

Competitive Study - Cluster Approach



**Study Highlights:
Competitiveness of
Thailand's Black Tiger
Shrimp
Industry**

Institute for Management Education for Thailand Foundation



Agenda

► Objectives

Why Shrimp?

Shrimp Cluster

Diamond Model

Danger Signs

Critical Issues

Strategic
Recommendation

- Broodstock
Domestication
- Improve
Farming Mgt
- Chemical
Residue Control
- Others

1. Competitiveness Framework

2. Objectives & Deliverables

3. Why Black Tiger Shrimp?

4. Cluster Overview

5. Diamond Model

6. Danger Signs & Critical Issues

7. Strategic Recommendations



Competitiveness Framework

▶ Framework & Objectives

Why Shrimp?

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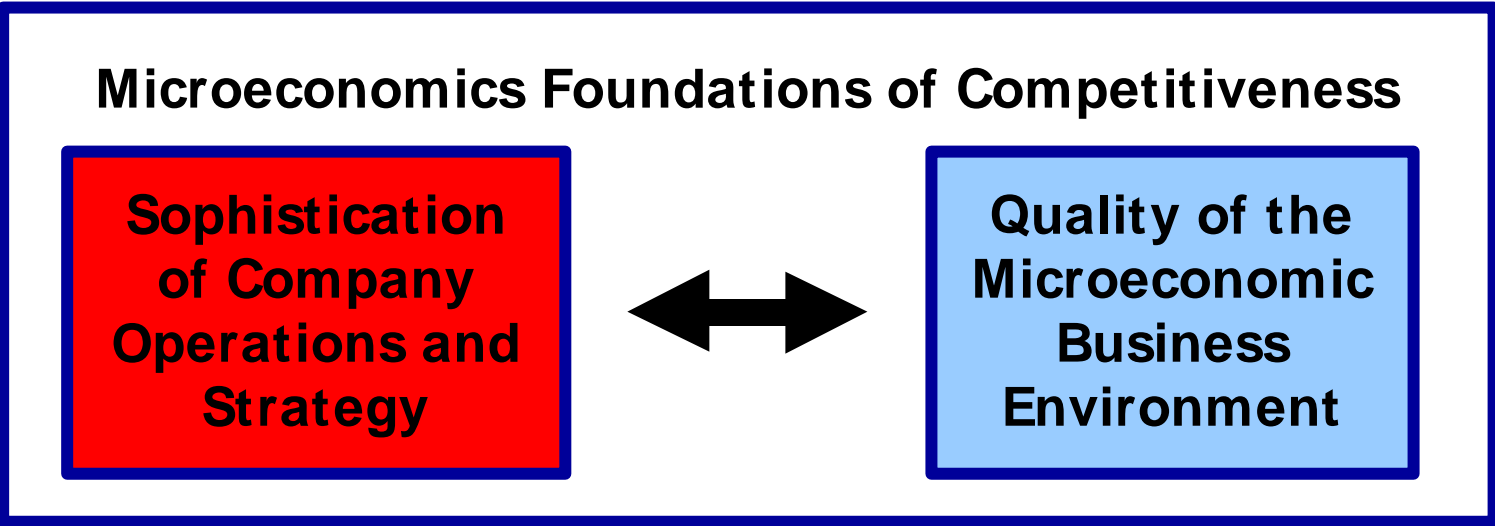
Danger Signs

Critical Issues

Strategic Recommendation

- Broodstock Domestication
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- Others

Macroeconomic, Political, and Legal Context



- Sound macroeconomic policies and a stable political / legal context are necessary to ensure a prosperous economy, *but not sufficient*
- Competitiveness ultimately depends on improving the *microeconomic* foundations of competition



What We are Missing?

► Framework & Objectives

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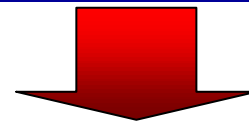
Critical Issues

Strategic

Recommendation

- Broodstock Domestication
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- Skills and knowledge human resources
- Shared vision among stakeholders
- Database and knowledge necessary to improve competitiveness
- Government support and efficient legal and regulatory systems
- Ownership/ leadership in both private and public sectors



- Which industries are we competitive in?
- Sustainability of industries' competitiveness?
- How to improve industries' competitiveness in the long run?



