesses of the value chains and scope for contributing into the value chains.

3.3.5 Chanthaburi Durian Production & Processing Cluster

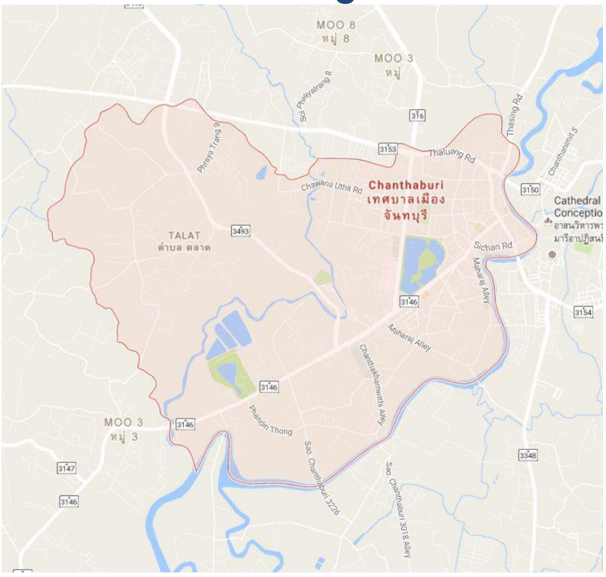
3.3.5.1 Provincial Overview

Chanthaburi, is an eastern province of Thailand sharing the border of Battambang, and Pailin provinces of Cambodia. Neighbouring Thai provinces are Trat in the east and Rayong, Chonburi, Chachoengsao, and Sa Kaeo to the west and north. The Gulf of Thailand is on the west.

Table 39: Chanthaburi Provincial Overview

Description	Number	Unit
Area of province	6,338	Sq. Km.
Administrative Subdivision	10	Districts
Population (as of 2014)	527,350	People
GPP (2014) at current market prices	104,204	Mil. THB
Average income per capita (16,725 THB / month)	200,699	THB
Unemployment (2015)		%
Minimum labour wage	300	THB/day

Source: http://www.aecthaibiz.com/pcocaecreport/fm/factsheet.aspx - monthly report as of April 2016)
Map Source: Google



Map 17: Chanthaburi, Thailand

Plantation and Output

- Durian exports amounted to THB 12.4 billion in 2014, from Chanthaburi
- THB 15-20 billion market size of Durian P&P cluster in Chanthaburi (estimated)
- Durian Production numbers

Table 40: Durian Production Data

	Durian
Planted Area (rai)	192,591
Harvested Area (rai)	167,504
Production (tons)	242,686
Value (mil THB)	9,073
1 rai = 0.16 hectares	

- Durian processing - there are some SMEs which prepare durian chips or durian crackers, durian pastes, or sell fried durian
- There are about 160 packing centres which packs fresh durian fruits after some processes in containers for exports.

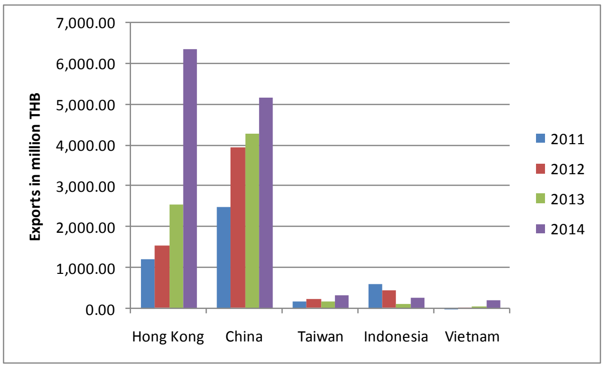


Figure 17: Durian Exports from Chanthaburi

Source: Ministry of Commerce, collated and reported by Officer of Commercial Affairs, Chanthaburi, pages 72 & 75

3.3.5.2 Cluster Introduction and SWOT Analysis

Durian (Scientific name: *Durio zibethinus*) is a tropical fruit, found in the South Eastern Asian countries like Indonesia, Malaysia, Thailand, Myanmar, Cambodia, and also in other countries like India, etc. Of the 30 different species, about 100 are grown in Thailand. In Chanthaburi, the Durian variety is Mon Thong, which is the best known for its thick, full-bodied creamy and mild sweet tasting. The identified strengths, weaknesses, opportunities and threats are listed below.

Table 41: Chanthaburi Durian Production & Processing Cluster SWOT Analysis

STRENGHTS	WEAKNESSES
• Suitable natural and climatic conditions • Close to Cambodia - source of migrant workers • Research facilities (3 universities in Chanthaburi) • Traditional knowledge and proximity to seaport	• Traditional mindset in farming • Government prioritises industry over agriculture and provides minimum support • Lack of coordination among cluster actors

OPPORTUNITIES	THREATS
• Modern technology • Hydroponics in durian cultivation can change the commercial landscape • Increasing demand for durian from overseas • Better research in durian processing across the world,	• Competition from other GMS / ASEAN countries • Emerging production centres e.g. Hawaii based Research Institute is trying to commercialise production of durian in Hawaii • High price of Thai service providers making Durian less competitive compared to China

3.3.5.3 Value Chain of Chanthaburi Durian Production & Processing Cluster

Table 42: Value Chain of Chanthaburi Durian Production & Processing Cluster

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC	Recommendations
Step 1 - Farming / Planting				
- 16-20 plants/rai - fruiting after 5 year - 3 person can manage 50-100 rais		Farmers, Department of Agriculture, Department of Agricultural Extension Fertiliser suppliers - Local, Imported by Bangkok agents from Russia, China, Scandinavia	Horticulture dept Chambers of commerce Fertilisers imported from Russia, China, Scandinavia	Scientific farming techniques needed; Expansion of watering (irrigation)
Step 2 – Harvesting				
- 6-9 months from flowering to harvest - 1 year after fruiting starts - 80-200 fruits per plant - production 200-300 kgs per plant	Local price: 100-120 THB/kg	Thai intermediaries of Chinese packing houses Local farmers Local exporters	Chinese packing houses. Harvesting is done by Thai intermediaries who supply their own labour.	Greater involvement of Thai government. Regulation of market.
Step 3 - Transportation & Packing				
- harvest collected by external BDS - produce transported by pick-up trucks - grading, cleaning, fungicide soaking - packing in containers	Wholesale price (Bangkok): 200 THB/kg	Chinese packing houses operated by Thai nominees Containers - 80 tons (40 feet long)	Chinese importers / agents. Logistics Chonburi warehouses Freight, Shipping, Clearing agents Shipping companies Insurance, Financial BDS	Farm to Market: 9-10 days. Logistics support needed for local farmers Financial facilitation Export credit Risk mitigation Regulation of markets
Step 4 – Processing				
- Durian paste - Durian crackers - Durian chips		Local OTOPs and CDEs	Local markets OTOP B2C portals Export agents	Better food processing technology needed Freeze drying technology needed Co-operative system of Common Processing Centre needed

3.3.5.4 VC Map of Chanthaburi Durian Production & Processing Cluster

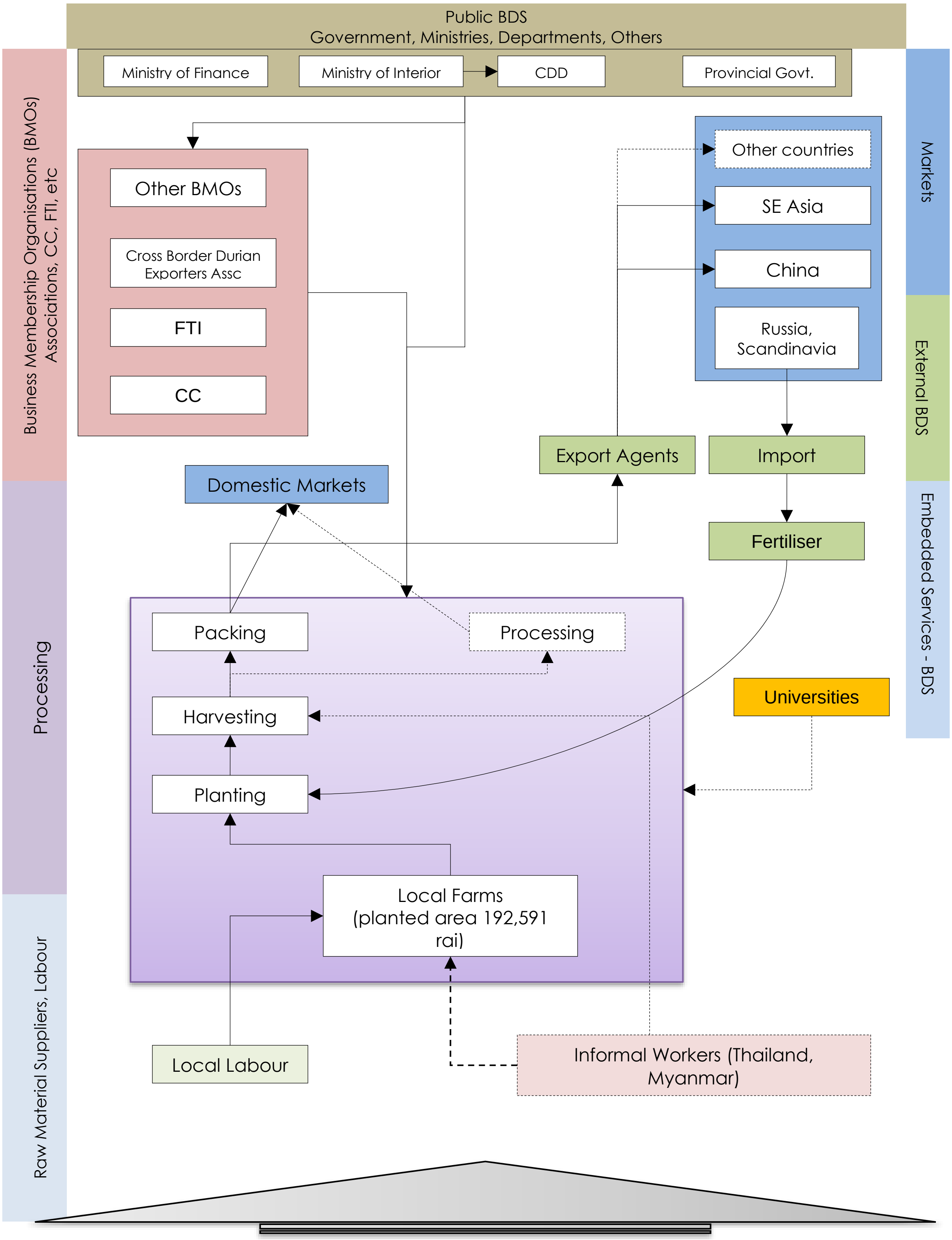


Figure 18: VC Map of Chanthaburi Durian Production and Processing Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.3.5.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified:

i. Capacity building need identified for: marketing, product improvement, business management, production processing systems, focus on agricultural sector, focus on tourism sector (Tourism Based OTOP management TBO); eco-tourism (home-stay),
ii. Weak integration of technology, innovation with traditional knowledge to scale-up durian production;
iii. Need market linkages and partnerships with technological collaborators either to access new market or diversify to jointly grow durian and other fruits / vegetables / herb;
iv. Lack innovation and technology to diversify use of Durian;
v. Weak access market to diversify sale of durian in diverse geographical markets.

3.3.5.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Improving the competitiveness of SMEs involved in the processing of durian through ToT quality trainings, capacity training to better cooperate with the immediate value chain actors;
ii. Capacity training to raise awareness about business plans and to improve financial literacy;
iii. Need information dissemination channels – branding of Chanthaburi
iv. Knowledge sharing with other provinces to exchange best practices in production and processing of durians and achieve supply chain efficiency in selling fresh and processed durians in bulks;
v. Establish market linkage of fresh and processed durians with new geographical markets through e-commerce and other innovative trade platforms;
vi. Packaging support – preferably extended together with Department of Industrial Promotion and CDD, to assist the producers in packaging improvement and / or product improvement.

3.3.6 Trat Community Based Tourism Cluster

3.3.6.1 Provincial Overview

Trat is an eastern coastal province of Thailand, 315 kilometers from Bangkok. The town occupies the area of 2,819 sq kms. Trat has 5 districts: namely Muang, Khao Saming, Laem Ngob, Klong Yai, Bo Rai and 2 sub-districts; Ko Kud and Ko Chang.

Table 43: Trat Provincial Overview

Description	Number	Unit
Area of province	2,819	Sq. Km.
Administrative Subdivision	7	Districts
Population (as of 2015)	222,855	People
GPP (2014) at current market prices	36,999	Mil. THB
Average income per capita (25,742 THB / month)	98,632	THB
Unemployment (2015)	0.10	%
Minimum labour wage	300	THB/day

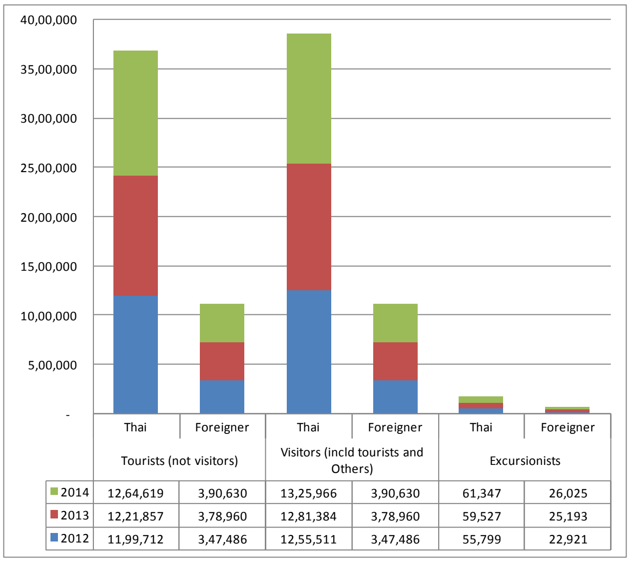
Source: Provincial Commercial Operation Center of Trat at http://www.aecthaibiz.com/pcocaecreport/fm/factsheet.aspx - monthly report as of May 2016)

Map 18: Trat, Thailand
Map Source: Google

The province is known to be a family friendly destination for tourists. Tourists from Australia, New Zealand, Europe, Cambodia, China, and other countries visit Trat as a part of their itinerary, including visit to Angkor Wat, Cambodia. European tourists are drawn to the natural serene atmosphere and to the health regenerative services offered by the local hospitality enterprises.

Size of Cluster

- In 2014, the Trat tourism sector earned c.a. THB 27 billion (Trat Provincial Statics, 2014);
- Estimated revenue of Trat Health and Well-being Tourism Cluster (including hotels, resorts, holistic medicine tourism) is more than 50 bill THB;
- A 20 room hotel in Trat runs at 15-18% capacity during the green season (or wet season) and at a maximum level of 40% capacity during the high season, can earn THB 18 million annually;
- From 2012 to 2014, tourist turnout was very low which is indicative of a sector operating well below its capacity;
- The tourism related data is represented in the figure on the right.



	Tourists (not visitors)		Visitors (incld tourists and Others)		Excursionists	
	Thai	Foreigner	Thai	Foreigner	Thai	Foreigner
2014	12,64,619	3,90,630	13,25,966	3,90,630	61,347	26,025
2013	12,21,857	3,78,960	12,81,384	3,78,960	59,527	25,193
2012	11,99,712	3,47,486	12,55,511	3,47,486	55,799	22,921

Figure 19: Trat Tourist Trend

Source : Chapter 14 of Trat - Provincial Statistical Report 2015

Hospitality sector

- There are 52 islands in the Trat archipelago - most famous island is Koh Chang (Elephant island);
- As of 2014, there were 9,937 rooms.

Transportation

- Very well connected by roads with Thailand and Cambodia
- Sustainable Tourism Trat is a designated area for sustainable tourism by the Tourism Administration[5]

[5] *Source: Gazette Volume 121, Special 105 dated 24 September 2547 i.e. 2004 BCE; http://www.dasta.or.th/en/*

Tourist Seasons

- Rainy season or green season - lasts for 8 months, from May to October. High season (hot and warm climate) - lasts for 4 months; from October end to November, and slows down from December to April.

3.3.6.2 Value Chain of Trat Tourism Cluster

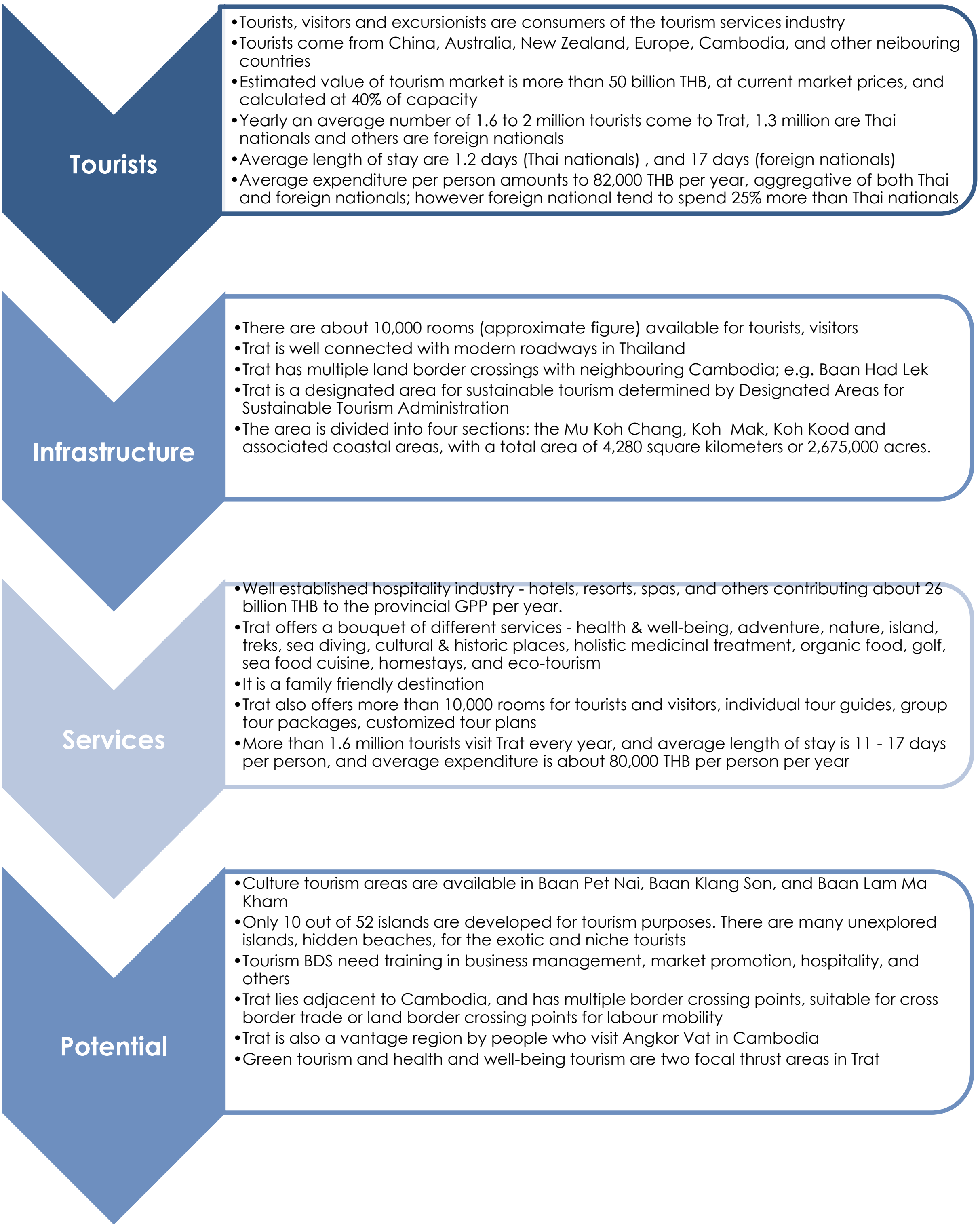


Figure 20: Value Chain of Trat Tourism Cluster

3.3.6.3 Value Chain Map of Trat Tourism Cluster

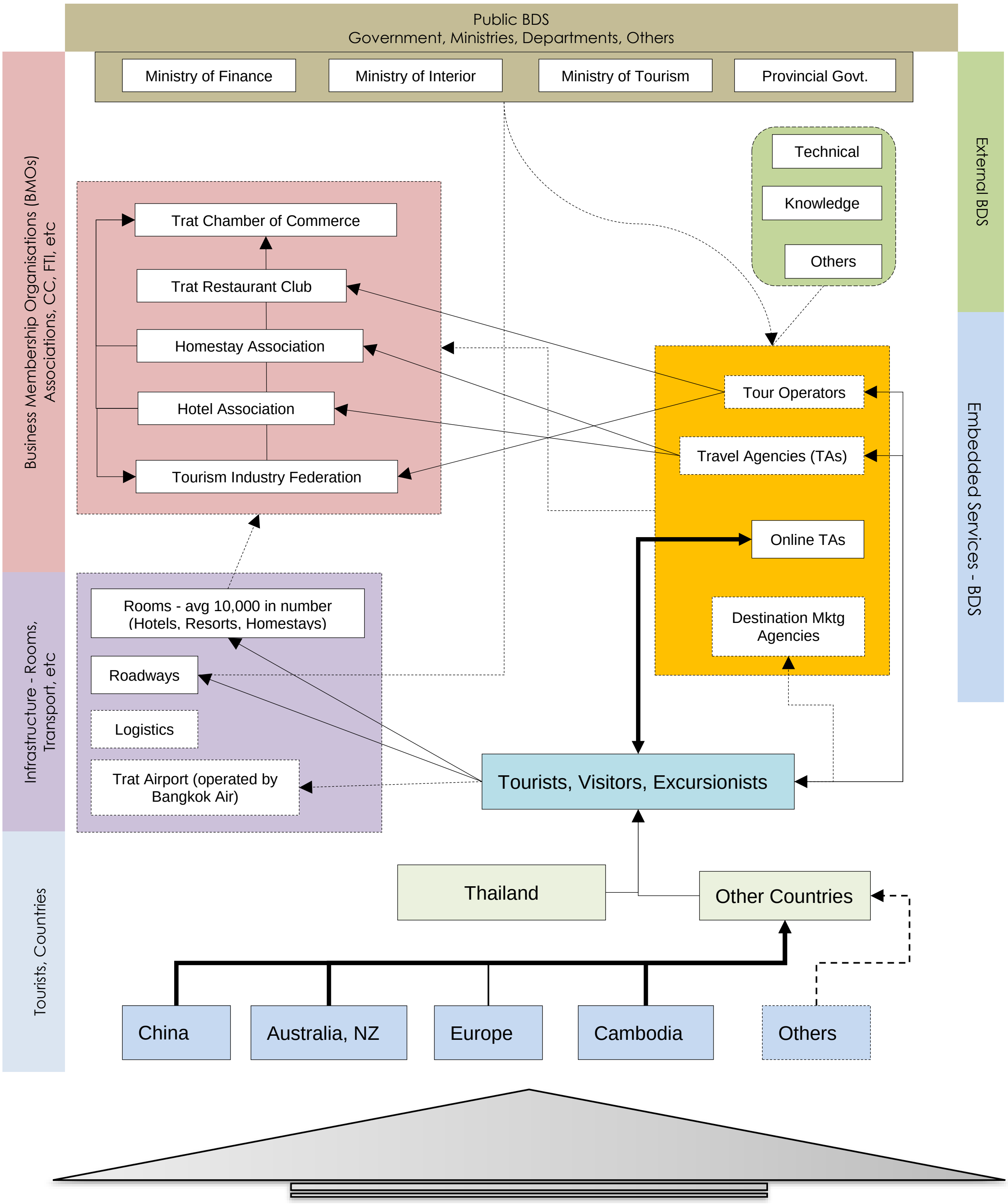


Figure 21: Value Chain Map of Trat Tourism Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean very strong linkages - e.g. most tourists come from China, Australia, New Zealand Europe, and Cambodia. Tourists collect information either from online travel agencies (book their hotels, plan their itinerary, make tour plans, etc.)

3.3.6.4 Community Development Enterprises

Community Development Enterprises (CDEs) are popularly known as OTOP enterprises, which are products identified with a 'tambon' or sub-district of a province. The CDEs are mainly traditional artisans, physicians, and other knowledge resources persons or communities, who have specialised skills in wood work, herbal products, weaving, hand skills, processing of food, and / or produce very unique products, which are identifiable with a particular community and geography. The indicative statistics of Trat CDEs are given below:

Table 44: Trat Community Development Enterprises

	Enterprises Registration Record			
Location	**Community Producer group**	**Single Producer**	**SMEs**	**Total**
Country	25,234	14,851	614	40,699
Trat	60	114	6	180

Source: http://113.53.241.24/CDDReport/rpOverviewProvince.aspx (2014)

Type of Product	Foods	Drinks	Fabric & wearing apparel	Apparatus (Appliance, decoration & souvenir)	Herb (non-food)	Total
Country	25,484	3,440	18,398	25,812	10,412	83,546
Trat	295	26	21	44	106	492

Source: http://113.53.241.24/CDDReport/rpCategories.aspx (2014)

3.3.6.5 Constraints of the Cluster and the Value Chain

From the sub-sector and value chain analysis of tourism in Trat province, a number of bottlenecks were identified.

i. Logistical bottlenecks slowing down development of Trat particularly making it difficult to tourists to visit, e.g. roadway from Chanthaburi; the province lacks a grand plan to develop all the tourism related enterprises;
ii. Lack of coordination and cooperation between community development enterprises and tourism sector.