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Next Steps

▶ Framework & Objectives

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1. **More Detail Implementation** - Translate strategic recommendations into detailed action plans and set priorities. Assign project ownership.
2. **Horizontal Approach** - study other industries and/or clusters in order to find commonalities across various industries/clusters
3. **Top-down Approach** - Study country's portfolio of industries and their interactions with government macro-economic policies



Holistic Approach



Objectives & Deliverables

▶ Objectives

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✍ **Objective** of the study is to evaluate the competitiveness of “Black Tiger Shrimp Industry” and identify improvement opportunities by applying *Michael E. Porter’s* cluster concept and diamond model.

✍ **Deliverables** of the study are:

✍ **Assessment** of competitiveness and status of Thai Black Tiger Shrimp Cluster.

✍ **Strategic recommendations** to sustain and enhance the competitiveness of Black Tiger Shrimp, which include some specific recommended actions.



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Why Black Tiger Shrimp Cluster?

Objectives

► Why Shrimp?

Shrimp Cluster

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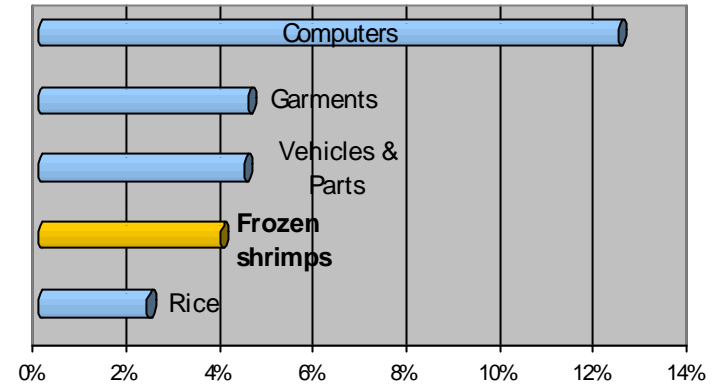
Strategic

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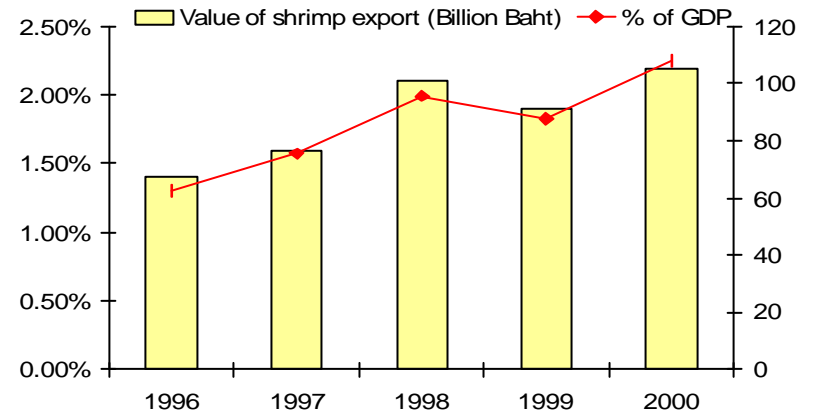
- Broodstock Domestication
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- **Shrimp industry is accounting for 3.9% of Thailand's total exports and brought in over 100 billion baht in 2000**
- **Equals 2.2% of Thailand's GDP in 2000, almost 60% increase from 1996**
- **Estimated number of people involved in Black Tiger Shrimp cluster is more than 1 million people**

Thailand's Major Export Product in 2000



Thailand's Shrimp Export as % of GDP



Source: Customs Department



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Why Black Tiger Shrimp Cluster?

Objectives

► **Why Shrimp?**

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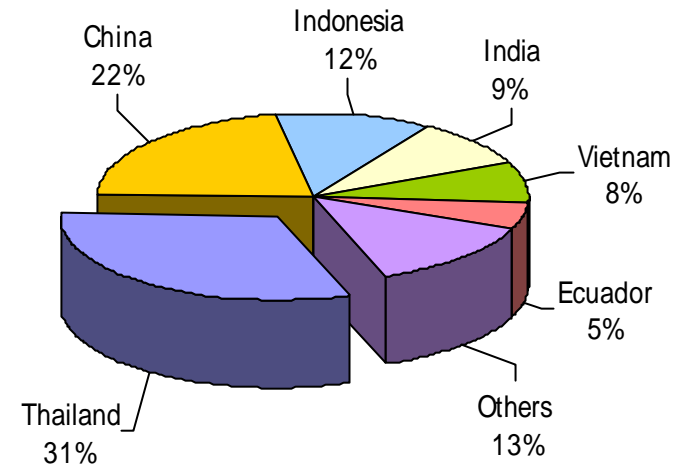
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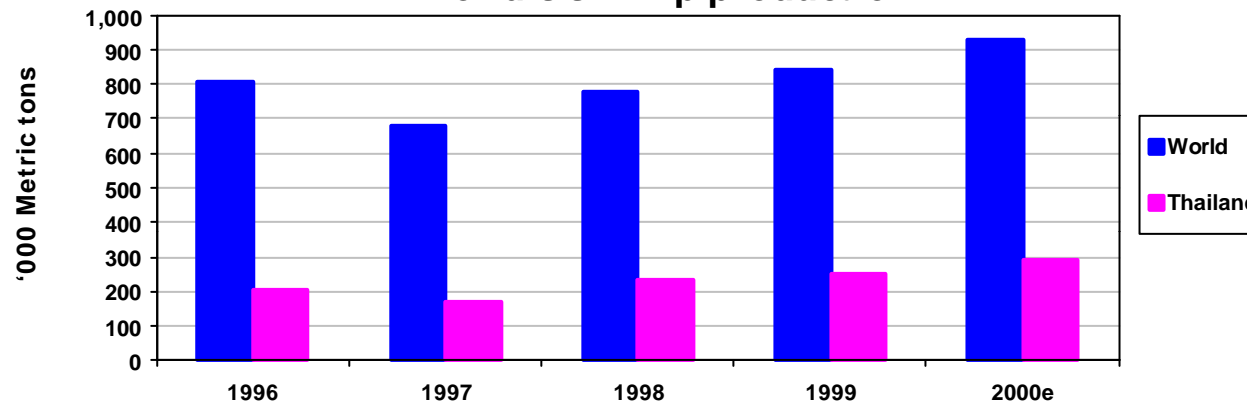
- Broodstock Domestication
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- Thailand has been the leader in cultivated shrimp producer which accounted for 31% of the total world cultured shrimp production
- World's production and demand is rapidly grown, Rhai black tiger shrimp industry has to focus on its competitiveness in order to sustain in the current leading position

Thailand share of world shrimp production in 2000



World's shrimp production



Source: Shrimp and Shrimp export volume - Custom department
 World production - World Shrimp Farming, Annual Report, Shrimp International 1996-1999



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Cluster Overview: Thailand Black Tiger Shrimp Cluster

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GOVERNMENT:

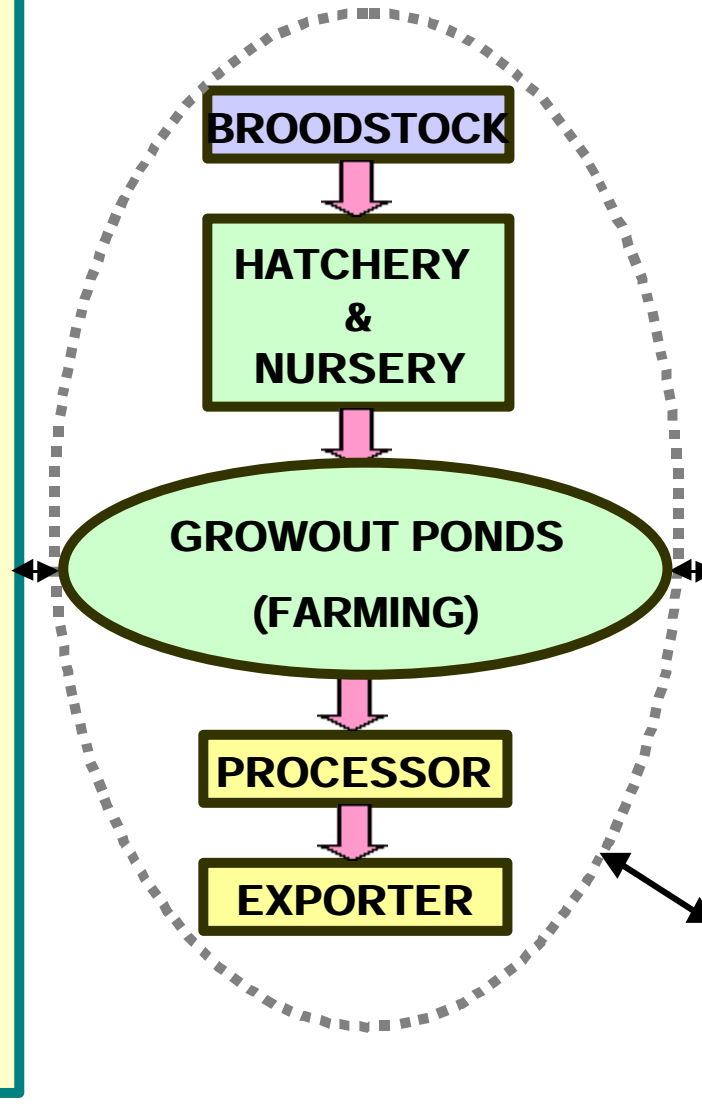
Ministry of Agriculture
 Ministry of Science Environment
 Ministry of Commerce
 Int'l Trade Negotiation
 Solving Trade Barrier Problem
 Issue Trade Protection Reg..
 Ministry of Industry
 Industry Standard Certificate
 Food Institution
 Ministry of Finance
 Ministry of Foreign Affair
 Give GSP to neighboring countries
 Ministry of Health
 Medical / Chemical Control
 Ministry of Labor
 Ministry of Interior
 Land Issues

SUPPORTING INDUSTRIES:

Ice Processors
 Cold Storage
 Packaging
 Chemical "health Products"
 Equipment (freezers)
 Animal Feed
 Fish auction market/Broker
 Logistics - trucking, shipping line
 Institution, Association
 R&D

INT'L BUYERS

Importers
 Traders
 Restaurants





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Value Chain of Black Tiger Shrimp Industry

Objectives

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Broodstock (mature shrimp) are sea-caught by trawlers as domesticated broodstock is still under study which required strong support from the government

Broodstock are bred and produced nauplii which are sold to nursery to produce postlarvae. Survival rate depends on quality of Broodstock as well as hatchery technique and management

Thailand conducts intensive farming with average pond size of 3 rai or less and the average production output is more than 600 kg/rai

Black Tiger Shrimps are processed into 2 main product forms: raw and value-added products i.e., cooked, Sushi ebi, breaded, etc.

Processors are usually also packers and exporters. Major export markets for Thai shrimp are US and Japan

There are many related & supporting industries in the Black Tiger Shrimp cluster



Farming

- Animal feed
- Ice Processors
- Health products
- Seafood auction market
- Broker
- Harvester
- Equipment

Others

- Public cold storage
- Packaging
- Equipment
- Restaurants
- Logistics - trucking, shipping line
- Deep seaport
- Institutions and Associations - (Government and business)
- R&D



Thai Shrimp Hatchery & Cultured Area

Objectives

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Source: Culture area – CP Group

- To avoid environmental issues caused by mismanagement of some shrimp farms, the law has limit Thailand's shrimp cultured area by only give permission around the seashore area
- Shrimp hatchery & nursery are located in 3 main coastal areas as follows:
 - Chachengsao and Chonburi
 - Songkla
 - Phuket and Pang-nga
- Total farming area along the coastal line is approximately 500,000 rais