3.3.6.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Tourism advertisement such as brochure, tourism information, leaflet, tour program / activities, hotel / restaurant information should be well prepared by the tour operators with a focus on cultural tourism;
ii. Integrating tourism into community development is needed to promote the community enterprise;
iii. OTOP products are needed to promote as part of tourism on a selection basis alternatively to reach out to new loyal customers;
iv. Capacity development on quality and packaging for OTOP enterprises is supported by Community Development Office. However, greater involvement of the local authorities is needed;
v. Culture tourism areas are available in Baan Pet Nai, Baan Klang Son, and Baan Lam Ma Kham which can be promoted as part of the provincial development plant;
vi. Model of tourism development in short and long terms, and master plan for tourism sector are needed to be shared by related agencies of the province. In this connection, this is to be noted that Trat is a designated area for sustainable tourism determined by Designated Areas for Sustainable Tourism Administration (Public organization (http://www.dasta.or.th/en/). Four designated areas in Trat comprising of Koh Chang (Koh means Island), Koh Mak, Koh Kod and associated coastal areas which is one of designated areas for sustainable tourism in Thailand including Chiang Mai Night Safari, Pattaya city and related areas, Sokhothai – Kamphangphet Historical Parks, Loei province, Old town of Nan province, and Ancient city of Ou-thong province. The four designated areas of Trat cover 4,280 sq. km.

3.4 Vietnam

Provinces Name	Cluster Name
➢ Tay Ninh	• Custard Apple Cluster
➢ Ca Mau	• Dried Fish Cluster
➢ Can Tho	• Cat Fish Cluster
➢ Kien Glang	• Shrimp (Tiger Prawn) Cluster

Map 19: Provinces and Clusters in Vietnam

3.4.1 Tay Ninh Custard Apple Cluster

3.4.1.1 Provincial Overview

Tay Ninh is considered one of the provinces playing an important role in the development of the southern key economic region. The province remains an important gateway to Cambodia and further to other GMS countries.

Agriculture remains an important sector for the development of Tay Ninh. Main crops in Tay Ninh are sugarcane, manioc, peanuts, rubber, tobacco, custard apple, maize etc. - of which sugarcane and peanuts are the first in output. Tay Ninh has established specific zones specializing in particular crops combined with establishment of factories to support processing of agricultural products (sugarcane, manioc). Other important sectors are forestry, tourism, services etc.

Map 20: Tay Ninh, Vietnam
Source: Google
Source: Vietnam Trade Promotion Agency
http://www.vietrade.gov.vn/
Map: Google

<u>About the Province</u>

- 4000 sq. km area,
- Population 117 million
- Agriculture: 30% of Provincial GDP
- GDP per capital $ 2000,
- 240 km. border area
- 2 international border gate

3.4.1.2 Cluster Introduction and SWOT Analysis

Custard-apple grown in Ba-Den mountain in Tay Ninh province in Vietnam contains high rate of protein content, total sugar content, energy (calories) with neutral pH. in addition, the left flesh of custard-apple also contains many trace elements such as potassium, zinc , magnesium, manganese, iron, calcium and many types of vitamin such as B1 and C. With characteristics of a big fruit, tough flesh, sweet-smelling taste, Ba Den custard-apples are not only sold in all major markets of the country, but also being exported to several international markets. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 45: Tay Ninh Custard Apple Cluster SWOT Analysis

STRENGTHS	**WEAKNESSES**
• Sweet, unique and tasty products. • Healthy products with high protein, vitamin and minerals • Soft fruits – suit babies and elderly • Supporting weather in Ba-den mountain with cooler long nights in the winter months	• Price taker • Lack of value adding / processing • Low shelf life • Difficulty in handling (sensitive products) • Lack of overseas consumer knowledge in handling / consuming the fruits • Lack of volume to service export market
OPPORTUNITIES	**THREATS**
• New varieties – seedless, color • Room to increase market share / consumption – both domestically and internationally • Value adding / processing possibilities • New packaging / products possibilities • Strategic support scheme from government/ development partners	• Consumer / market turn off from poor quality fruits • Flooded domestic market if export not developed • Ageing trees • Water restriction and climate change

3.4.1.3 Value Chain Map Tay Ninh Custard Apple Cluster

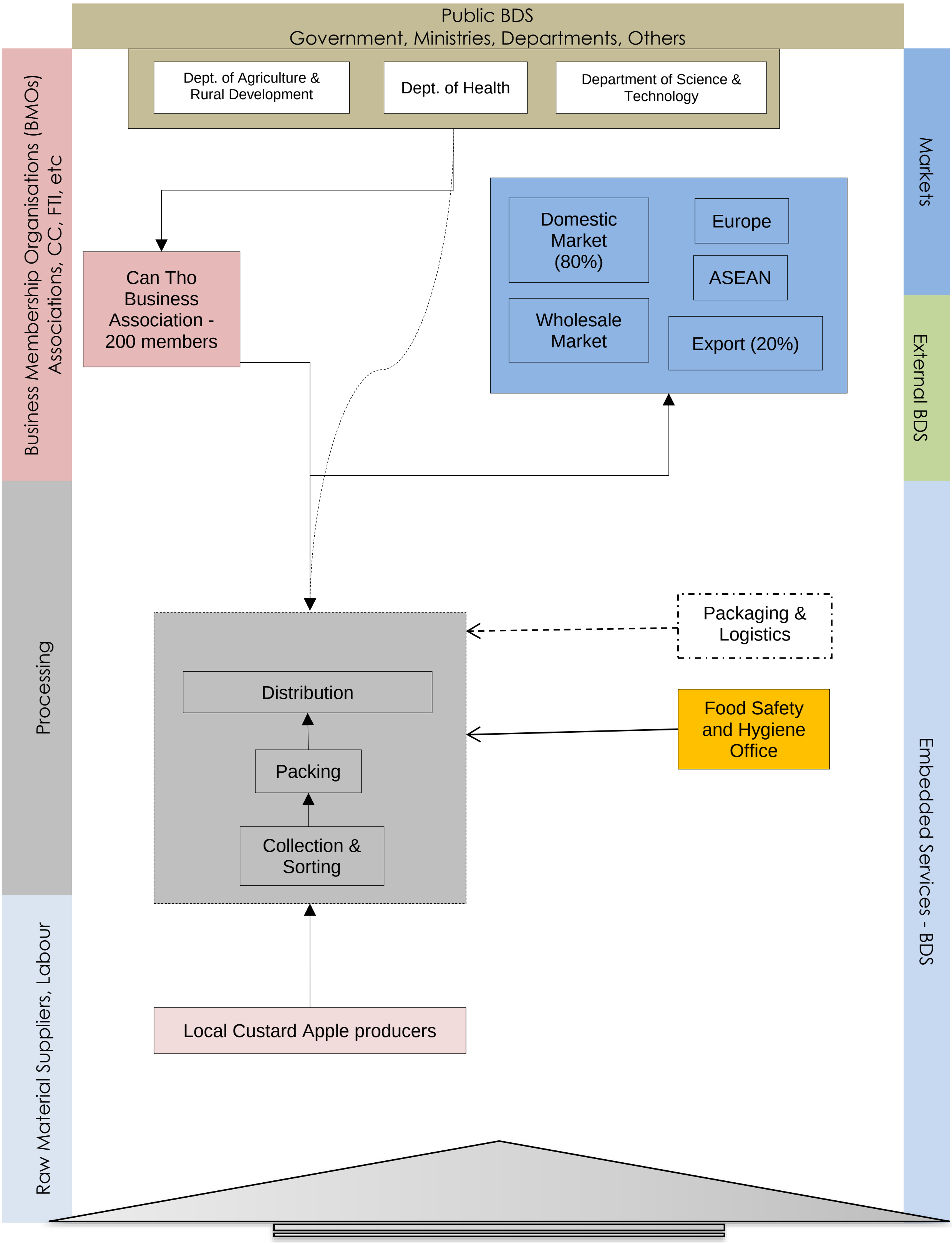


Figure 22: Value Chain Map Tay Ninh Custard Apple Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkage

3.4.1.4 Value Chain of Tay Ninh Custard Apple Cluster in Numbers

Area	1 ha (hectare)
Productivity	7 tons/season (2 seasons per year)
Total volume	14 tons (year)
Average price	VND 18,000/kg (USD 0.8/kg)
Total revenue	USD 11,325.84 (year)
Labor	1 male worker working full time (12 months/year) and 1 male worker working for 150 days/year)

Costing (per hectare):

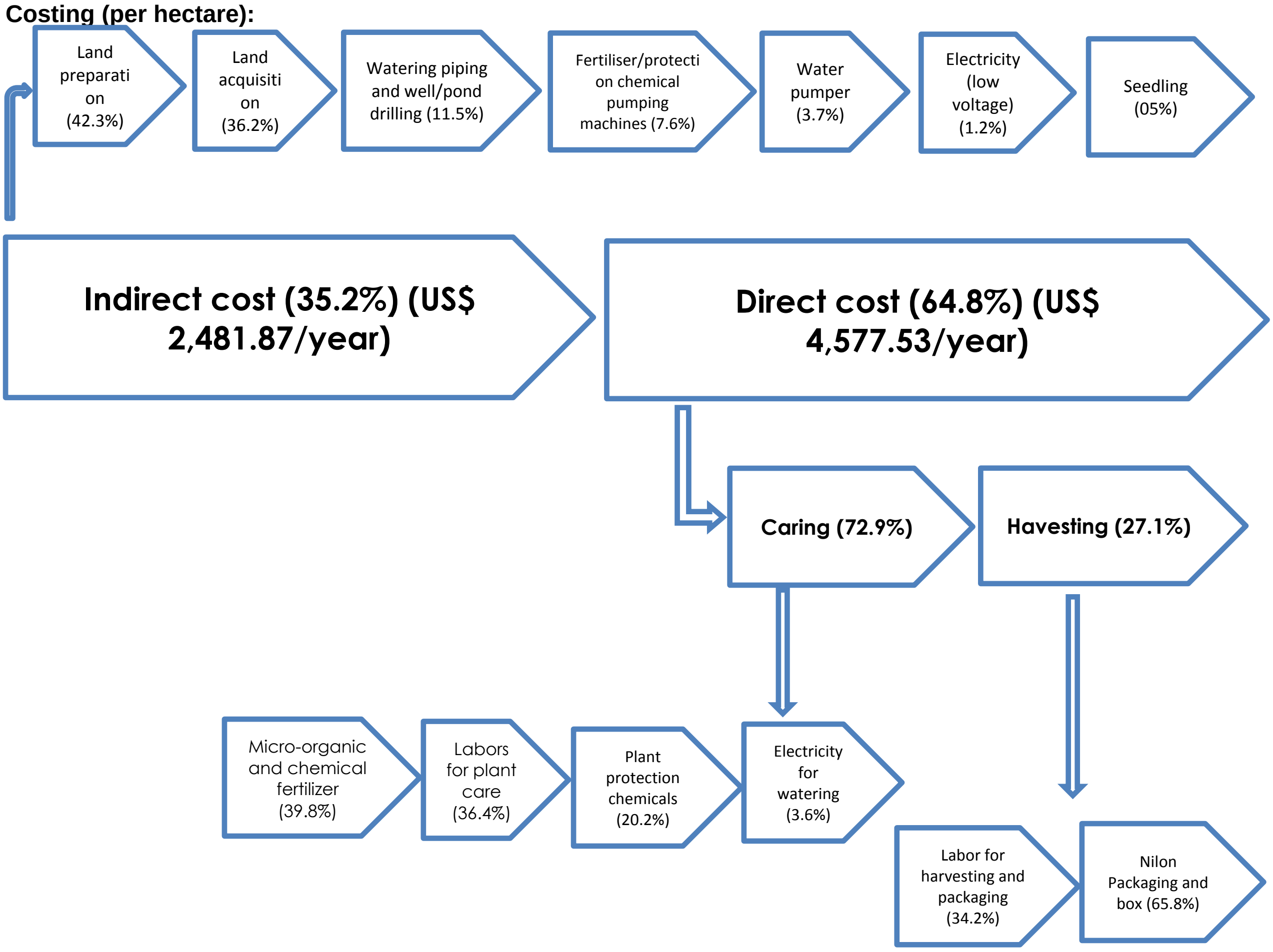


Figure 23: Value Chain of Tay Ninh Custard Apple Cluster in Numbers

3.4.1.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. With an excess of 20% custard apple production after meeting the domestic consumption and future likely greater quantity harvest after adopting better farming and harvesting practices and new plantation in and around Ba-Den mountain, new geographical market remains a key to establish with competition from Australia and Hawaii;
ii. Lack of access to appropriate packaging leave a large amount of Durian with inferior quality and reduced prices;
iii. Lack of understanding about the nutrient contents custard apple and the proper way to consume remains a marketing constrain for custard apple in the new markets;
iv. Lack of research and development of processing of custard apple as new products has also affected the better use of custard apples which has somewhat shorter shelf-life as ‘fresh fruits;

v. Availability of good quality seeds and lack of new plantation are another constraint to maintain the current level of custard apples production from the existing fruit-bearing trees when they start ageing;
vi. Of the current domestic consumption of 80% of the total production, the cluster producers remain vulnerable becoming price-takers during the high season as the ripe fresh fruits have short shelf-lives.

3.4.1.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Training on export consortia formation with selected cluster producers to strengthen the export potential of this sector;
ii. VC up gradation with good quality seed, improved farming practices, improved handling system and packaging to respond to the sensitive nature of custard apples;
iii. Research and innovation to explore diversified use of custard apple rich in nutrients and minerals;
iv. Connect cluster producers and SMEs in online marketplace to search for new large international buyers within a short time and train them on getting the most of online marketplace.

3.4.2 Kien Giang Tiger Prawn Cluster

3.4.2.1 Provincial Overview

About the Province

- Population of the province: 1.8 million
- One of the most important province in Mekong Delta

Biggest in Vietnam in terms of land area and agricultural development

- Total 8000 hectare for shrimp cultivation
- 40% shrimp of the province gets exported
- Employement in shrimp industry: 10,000
- Testing Lab for shrimp: NIFIQUAVEB

Access to Finance

Agribank:
Loan to farmers (agriculture and fishing)
Loan to traders & collectors
Rate of interest is 7%

Bank for Industry and Commerce:
Loan to SMEs- priority
Advocacy for SME policy development
SME banking
Rate of interest- 7-11%

Map 21: Kien Giang, Vietnam
Map Source: Google
Source: http://www.vietrade.gov.vn/en/index.php?option=com_content&id=1353

3.4.2.2 Cluster Introduction and SWOT Analysis

Kien Giang is a coastal province in Vietnam and is suitable for farming tiger shrimps. Shrimp is a product on demand in food menu. Annual sales of shrimps amounts to USD 50-60 bn worldwide and are growing at an average of 9% a year. The main exporting countries remain as Thailand, Vietnam, Indonesia, Pakistan, Bangladesh and some other countries from Asia and Latin America. The intensive shrimp farming, particularly tiger shrimp is promoted by Vietnamese government and development partners as raise income for the poor. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 46: Kien Giang Tiger Prawn Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Integrated farming, processing and marketing including export • Importers send their supervisors to guide adopting 'best practices' in farming and processing and to check quality at every stage. • Professionals working in the shrimp industry have technical background (passed out from Fisheries & Agriculture Dept of Can Tho University)	• Lack of pro-active BMO • Limited contract farming- contract farming ensures better quality control • Domestic brand (KTC FOOD) is okay but no export brand developed so far • Improper quality control across production chain
OPPORTUNITIES	**THREATS**
• Modern technology • Preferential Investment facilitation (lower land rate than marker rate, relaxation in taxation) • Support for trade fair participation: VIETFISH fair at Baclieu, Vietnam Logistics facility getting developed- Govt. is paying due attention to it • Capacity expansion indicating positive outlook	• Fluctuating market price • Diseases of shrimps • Increasing competition from other AEC zone countries • Use of illegal antibiotics • Adverse effect on nature e.g. elimination of mangrove forests • Potential livelihood loss and social unrest

Value Chain of Kien Giang Shrimp Cluster

Figure 24: Shrimp Cluster Value Chain Steps

3.4.2.3 Value Chain Map of Kien Giang Shrimp Cluster

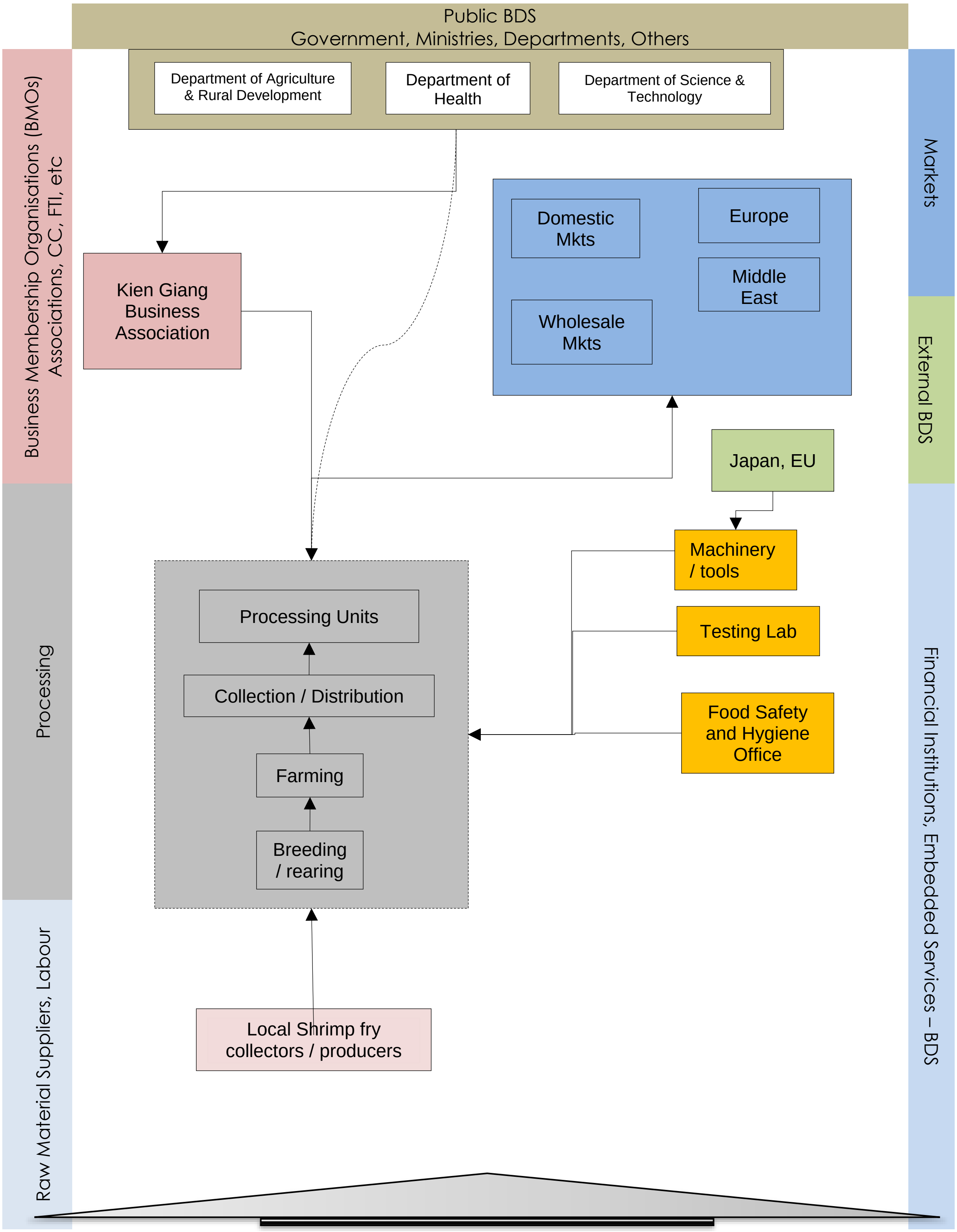


Figure 25: Value Chain Map of Kien Giang Shrimp Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.4.2.4 Shrimp Value Chain in Numbers

Table 47: Shrimp Value Chain in Numbers

White Shrimp			
No. of companies- 100	No. of Firms; 7 large &20 medium &1000 small/ household		• Domestic • Export: EU (Germany), Middle East, USA and Canada
Breeding time: 3 months	3 months for farming/ growing	2 days for processing	
	Price: VD 105,000-110,000/ 100 shrimp	60% higher price from farming to processing	Difference in domestic & export market price 15 %
		After processing, weight becomes 70-75% compared to raw fish There is about 60-70% value addition due to processing	
Tiger Shrimp			
	RM price of Tiger Shrimp VD 150,000-300,000/ kg. 40 shrimp/kg.	***Other part of VC almost same as White Shrimp***	
Casadin			
	Raw material price: VD 18,000-20,000/ kg.		Market Price (post processing): VD 7000-8000/ 150 gram

3.4.2.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Investment capacity of SMEs is limited leaving it dependent on buyer-introduced quality check on farming practices, harvesting and processing and thus losing itself of potential value addition;
ii. Weak access to technical development of the shrimp processing facilities;
iii. Lack of capacity in complying with testing & international quality certification;
iv. Lack of understanding and compliances with hygiene practices in food processing has been identified as another major constraint;
v. No clustering or joint activity
vi. No co-operation among the similar companies to opt for common good and lack of association and government effort in branding Vietnamese shrimps;
vii. Lack of social compliance involving forcefully converting cultivable land into shrimp-ponds discriminating against the native communities of their livelihood options;
viii. Potential environmental hazard damaging the coastal mangroves and the wildlife around that;
ix. Image problem with use of antibiotics, traces of bacteria, coercive worker's management during high seasons, deprivation of local farmers and fishing communities and perceived environmental hazard.

3.4.2.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Standard and quality training to the shrimp-processing SMEs to implement quality programs across the value chain;
ii. Market development through implementation of different quality and social certification to counter the bad press about shrimp farming and diversify shrimp export in Asia destinations;
iii. Export consortia formation training to the cluster producers to strengthen access to end market;

iv. Promotion of cross border trade agreements to take most out of the regional trade agreements;
v. Introduction of embedded BDS to streamline most of the producers – large or small to counter the critics of quality of shrimps;
vi. BMO Capacity building to represent the sector with identified constraints and offered solutions to attract proper policy intervention;
vii. Support participation in trade fairs, business matchmaking and structured learning visits.

3.4.3 Can Tho Catfish Cluster

3.4.3.1 Provincial Overview

Can Tho province is a fertile area suitable for agriculture in Mekong delta. Along with rice, the province is home to many orchards and farms and floating market dotted around the provincial capital attracting tourists. Can Tho remain important as the regional trade and transportation hub.

About the Province

- Total 37 SMEs involved in fish processing and export
- Govt. plan for developing the 2 sectors:
  - Prime Minister's Decree 2013
  - Investment in rural development- agri products, harvesting, processing-private sector promotion in agri including fish sector
  - Govt. support-tax benefit
  - Financial support to promote technology and innovation

Map 22: Can Tho, Vietnam
Map Source: Goolge

3.4.3.2 Cluster Introduction and SWOT Analysis

Catfish sub-sector (e.g. *Pangasius*) in Vietnam is largely dominated by export (roughly 90% leaving around 10% for domestic consumption) and employ a large section of working population in catching, breeding, rearing and processing catfishes for export and domestic markets. Processing companies are the most powerful actors in the Pangasius chain, providing the biggest input of labour and capturing nearly three quarters of the total net value added in the chain. Support is provided by the government through VASEP (Vietnam Association of Seafood Exporters and Processors) and other actors. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 48: Can Tho Catfish Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• Strong export market (90% of total production) • Employ a large worksforce in the sector • Active and influencing associations earning foreign currency and securing government support • Supportive government policy for the improvement of catfish sub-sector • Supportive natural conditions for catfish farming	• Scanty support to fishermen and fish-traders (belonging to informal sector) compared to exporters earning little motivation from some of the important value chain actors • Fishermen's dependency for informal finance on the informal value chain actor lacking proper access to formal financial mechanism • Lack of support to small scale processors
OPPORTUNITIES	**THREATS**
• Growing export market • Growing familiarity as Mekong Specialty in upper-end restaurants catering also tourists • Development in farming techniques to ensure greater production	• Bad press about cat-fish in general including hormone treatment, antibiotics etc. • Weak relationship among the channel actors with restricted share of value on some actors (e.g. fishermen)