Value Added

Objectives

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Value Chain	Value Added (Mil baht)
Broodstock	2,160
Hatchery & Nursery	2,640
Farming	62,400
Processor/Exporter	40,800
Total Value Added	108,000
Less Imported Contents	(15,000)
Total Domestic Value Added	93,000

- **Processing involves the largest workforce and has the highest value-added in the Black Tiger Shrimp cluster**
- **Estimated local content is greater than 90% with imported proportion from chemical and some feed ingredients**

Remarks : Std shrimp size 50 pcs/kg, sold @ 200 baht/kg locally, \$9/kg export

Source: Farming Cost: CP Group

Value Added Calculation: Cluster Study Team¹²



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World Market

Objectives

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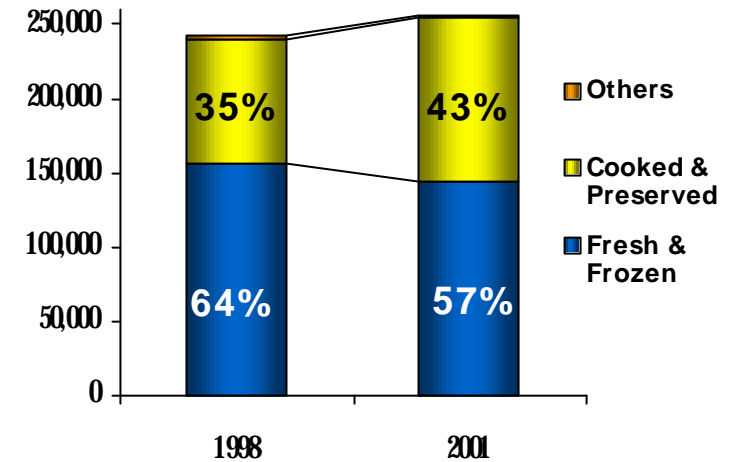
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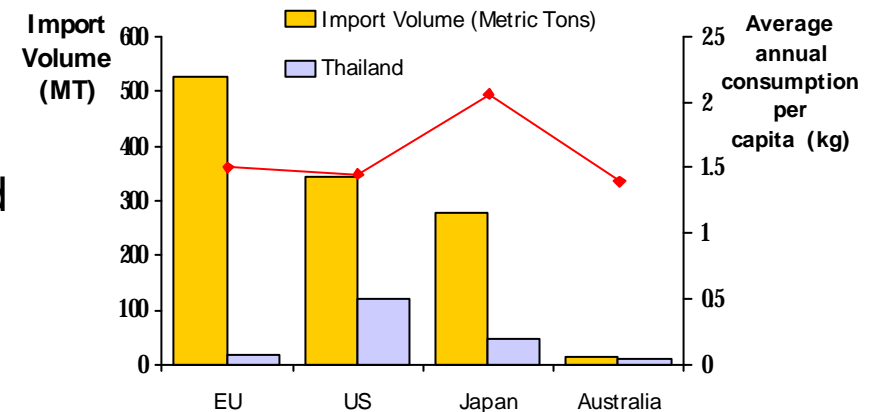
- Broodstock Domestication
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- Two main exported forms for Black Tiger Shrimp are :
 - (1) traditional raw frozen shrimp
 - (2) value added preserved-shrimp
- Three major markets--US, EU and Japan--contributed to majority of total world demand
- US and Japan are the two most important markets for Thai shrimp equal almost 70% of total export
- Europe is biggest importer and consumer of shrimp however many trade barriers have prevented Thai shrimp for gaining higher penetration