3.4.3.3 Value Chain Map of Can Tho Catfish Cluster

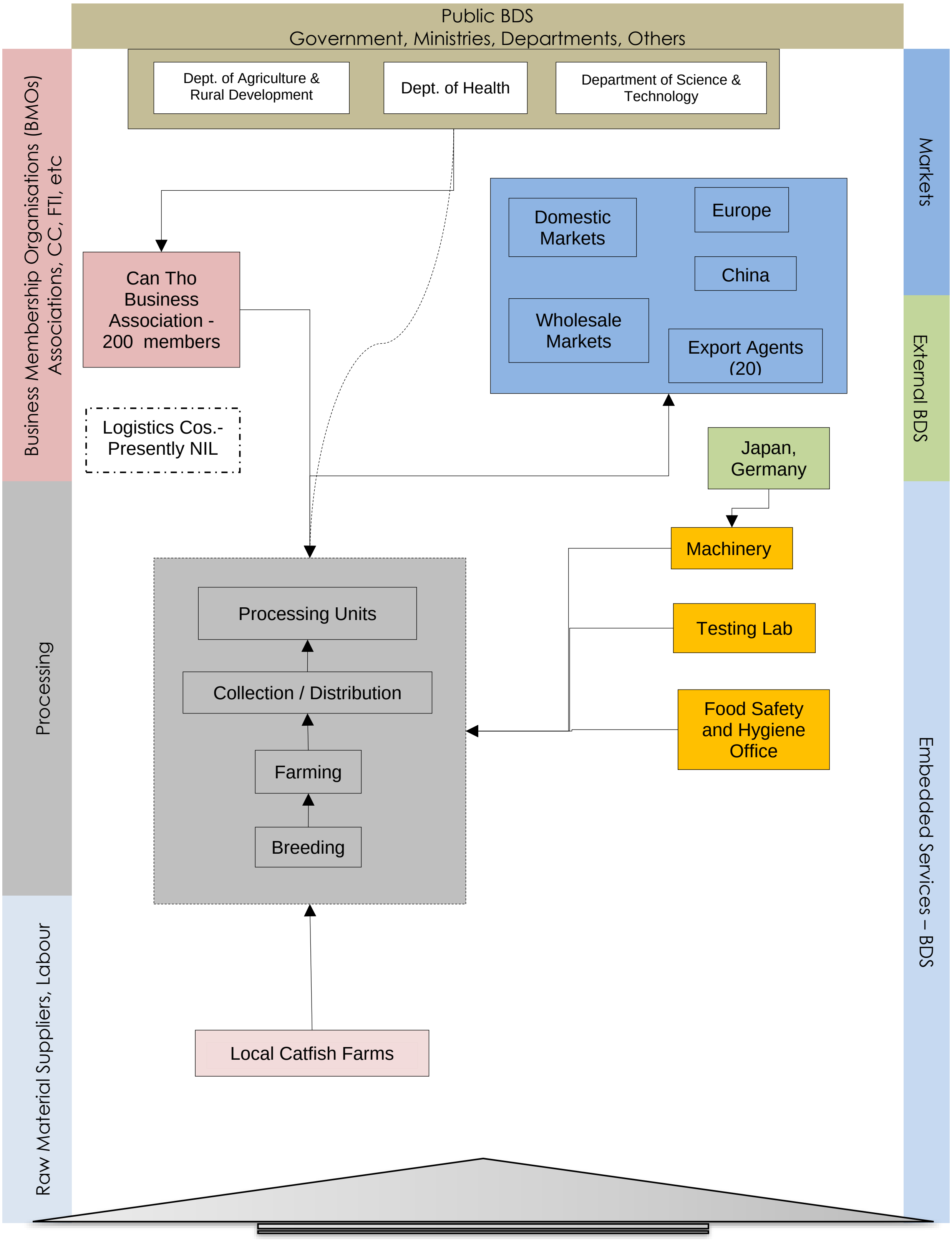


Figure 26: Value Chain Map of Can Tho Catfish Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.4.3.4 Value Chain of Can Tho Catfish Cluster in Numbers

Figure 27: Value Chain of Can Tho Catfish Cluster

Table 49: Value Chain of Catfish Cluster in Numbers

Catfish			
No. of companies involved in CT: **Breeding-5-7** **Animal Feed supplier-10**	20	25	Domestic-19 Export-20
Cost: **VD 500/kg for Type 1-100 pieces/kg type** **VD 1500/ kg. for Type-2 - 50 pieces/kg type**	VD 19000/kg. Claims to pay 1000 more than market price	Processing cost: VD 5500-6500/kg.	Export price: $ 1.95-2.00/ kg.
	Compliance of Int. Standards: o GLOBAL G.A.P. o ASC-C-00282 o ASC-BV-014-VN o ISO 17025 for in-house/company testing lab o HACCP o BRC o IFS	**Packaging:** IQF Block interleaved Shatter pack **Product Testing Facility/ Lab:** VINA Control NAFICAT No private lab. Yet	Brand name called 'SOUTH VINA'
Time taken:	8-10 months to grow in farming		
Loss:		Processing loss:1.5 kg becomes 1 kg after processing	
Profit margin:			2% due to strong market competition overseas

3.4.3.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Lack of BDS support to smaller processors who lack the capacity in conforming with the quality and standards and often end up in the low-value domestic market;
ii. Overseas market competition from mostly other GMS / ASEAN countries exporting catfish to western markets;
iii. Lack of export market research to target niches differently;
iv. Limited cross border trade in GMS as most other GMS countries are also strong producers of catfishes;
v. No VC up gradation in terms of value addition of catfish across stakeholders
vi. Lack of policy implementation- entrepreneurs started doubting efficacy of policy implementation (e.g., VCCI is implementing a fishery sector value chain development project with the support of the Govt; however, SMES are not actively participating in this project);
vii. Information asymmetry- lack of awareness on the part of entrepreneurs about Govt. schemes leaving only the large processors in close contact with the policymakers;
viii. Government is not able to meet the requirements of catfish cluster SMEs like in other sectors.

3.4.3.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Cluster development in terms of capacity development and market development of the smaller producers;
ii. VC up gradation with high-end technology adoption benefitting both large and smaller enterprises;
iii. Export consortia formation and export market development by offering ToT trainings to the lead SMEs who will conduct repeat trainings to raise awareness about farming practices and quality assurance among smaller enterprises;
iv. Export market research to design different strategies for different market;
v. Logistics development in terms of common branding.

3.4.4 Ca Mau Dried Fish (Snakeskin Gourami) Cluster

3.4.4.1 Provincial Overview

Ca Mau is the southernmost province in Vietnam, a triangular stretch of land, with an average height of seven feet above the sea level, mostly formed by the deposits of the Mekong River. This low-lying area is the host to a number of forests and gardens and intersected canals and water-bodies that is supportive to growing fish-stocks. An extensive network of canals also supports a strong agricultural sector, as well as providing a popular means of transport.

Map 23: Ca Mau, Vietnam
Map Source: Google

Economy

The economy of the region is based on cultivated as well as natural products. Rice, honey, wax, fiber mats and fish are some of the things the locals of the region trade and export. The province has a large activity in fishing including catching and processing fish e.g. drying. Drying of different fish species is an indigenous economic activity suited to this coastal region. However, quality control in the drying process is still a question mark as there is little indigenous knowledge available to prevent fungal and maggot infection.

Area: 5,331 km²
Population: 1.22 million (2013)

3.4.4.2 Cluster Introduction and SWOT Analysis

More than 330 households together produce 10-15 tonnes of dried snakeskin gourami each year in Ca Mau province making it one of the major economic activities in the province. A kilo of dried snakeskin Gourami costs USD 18 in the market. The product has a strong domestic sales-base. Producers may earn upto USD 9000 at the eve of 'Tet' or the Vietnamese new year. The identified strengths, weaknesses, opportunities and threats are listed below:

Table 50: Ca Mau Dried Fish (Snakeskin Gourami) Cluster SWOT Analysis

STRENGTHS	WEAKNESSES
• High domestic market demand all year round, particularly during the time of Vietnamese new year which witness large amount of domestic consumption as a traditional food • Indigenous knowledge about fish-drying • Regular supply of gourami fishes, the raw material for the dried fish	• Lack of pro-active BMO to engage in active negotiation with the policymakers to secure support • Limited contract farming- contract farming ensures better quality control • Improper quality control across production chain • Support to the cluster similar to other clusters in Vietnam
OPPORTUNITIES	**THREATS**
• Modern technology • Support government policy targeting dried snakeskin gourami • Technology upgrade, particularly drying • Quality improvement together with other dried food	• Fluctuating market price • Irregular demand outside new year

3.4.4.3 Value Chain of Ca Mau Dried Fish Cluster

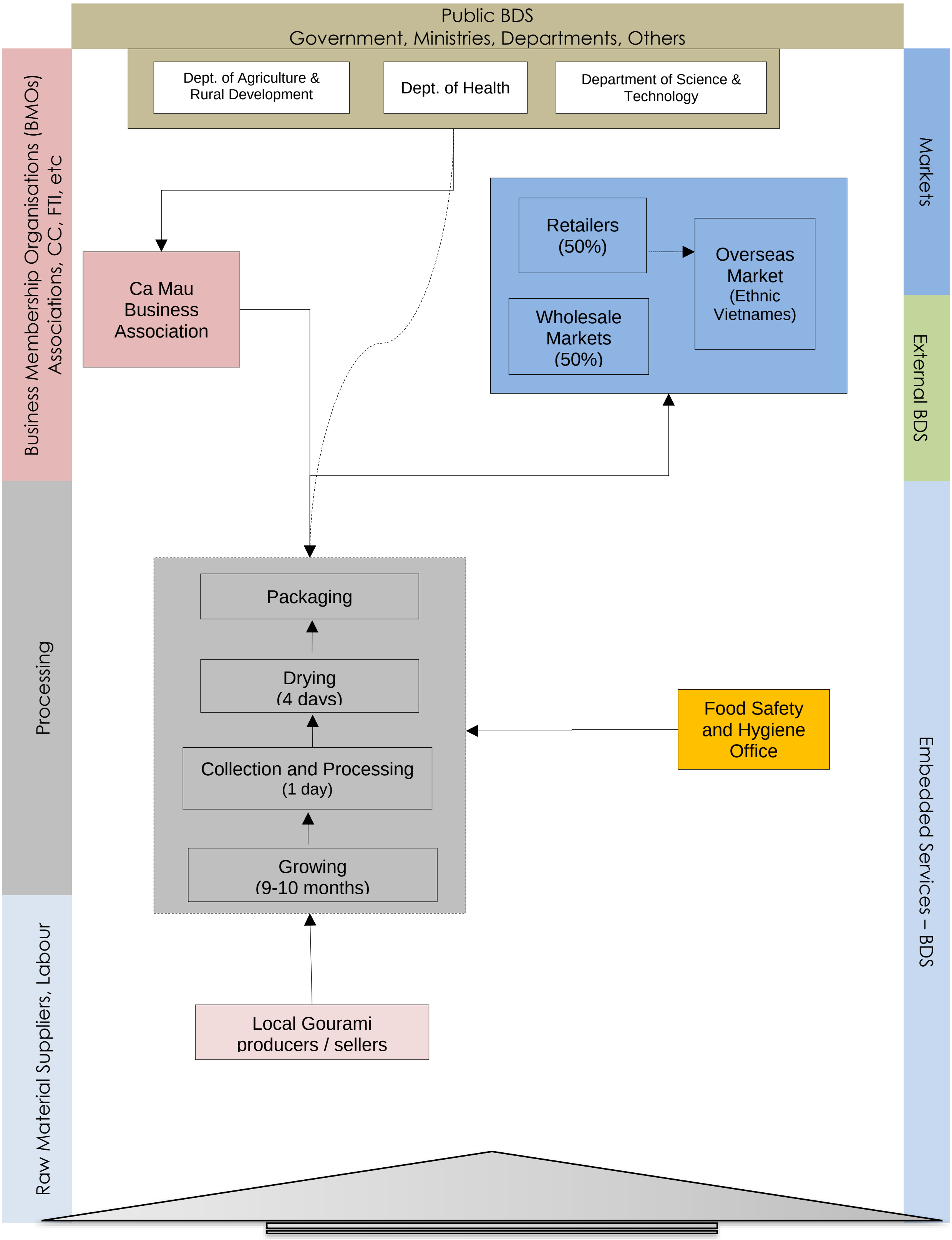


Figure 28: Value Chain of Ca Mau Dried Fish Cluster

Notes:

- Dotted boxes mean either non-existent or negligible presence or poor co-ordination in the VC
- Dotted lines mean very low linkages or non-existent linkages
- Strong lines mean strong linkages

3.4.4.4 Ca Mau Dried Fish Cluster Value Chain in Numbers

Table 51: Ca Mau Dried Fish Cluster Value Chain in Numbers

Steps	VA	Actors Involved	Linkages with Domestic VC & GVC	Comments
Step 1 – Farming				
2-3 ponds per household (HH), of an area ranging from 1500 to 2500 m2 per pond. 156 households engaged in production in selected commune	Average revenue per HH VND 154,000,000 and income per HH VND 13,585,714	Households / farmers, Department of Agriculture and Rural Development	Local authorities support in issuing GI Certificate and producing fingerling	123 workers (50% female) are in involved for 5 full months in this occupation in the area producing 360.8 tons
Step 2 – Harvesting and processing				
1-2 day of harvesting and 2-3 days of processing (step 1: drying and cleaning, step 2: salting)	VND 200,000 / kg dried pectoralis; From 60 tonnes of fresh pectoralis. Total revenue is 3.4 billion VND	1 tonne of fresh fishes requires 20 workers to clean and dry in 1 day, each labourday costing 250,000 VND; the hired employees are female workers; the pectoralis salting technology requires 3 male workers in 1 day, each labourday costing 250,000VND.	HH members, hired female workers for cleaning and drying, hired male workers for salting. Traders / wholesalers	Family labour: 2 supervisors (1 day/person) to monitor the cleaning of fresh fishes. [cost for famialy labor is 250.000 VND/day if payment is made actually]
Step 3 - Trading				
50% wholesale and 50% retail	Wholesale price (Ca Mau): VND 200,000/kg	Chinese packing houses operated by Thai nominees Containers - 80 tons (40 feet long)	BDS Providers: At trading stage, the DoST (Science and Technology helps with GI registers); Trade promotion is provided by DoIT (for domestic market)	BDS providers to promote exporting: Not Available

3.4.4.5 Constraints of the Cluster and the Value Chain

From the value chain analysis of the product and SWOT analysis of the cluster, a number of bottlenecks were identified.

i. Lack of BDS due to the fact that this indigenous economic activity is target mostly to domestic consumers who has not been traditionally sensitive to quality in particular. However, as the dried snakeskin gourami is being catered as delicacy in upper end restaurant with different cooking style and being exported to countries with sizable ethnic Vietnamese population, it started being an issue
ii. Lack of technological upgradation of drying function across all category of fishes and seafood is a concern to respond to the potential risks of health hazard;
iii. Linkages between enterprises and producer households in the shrimp industry have also been firmly established, for farmers cannot find a market for their products other than to supply inputs to enterprises, and enterprises usually have collector agencies in each production area; and at the same time, enterprises have their own investments in these production areas. Therefore, the possibility of success in creating impacts on small and very small enterprises by transferring some value addition is also another constraint.

3.4.4.6 Recommended Strategies for the Cluster Value Chain

The main priority activities or strategies to strengthen the cluster involve the following:

i. Cluster development in terms of offering similar benefits and support to cluster member like in other clusters in Vietnam;
ii. VC up gradation with technology adoption in drying effectively and hygienically remains another priority;
iii. Support to form production cooperatives to attain uniform quality of entire scale of production including household and small and medium scale enterprises.

3.5 Overall Recommendation for the Selected 19 Clusters

There is no single strategy set which may address the needs of all the SMEs across the provinces along the SEC, selected clusters and others. The product value chains of the SME clusters are indicative and prototypical of the needs of the SMEs in each province. It will also be presumptive to apply one strategy applicable in one SME sector for the development in another group of SMEs. For example, in case of agricultural produce and sea food items, quality and hygiene may be pressing issues, because there is an increasing awareness and demand for adhering to food processing quality standards. These issues need to be addressed in a more practical and implementable manner. Some overarching suggestions are mentioned below:

Support to Strengthening Clusters: Across the clusters along the SEC, there is a need for developing strong cluster leadership and functioning to raise awareness among the cluster members about producing and marketing in a united front to attract support from the respective governments and also from development partners.

Formation of Export Consortia and Export Market Development: After strengthening the cluster management the next step is to support selected cluster leadership in formation of export consortia and develop the export market for the products developed in the clusters. This also helps to follow particular quality programs for a particular cluster for the quality upgrade of all the products that are produced in the cluster.

Structured Learning Visits: The southern economic corridor of the Mekong sub-region has similar clusters in the provinces and learning visits from one country to another can significantly improve process upgrade. Also, the learning visits can promote mutual trade discussion in case one cluster is in need of raw input from another while input from the domestic market may turn out to be costly and time consuming or simply not available.

Development of Interactive Database: Inclusion of the clusters and SMEs in the SEC in an interactive database would facilitate to connect with prospective buyers and investors who can assist these enterprises with superior technology and help them accessing new export markets. Inclusion in the SEC database will also support the SMEs to interact with other clusters and prepare themselves for large export orders.

Introduction of E-commerce: A selected number of cluster members and SMEs were identified who showed greater strength and capacity to compete in international markets. To support these entrepreneurs further in their business expansion, the prospective candidates should be screened and linked with an online marketplace provider where they can register themselves and receive trainings on how to successfully trade with overseas buyers.

Support Participation in Trade Fairs to Promote Cross-border Trade in the SEC: One of the major roles of these interventions is to promote cross border trade among the GMS countries. From the study, it was understood that some clusters in one country might be in a serious need of sourcing raw materials and that they simply did not have ideas that those inputs could be easily procured from a neighbouring cross-border provinces. These trade events will facilitate those enterprises further in engaging themselves in trade and partnership negotiation with other enterprises across the borders.

Chapter D

Appendix & Bibliography

Appendix I: Numbers of Enterprises

Cambodia

Table T.1 - Types of Enterprises in Cambodia

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Large Industry	309	368	320	336	372	413	490	481	564	542	556
Small, Medium Industry	25,049	25,601	27,155	26,940	25,985	28,131	29,297	31,149	32,619	32,800	35,560
Total	25,358	25,969	27,475	27,276	26,357	28,544	29,787	31,630	33,183	33,342	36,116
Growth Rate		2.41%	5.80%	-0.72%	-3.37%	8.30%	4.35%	6.19%	4.91%	0.48%	8.32%

Source: Ministry of Industry, Mining, and Energy (MIME), 2009

Myanmar

Table T.2 - Types of Enterprises in Myanmar

Subsector	Large	Small	Medium	Total	Share (%)
Food & Beverages	1778	22282	3683	25965	64.51%
Clothing & Wearing Apparel	247	1494	373	1867	4.64%
Construction materials	478	2388	560	2948	7.32%
Personal goods	253	495	273	768	1.91%
Household goods	105	122	97	219	0.54%
Printing & publishing	18	249	90	339	0.84%
Industrial raw material	110	668	256	924	2.30%
Mineral & petroleum	196	1141	389	1530	3.80%
Agriculture & equipment	8	35	21	56	0.14%
Machinery & equipment	12	195	56	251	0.62%
Transport vehicles	91	70	17	87	0.22%
Electrical goods	36	16	12	28	0.07%
Miscellaneous	151	4694	576	5270	13.09%
Total	3483	33849	6403	40252	100.00%

Source: Myanmar Ministry of Industry, Directorate of Industrial Supervision and Inspection as cited on page number 5 of Report by UNIDO (Project number SAP 120523, Project name - " Fostering Pro-poor and inclusive SME development in Myanmar"; March 2013)

Thailand

Table T.2 - Types of Enterprises in Thailand

	2012			2013		
	Number of Enterprises	**Ratio to Total Num. of Enterprises**	**Ratio to SMEs**	**Number of Enterprises**	**Ratio to Total Num. of Enterprises**	**Ratio to SMEs**
1 - Small and Medium Enterprises (SMEs)	27,30,591	97.20%	100.00%	27,63,997	97.16%	100.00%
1a - Small Enterprises (SEs)	27,17,649	96.74%	99.53%	27,50,750	96.70%	99.52%
1b - Medium Enterprises (MEs)	12942	0.46%	0.47%	13,247	0.47%	0.48%
2 - Larger Enterprises (LEs)	7127	0.25%	-	7,349	0.26%	-
3 - NA	71396	2.54%	-	73,411	2.58%	-
Total Number of Enterprises (1+2+3)	28,09,114	100.00%	-	28,44,757	100.00%	-

Source: Office of Small and Medium Enterprises Promotion (OSMEP) publications

From the Office of Small and Medium Enterprises Promotion (OSMEP), the number of SMEs in the provinces of Thailand covered under this study are as follows:

Table T.3 - Distribution of Enterprises in the Provinces of the Study

Province	SE	ME	SMEs (Ratio to Country SMEs)	LE	NA	Total	Ratio of Province-Enterprises to Total Country Enterprises
Prachinburi	15,027	89	15,116 (0.55%)	70	269	15,455	0.54%
Sakeo	20,358	24	20,382 (0.74%)	16	530	20,928	0.74%
Ratchaburi	26,998	109	27,107 (0.98%)	41	437	27,585	0.97%
Kanchnab uri	29,140	56	29,196 (1.06%)	20	854	30,070	1.06%
Trat	8,093	28	8,121 (0.29%)	6	179	8,306	0.29%
Chantaburi	14,182	44	14,226 (0.51%)	18	470	14,714	0.52%
Total	2,750,750	13,247	2,763,997 (100%)	7,349	73,411	2,844,757	100.00%

Source: Office of Small and Medium Enterprises Promotion (OSMEP) - 2013 data

Vietnam

Table T.4 - Types of Enterprises in Vietnam

	SME				LSE	Total
Establishments	**Micro**	**Small**	**Medium**	**Sub-total**		
Number of business establishments (1,000)	2660	46.7	11	2718	2.5	2720
Percentage of all establishments (%)	97.8	1.7	0.4	99.9	0.09	100
Employment						
Employment (1,000)	4375	887	1221	6483	1909	8392
Percentage of persons engaged (%)	52.1	10.5	14.5	77.3	22.7	100
Average Size of Establishments						
Persons engaged per establishment	1.6	19	112	2.4	773	3

Source: GSO Establishments Census, 2002, (classified as per tentative size groups)

Appendix II: Definition of SMEs

Vietnam

As per Decree 56/2009/ND-CP, the following table was presented in the "Action Research on Vietnam SME Cluster Development and Value Chain Integration A Case Study of Tea and Ceramics Clusters", Mekong Institute, ((Phan Manh Tuan, 2013)

Sector	Micro enterprises	Small enterprises		Medium enterprises	
	Number of Labourers	Total Capital (VND)	Number of Labourers	Total Capital (VND)	Number of Labourers
Agriculture, forestry, fishery	Under 10	Under 20 billion	10 to 200	20-100 billion	200 – 300
Industry and Construction	Under 10	Under 20 billion	10 to 200	20 to 100 billion	200 – 300
Trade and Services	Under 10	Under 20 billion	10 to 50	10 to 50 billion	50 – 100

Note: 1 USD = 21,000 VND

Source: Following the Decree 56/2009/ND-CP, the information was summarised and the following table was presented in the "Action Research on Vietnam SME Cluster Development and Value Chain Integration A Case Study of Tea and Ceramics Clusters", Mekong Institute, (Phan Manh Tuan, 2013)

Cambodia

	Numbers of Employee	Financial Assets excluding Land (USD)
Micro	< 10	< 50,000
Small	11 – 50	50,000 - 250,000
Medium	51 – 100	250,000 - 500,000
Large	> 100	> 500,000

Source: ADB and Royal Govt of Cambodia's Sub-committee on SME Secretariat, 2005 and 2007

Besides the above classification, the National Accounting Council[6] of Cambodia defines an SME as any establishment which carries on business and is not subject to the obligation of preparing financial statements in accordance with Cambodian Accounting Standards, and meets any two of the following three criteria:

1. Total maximum workers-employees from 11 to 100.
2. Annual turnover is from KHR 100 million to less than KHR 250 million.
3. Total assets are from KHR 100 million to KHR 250 million

Thailand

Small and Medium Enterprises (SMEs) in Thailand have been defined under the SME Master plans. Chapter 2 (two) of the SME Master plan (2012-2016) gives the bases for classifying SMEs, the following table is compiled for easy reference.

Type	Small		Medium	
	No. of Employee	**Fixed Asset- Excluding Land (THB Mil.)**	**No. of Employee**	**Fixed Asset- Excluding Land (THB Mil.)**
Manufacturing	50 or less	≤ 50	51 - 200	>50 to 200
Services	50 or less	≤ 50	51 - 200	>50 to 200
Wholesale	50 or less	≤ 50	26 - 50	>50 to 100
Retail	50 or less	≤ 30	16 - 30	>30 to 60

Source: http://www.smebank.co.th/en/definitions.php, and Chapter 2 SME Promotion Plan (http://goo.gl/rm6BTy) at OSMEP

Myanmar

Two separate laws in Myanmar define SMEs, based on four (4) criteria - power used, number of workers, capital outlay, and production value. The following table summarises the classification.

Table V.1	Cottage Industries Promotion Law, 1991	Private Industrial Enterprises Law, 1990	
Criteria	**Micro**	**Small**	**Medium**
Power (HP) used	< 3 H.P.	3 - 25 (H.P.)	26 - 50 (H.P.)
Num of Workers	< 10	10 – 50	51 - 100
Capital Outlay (Kyat Million)		≤ 1 million kyat	1 - 5 million kyat
Production Value per year (million)		≤ 2.5	2.5 - 10

Source: Ministry of Industry

[6] *SMEs need to comply with Cambodian International Financial Reporting Standards (CIFRSs) and Cambodian International Financial Reporting Standards for Small and Medium-sized Entities (CIFRSs for SMEs) in accordance with the Articles 3 and 4 of 'Law on Corporate Accounts, their Audit and the Accounting Profession'.*

Appendix III: List of People Interviewed

Cambodia		
Svay Rieng Province		
1	Mr. Long Sokhum	Director of Department of Industry and Handicraft
2	Ms. Ngov Sopha	Vice Director
3	Mr. Tom Thoeun	Chief of Office of Industry and Handicraft
4	Mr. Ob Nan	Vice Director Department of Commerce
5	Mr. Ou Sokhoeun	Vice Director Department of Vocational Training
6	Mr. Sok Burin	SME
7	Mr. Keo Tola	SME
8	Mr. Lo Savann,	SME (clay)
9	Mr. Chan Sat,	Rice Miller
10	Mr. Sok Vutha	Prasac Microfinance
11	Ms. Chea Sokha	Rice Miller
Kampot Province		
12	Mr. Khan Chanvuthy	Chief Officer Department of Industry and Handicraft
13	Mr. Im Kim Sophorn	Chief Officer Department of Industry and Handicraft
14	Mr. Chuon Rin	Chief Officer Department of Labour and Vocational Training
15	Mr. Chan Sopheak	SME
16	Mr. Vuthy Ren	SME (Mango)
17	Mr. Pheng Siphorn	SME (Mango)
18	Mr. Sim Nin	Microfinance
19	Mr. Chhon Chhang	Vice President Chamber of Commerce
20	Mr. Sam Visal	Chamber of Commerce
21	Mr. Houn Sovanny	Chamber of Commerce
22	Mr. Ung Sophan	Chamber of Commerce
Preah Sihanouk Province		
23	Mr. Phrom Sokcheavanna	Director Department of Commerce
24	Ms. Seng Samnang	Chief Office, Department of Commerce
25	Ms. Ton Vanny	Vice Director, Department of Labour and Vacational Training
26	Mr. Phorn Ratanak	Department of Industry and Hadicraft
27	Mr. Vann Sokheng	President FASMEC
28	Mr. Preap Sopheap	Chamber of Commerce
29	Mr. Sok Proekpreang	Chamber of Commerce
30	Mr. Chin Samnang	Dry Shrimp Production
31	Mr. Chhun Sarom	Bamboo Production
32	Ms. Vong Chanratana	President ANP Drinking water
33	Mr. Ros Samnang	FBP Drinking Water
34	Mr. Chea Thu	Steam Fish
35	Mr. Ngy Channarin	steam fish
36	Mr. Va Sokhan	Seller Bestlife
Koh Kong Province		
37	Mr. Iean Savan	Vice Director Department of Industry and Handicraft
38	Mr. Sang Veasna	Chief Office Department of Industry and Handicraft
39	Mr. Tieng Saret	Chief Office, Department of Labour
40	Mr. Leng Bunthea	Vice Chief Office, Department of Commerce
41	Mr. Koe Kimya	Vince Director Chamber of Commerce
42	Mr. Pen Sokha	Advicer Chamber of Commerce
43	Ms. Soh Sopheap	Hengkea Import and Export
44	Mr. Chi Lyhieng	Manager Koh Kong Fish Sauce
45	Ms. Sambath Romneath	Reaksmey Phkaypich Drinking Water
46	Mr. Mer Sarat	Ice Production
47	Mr. Sire Phorn	SME
48	Mr. Sorn Kimtong	Hatha Kasikor Microfinance
49	Mr. Pen Chansavoen	ACLEDA Bank
50	Mr. Rin Sokha	Prasac MFI
Kampong Chhnang		
51	Mr. Tith Nan	Director Department of Industry and Handicraft
52	Mr. Sar Piseth	Cheif Officer
53	Mr. Prak Vutha	Chief Officer Department of Commerce
54	Mr. Khat Samboeun	Vice Chief Department of Commerce
55	Mr. Tep Sambath	Prasac MFI
56	Ms. Mang Salon	Vice President Bamboo Association

57	Ms. Lon Sokchoen	Bamboo Association
58	Ms. Yung Sokha	President Pottery Association
59	Mr. Sam Samnang	Pottery Association
Pursat		
60	Mr. Sen Saen	Vice Director, Department of Commerce
61	Mr. Um Norm	Chief Office, Department of Industry and Handicraft
62	Mr. Khoen Chanseiha	Department of Industry and Handicraft
63	Ms. Hun Sophal	Vice Director, Department of Culture
64	Ms. Kim Channary	Chamber of Commerce
65	Ms. Su Khorn	SME, Drinking water
66	Mr. Ik Sale	Drinking water
67	Mr. Chea Bola	Rice Miller
68	Mr. Oeng Veasna	Rice Miller
69	Mr. Svay Pok	SME stone carving
70	Mr. San Pov	SME stone carving
71	Ms. Sao Sambath	SME wood carving
Battambang		
72	Ms. Ho Dany	Vice Director, Department of Industry and Handicraft
73	Mr. Tim Bomrong	Vice Chief Office Department of Industry
74	Mr. Yem Samart	President Drinking water
75	Mr. Iea Bunhur	Presidet Intri Mean Fish Sauce
76	Mr. Prak Chanthoeun	Vice Director Phnom Meas Association
77	Mr. Ly Hot	SMS Bread
78	Mr. Tieng Rasive	Rice Miller
79	Mr. Kov Chinbung	Meatball
80	Mr. Chan Senghong	Grape Wine SME
81	Mr. Phal Sovann	Microfinance LOLC
82	Mr. Thoen Thany	SME
83	Mr. Kim Iem	SME cake
84	Mr. Oun Sokun	Balm Oil SME
85	Mr. Tit Vina	Golden Company
86	Ms. Ly Leangly	Chamber of Commerce
87	Ms. Doen Sokvon	Chamber of Commerce
89	Ms. Vong Sokyem	President Fish sauce
90	Mr. To Chanratana	Sell AMK MFI
91	Mr. Chiv Kokchak	President SME noodle
92	Mr. Pheach Seiha	Vice President SME noodle
93	Mr. Rol Manmuy	President Agriplanet
94	Mr. Soe Sophaly	President SME noodle
Banteay Meanchey Province		
95	Mr. Thong Thina	Director, Department of Commerce
96	Mr. Dok Saroeung	Department of Commerce
97	Me. Heng Sopheang	Vice Director, Department of Industry and Handicraft
98	Mr. Sok sina	Vice Chief , Department of Industry and Handicraft
99	Mr. Chun Narin	Officer, Department of Labur
100	Mr. Kim Sopheap	Chief Office, Department of Culture
101	Mr. Tim Sina	Chamber of Commerce
102	Mr. Chhun Sophan	Chamber of Commerce
103	Mr. Sok Sereimanot	Sathabana Bank
104	Ms. Soy Khoun	SME
105	Mr. Lon Sina	Rice Miller
106	Ms. Ret Chanrit	Weaver
107	Ms. Lon Samphors	Wever
108	Ms. Dam Sreymom	Silk worm producer
109	Mr. Yin Sarit	SME stone carving

Myanmar		
Dawei		
110	Mr. Ye Htut Niang	President, TCCI
111	Mr. Kyaw Kyaw Oo	Secretary, TCCI
112	Mr. Bar Swam	Secretary, TCCI
113	Mr. Min Min Aung	Secretary, TCCI
114	Mr. Htein Win	Dawei SME's Association
115	Mr. Shein Own	TCCI
116	Mr. Nyi Nyi Niang	TCCI
117	Mr. Myin Tsoe	TCCI
118	U win	TCCI
119	Aung Than Oo	Dawei Popular
120	Aung Soe Oo	WHA
121	U Soe Moe Kym	O.O.C.O.D.S.B
122	U Aung Kyi Soe	Joint Secretary, UMRCCI
123	Daw Khin NyoNyo	Secretary, DDCCI
124	U Win Soe	Chairman, DDCCI
125	Daw Aye Aye Than	Manager,GTB Br
126	Daw Phyu Maraling	Deputy Manager, KBI Bank
127	Daw Thidar Le	Assistant Manager, AYA Bank
128	Daw May Thet	SBA, AYA Bank
129	U Loyaw Soe Yi	Second Officer, Commerce
130	U Kyaw Kyaw Lwin	Deputy Director, DISI
131	Sai Heinn Htet Oo	Secretary, DDSMEsA
132	W Nyint Thein	Secretary, DDSMEsA
133	Zaw Thura	Founder and Chairman, DRA
134	Tint Lwin	Hinthar Media
135	U Kyaw Kyaw Thet	Fishing Oxyner
136	U Yu Seai	TCCI
137	Li Myint Shein	Aung Hein Bo Win CO.,LTD
138	U Than Htut	Chairman, TRMA
139	U Aung Myo	Chair man of rubber association
140	U Ko Ko Gyi	Trade
141	U Zaw Myo Aung	Deputy Director, DISI
142	Thura Yu Sein	Dawei United CO.,LTD
143	Ko Zaw	Tanintharyi Journal
144	Dr. Yu Sein	Chairman, Tanintharyi Region
145	Aye Sabal Phyu	Branch In-charge, AYA Bank
146	U Niang Win Zaw	Executive Director, Dawei Development Public co.,ltd
147	Mr. Amnaj Chomphunooch	Project Engineer, Italian-Thai Development Public Company Limited
148	Ms. Thidar Linn	Deputy Branch In-charge, AYA Bank
149	Mr. Suphap Satthatham	Project Engineer, Italian-Thai Development Public Company Limited
150	Aung Zaw Hein	Executive Director, Dawei Development Public co.,ltd

Thailand		
Kanchanaburi		
151	Mr.Sathien Machareonrungreung	Executive Managing Director, Machareonrungreung
152	Ms. Nongnuch Inthachot	Staff, Chamber of commerce
153	Mr. Worawis Meknopparat	Director, Department of commerce
154	Mr. Chetpong Narktrakulphant	Federation of Thai Industries
155	Mr.Panya Vudthiprajak	Vice Chairman and Secretary General, Chamber of commerce
156	Mr. Chalermcaat Chun-in	Chairman, Federation of Thai Industries
157	Ms. Jintana Sasum-arng	Managing Director, Siam Banana Company
158	Mr. Dumrong	CDD
159	Mr.Thanit Gerdpongthong	Assistant Manager, SME Bank
160	Ms.Yupin Gwangphrai	Industrial Technical Officer, Department of commerce
161	Ms.Wiraporn Prasertsook	Fresh Food Trade Association
162	Ms.Tuangporn	Food Association
163	Ms.Rossawan Jongmaitreeporn	Chairman, Hart OTOP
164	Mr.Thatchasit	Tourist Association
165	Ms.La-eiad	Fish Cage Farming
166	Mr.Sa-nguansak Tangsakol	STK Orchid Nursery
167	Ms. Anongnart Chuerchan-ad	Customer Development Officer, BAAC
168	Ms. Aree Moolsub	Head of Industry Office

169	Mr. Phairot Matthayom	Senior Manager, SME Bank
170	Mr. Chalermchai Chatarat	Director, BAAC
171	Mr. Teerapat Sumongkol	BAAC
172	Mr. Tanit Koedprakob	Manager, SME Bank
173	Mr. Tachasit Silapapisan	General Manager, DSR travel
Ratchaburi		
174	Mrs. Ubonrat Thongleur	Trade Officer, Department of Commerce
175	Mrs. Manassanan Chottisiriwat	Assistant Manager, Government Savings Bank
176	Mrs. Jiranan Buasumlee	Trade Officer, Department of Internal Trade
177	Ms. Neunghatai Thammapitak	Plan and Policy Analyst, Department of industry
178	Mr. Waiyawut Sooksaman	Committee Member, Chamber of Commerce
179	Mr. Sophon Gatanyatapong	Senior Manager, SME Bank
180	Mr.Teeraparb Suthvanich	Federation of Trade Industries
181	Mr. Phisai	Committee Member, Chamber of Commerce
182	Mr. Udom Jaiyen	Chairman, Federation of Trade Industries
183	Mr. Pornchai Laewsuramart	Credit Management, BAAC
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185	Mr. Woranob	Chairman, OTOP
186	Mr. Aekkasit	Proprietor, Im-Pani Commer Band
187	Mrs. Saipim	President, CDD
188	Ms. Nethchanok Jai-eiam	Community Development Technical Officer, CDD
189	Mr. Komol Tantiworanukul	Consultant, Chamber of Commerce
190	Mrs. Ariya Suthvanich	Sarong
191	Mr. Panpong Kanta	Assistant Director, BAAC
192	Mr. Jirawat Inthara	Vice President, Government Savings bank
193	Mr. Narongsak Chuensuchon	Managing Director, NC Coconut co. Ltd.
194	Mr. Noppol Phuveam	Managing Director, Damnoen Food co.,ltd.
195	Mr.Chaivooth Suksmith	Neotech food Co.,Ltd.
Prachinburi		
196	Mr. Narong Soonpan	Public Health Technical Officer, Abhaibhubej hospital
197	Mr. Somphoch Chidtansakul	Senior Manager, SME Bank
198	Mrs. Malee Pipattanaworakul	Social Development Officer, Ministry of Social Development and Human
199	Mr. Anan Soonpan	Vice President, Association of University Presidents of Thailand
200	Mr. Surin Omawattana	Community Development Technical Officer, CDD
201	Ms. Karnchanida Singhaburi	Industrial Technical Officer, Department of industry
202	Mr.Ar-rom Suwanrat	Deputy Secretary, FTI
203	Mr. Chanchai Jindasathaporn	Vice President, FTI
204	Mr. Kriangyos Tongchoung	Vice President, CCI
205	Mr. Pramarn	Community enterprise
206	Ms. Srinuan	OTOP
207	Ms. Kanpida Nop-a-mornpitak	Trade Officer, Department of commerce
208	Ms. Soonthree Warangsri	Trade Officer, Department of commerce
209	Mrs. Kanittha Winitchayakul	Manager, CCI
210	Ms. Aunchalee Boongerd	SME Network Marketing Development Specialist, Kbank
211	Mr. Artidh Kansom	Deputy Secretary, CCI
212	Dr. Somporn Viriyanupharbphong	President, Department of Commerce
213	Mr. Siwapot Koowijitsuwan	Chairman, Nakham Community Enterprise
214	Mr. Kanit Gaisorn	Plan and Policy Analyst, Department of Industry
215	Ms. Kammarat Rattanatam	Head of Industrial Promotion Section, Department of Industry
216	Mr. Siwaphot Khuwijitsuwan	Director, Organic Agriculture Community Enterprise
Sakaeo		
217	Mr. Prasit Somsri	Internal trade
218	Ms. Rattana Rakphuakglang	AEC Officer, Department of commerce
219	Mrs. Supattra Wongkomet	Chairman, Sarn-suay & Dekupa Group
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221	Ms. Kitwarak Lertsakultam	Industrial Technical Officer, Department of industry
222	Ms. Sa-ong-it Nonpayaom	Industrial Technical Officer, Department of industry
223	Mr. Jeerasak	Technical Officer, CDD
224	Mr. Sanchai Sasoom	Technical Officer, CDD
225	Ms. Aoytip Jumjod	Chairman, Herb fragrance Community Enterprise
226	Mr. Somnuk Maneepinit	Head of Promotion, CDD
227	Ms. Panida Laopatprasit	Director of Sector Activity, Chamber of Commerce
228	Ms. Aunchalee Boongerd	Marketing Manager, Kasikornbank
229	Ms. Bupachart Paoyothin	Proprietor, Thammachart Handcraft Center

230	Mr. Samart Nimngen	Member of the Board, THAITHANKFUL
Chanthaburi		
231	Ms. Jutarat Yodpot	Trade Officer, Office of Commercial Affairs
232	Mr. Surasak Janchum	Head of Policy and Planning Division, Department of industry
233	Ms. Wattana Plaphol	Chairman, Community enterprise
234	Ms. Jutaporn Petcharin	Technical Officer, CDD
235	Mr. Nattakit Chamumee	Committee Member, CCI
236	Mr. Warat Sinprasittikul	Chairman, FTI
237	Mr. Seubsakul Khuntap	Chairman, Khuntep clinic, thai traditional medicine
238	Ms. Ratchanoo Ratchawee	Technical Officer, Department of industry
239	Mr. Aekkachai Sitthichok	Head of Agricultural Promotion Group, Office of Agricultural
240	Mr. Tanu Ananyaporn	Head of Promotion Group, CDD
241	Dr. Radthawit Tangkiatphachara	Thai-Camodia Border Trade & Tourism Association of Chanthaburi
242	Ms. Sornchanok Thongmunkong	Director, Industry Office
243	Mr.Songkran Seubsiripoonchai	Manager, Kubota
244	Mr. Jomsak Phutirat	Chairman, Chamber of Commerce
245	Mr. Ni-anuwa Sulaimarn	Director, Office of Commercial Affairs
Trat		
246	Mr. Uthai Tanchai	President, CC
247	Mr.Sutad Vetchoti	Vice –President, CC
248	Mr.Thitikorn Lohakup	Vice-President, CC
249	Ms. Aphisa Wongsakorn	Vice-President, CC
250	Mr. Narong Pateetin	Member of the Board, CC
251	Mr. Somporn Gowithaniphong	Member of the Board, CC
252	Mr. Leuked Yisarnkhun	Treasurer, CC
253	Mr. Jarun Yuttasak	Registrar, CC
254	Mr. Supat Koomwongdee	Receptionist, CC
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261	Mr. Phichai Visuttipat	Member of the Board, CC
262	Mr. Thanut Sowanutpricha	Member of the Board, CC
263	MR. Somboon Boonto	Member of the Board, CC
264	Ms. Suporn Phurahong	Representative, ATSMEs Trat
265	Mr. Jathupat Rerksahakul	Representative, ATSMEs Trat
266	Mr. Saeree Phoothipat	Representative, ATSMEs Trat
267	Mr.Damrong Waroontippayakorn	Representative, ATSMEs Trat
268	Mr. Thani Wannapat	Manager, SME Service provider
269	Ms. Thatsanee Sawannarat	Plan and Policy Analyst, Departmemt of industry
270	Mr. Phipat Rerksahakul	President, FTI
271	Mr. Prasit Narkdee	President, Department of commerce
272	Mrs. Parichart Sri-In	Internal trade
273	Ms. Atthaya Thanetniratsai	CDD
274	Mr. Thanee Wannapat	Manager, SME Service provider
275	Mr. Detnarit Yothapirom	Manager, SME Bank
276	Mr. Natthaphon Soonhaoy	Representative, Business Development
277	Mr. Somnuk A-nan	Representative, Agriculture department
278	Mr. Nikom Chawthalang	Chairman, Commerce club
279	Mr. Khemmapat Tungburasuwan	Vice-president, FTI
280	Mr. Phoothorn Daungphob	Mass media
Vietnam		
Ca Mau		
280	Mr. Nguyen Viet Trung	Head, Trade Management Division, Ca Mau Dept. of Industry and Trade
281	Mr. Ngo Van Cuong	Officer, Export Import Division, Ca Mau Dept. of Industry and Trade
282	Mr. Le Son	Officer, Industrial Management Division, Ca Mau Dept. of Industry and Trade
283	Mr. Ta ThanhHieu	Officer, Industrial Promotion and Trade Promotion Division, Ca Mau Dept. of
284	Mr. Nguyen Le	Secretary General, Director's Office, Ca Mau Business Association
285	Mr. Nguyen QuocPhuc	Officer, Ca Mau Economic Management Office
286	Mr. Pham Van Hung	Officer, Food Safety Hygiene and Inspection Services
287	Mr. Du Minh Senh	Deputy Director, Bank for Industry and Trade – Ca Mau Branch
288	Mr. Tran Van Nhung	Deputy Head of SME Banking, Bank for Investment and Development – Ca Mau

289	Mr. Huynh Chi Thong	Owner / Director, PhongPhu Shrimp Private Business
290	Mr. Le Minh Son	Owner / Director, ThanhDat Private Business (Dried Shrimp)
Can Tho		
291	Ms. Nguyen ThiNinhThuan	Head, Import – Export Management Division, Can Tho Dept. of Industry and
292	Mr. Vo Quoc Hung	Deputy Head, Industrial Management Division,
293	Ms. Phan Mai Hue	Officer, Can ThoBusiness Association
294	Mr. Vo Thi Kim Cuong	Head, Legal Office, Vietnam Chamber of Commerce and Industry
295	Mr. Tran XuanPhu	Deputy Director, Vietnam Chamber of Commerce and Industry, Can Tho
296	Mr. Nguyen ToanQuoc	Officer, Vietnam Chamber of Commerce and Industry, Can Tho Branch
297	Ms. Le ThiThanhHien	Deputy Head of Inspection and Supervision Department, State Bank of Vietnam
298	Mr. Nguyen Minh TrungDuc	Deputy Head of Investment Department, GENTRACO Corporation
299	Ms. Ho Thi Kim Loan	Business Owner of ThangLoi 2 Private Business – Rice Miller for Export
300	Ms. LuuThiLan	Vice-president of GENTRACO Corporation
301	Mr. Nguyen PhucLoc	Deputy Director of Southern Fishery Industries Company Limited
KeinGiang		
302	Ms. Le ThiNhut	Deputy Director, Kien Giang Dept. of Industry and Trade
303	Mr. Cao Phuoc Son	Deputy Head, Import – Export Management Division | DOIT
304	Mr. Huynh Minh Thiet	Deputy Head, Trade Management Division
305	Ms. Le ThiThuy Tran	Officer, Industrial Management Division | DOIT
306	Mr. Phan Dinh Manh	Officer, Finance and Planning Division | DOIT
307	Mr. Nguyen GiaiPhong	Director, Kien Giang Trade – Investment – Tourism Promotion Center
308	Mr. Tran ThanhKiet	Head, Trade Promotion and SME Support Division
309	Mr. Bui Van Ho	Vice-Chairman, KienGiangYoung Entrepreneur Association
310	Mr. Dang Thanh Hoa	Head of SME Banking, Bank for Agriculture and Rural Development (VBARD) –
311	Mr. Ma Thanh Tan	Deputy Director, Bank for Industry and Trade – KienGiangBranch
312	Mr. Doan Hung Dung	Deputy Director, KienGiang Import – Export Company
313	Mr. Bui Quoc Thai	Deputy Director, Kien Giang Tourism Company
314	Mr. Vo Van Phung	Head of Administrative Department, Kien Giang Brick and Tile Company
315	Mr. Nguyen Duc Hung	Deputy Director of KTC Canned Foodstuff Manufactory (KTCFOOD)
316	Mr. Nguyen Ba Thuan	Director of Shrimp Farm – Trung Son Seafood Joint Stock Company
Tay Ninh		
317	Mr. Le Thanh Cong	Director, Tay Ninh Department of Industry and Trade (DOIT)
318	Mr. Le Ngoc Thach	Manager, Trade Promotion Center | DOIT
319	Ms. Bui ThiThuy Hang	Head, Planning Division | DOIT
320	Ms. Le Kim Phuong	Head, Industrial Management Division | DOIT
321	Ms. Le Thi My Dung	Officer, Trade Management Division
322	Mr. Le Khanh Trinh	Officer, Trade Promotion Center
323	Ms. Pham Thi Bich Van	Office Administrator, Provincial Business Association
324	Mr. Cao Tan Trinh	Deputy Director, Bank for Agriculture and Rural Development (VBARD) – Tay
325	Mr. Tong Duc Huong	Head of SME Banking Department , VBARD Tay Ninh Branch
326	Ms. Phan Huynh Ngoc Vinh	Head of SME Banking, Bank for Industry and Commerce – TayNinh Branch
327	Ms. Bui Thi Kim Hoa	Deputy Director – Marketing, Tam Lan Tea 1-Member Co., Limited
338	Mr. Nguyen QuocTrung	Deputy Director, Nam Phong Wine – Private Business
339	Mr. Hoang Van Thac	Head of Planning and Sales Department, Yen Hung Cashew 1-Member Co., Ltd
340	Mr. Le ManhChuong	Head of Planning and Sales Department, Lien Anh Rubber Company Limited
341	Ms. Trinh Ngoc Lan	Director, HoaLan Foods Company Ltd (Cashew)
342	Ms. Pham Thi Thuy Linh	Deputy Director, Dinh Khue Tapioca Starch - Private Business
343	Ms. PhanThiXuanTruc	Sales Staff, Hung Duy Tapioca Starch Company Limited
344	Mr. Pham Dinh Thang	Director General, ATM Advertisement – Television – Communication Company
345	Mr. Le CanhTinh	Deputy Director, Hoa Viet Tobacco Joint Stock Company – TayNinh Branch
346	Mr. Nguyen Van Bay	Head of Internal Control, Safe and Healthy Vegetable Cooperative
347	Mr. Dang Duy Phuong	Cassava Farmer, PhuocVinh Commune, ChauThanh District, TayNinh
348	Mr. Nguyen Van Tung	Cassava Farmer, PhuocVinh Commune, ChauThanh District, TayNinh
349	Mr. Duong Van Tuan	Cassava Farmer, PhuocVinh Commune, ChauThanh District, TayNinh
350	Ms. Sam NguonNhat	Director, of Sam Nhut Tapioca Starch, HoaHiep Commune, Tan Bien District,

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The Greater Mekong Sub-Region (GMS)

The Greater Mekong Sub-Region (GMS) comprises five Southeast Asian countries and two provinces of China sharing the Mekong River, namely Cambodia, Lao PDR, Myanmar, Thailand, Vietnam and Yunnan Province, Guangxi Autonomous Region of the People's Republic of China

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The Mekong Institute (MI) is a **GMS** Inter - Governmental Organization (IGO) working closely with the governments of six countries to promote regional development, cooperation and integration by offering standard and on-demand capability development programmes across three cutting themes of agricultural development and commercialization, trade and investment facilitation, and innovation and technological connectivity.

MEKONG INSTITUTE

Mekong Institute (MI)
123 Mittraphap Road, Mueang District,
Khon Kaen, 40002, Thailand
Tel: (+66) 43 202411 – 2
Fax: (+66) 43 343 131
E-mail: information@mekonginstitute.org
Website: www.mekonginstitute.org