Thai shrimp export by type



Export share to main markets in 2001



Source: Customs Department



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Competitors

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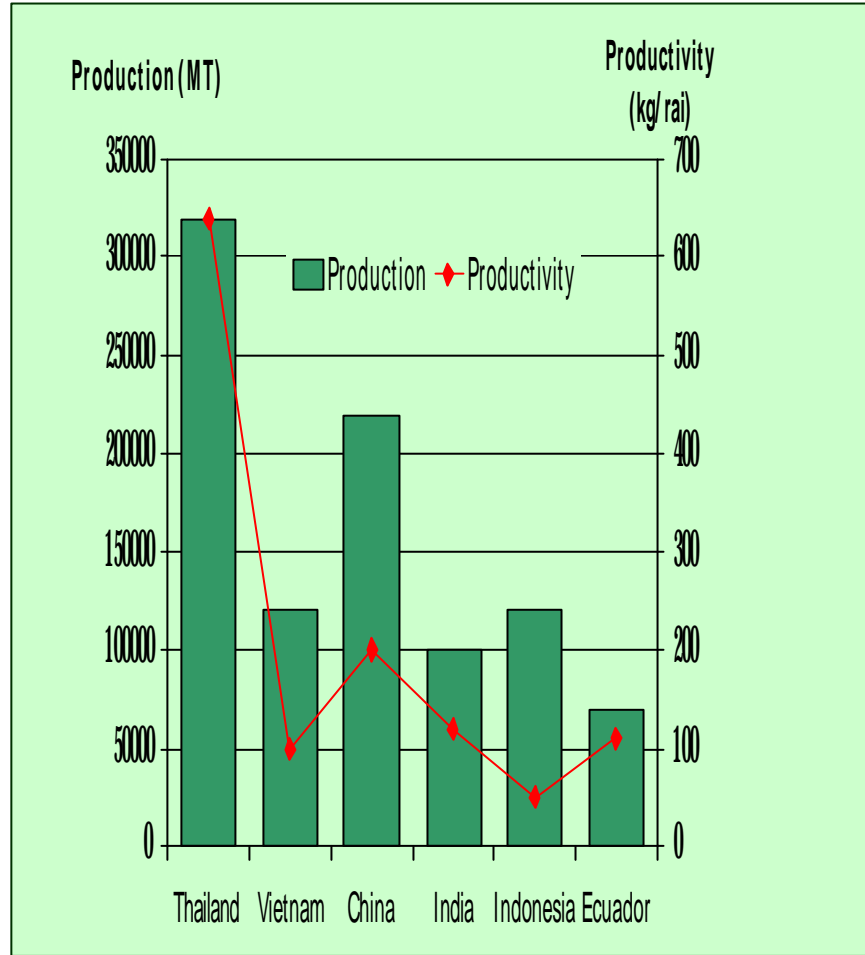
• **Competitors are**

Vietnam China
Indonesia India
Ecuador

• **Thailand gain higher farming productivity**

• **However, competition is strong from low cost producer as farming technology is easily transferred.**

2001 World Shrimp Farming Players



Source: World Shrimp Farming Report, modified by CP Group Thailand



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Environmental issues

Objectives

Why Shrimp?

► **Shrimp Cluster**

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Facts:

Continuous growth in demand for shrimp and high profit potential have led more and more farmers to shift to shrimp farming. Lacking in proper knowledge on good farming practices of some operators lead to many environmental issues that the industry is facing

Perception on environmental issues of Thai shrimp industry:

- Invasion and destruction of mangrove area
- Degradation of land by increasing salinity level
- Water pollution from a substandard farm management
- Improper usage of chemical and antibiotic products



Environmental issues: What have been done

Objectives

Why Shrimp?

► **Shrimp Cluster**

Diamond Model

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Perception

1. Invasion and destruction of mangrove area
2. Degradation of land by increasing salinity level
3. Water pollution from a substandard farm management
4. Improper usage of chemical and antibiotic products

Corrective Actions

A research from Aquatic Resources Research Institute of Chulalongkorn University shows that Thailand's closed system shrimp farming--intensive culture method--did not lead to the reduction of mangrove area

Newly enforced law to limit shrimp culture area only to seashore area, and not allowed shrimp farming in freshwater area (inland) has solved the issues on land pollution

Proper farming methods have been proved to result in minimal impact to environment i.e. closed system, probiotic farming

Department of fisheries have established a 'code of conduct' based on good operating practices of the shrimp industry, so far the initiative is already implemented but the progress still need to be expedited



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Diamond Model : Factors That Support Shrimp's Competitiveness

Objectives

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Shrimp Cluster

Diamond Model

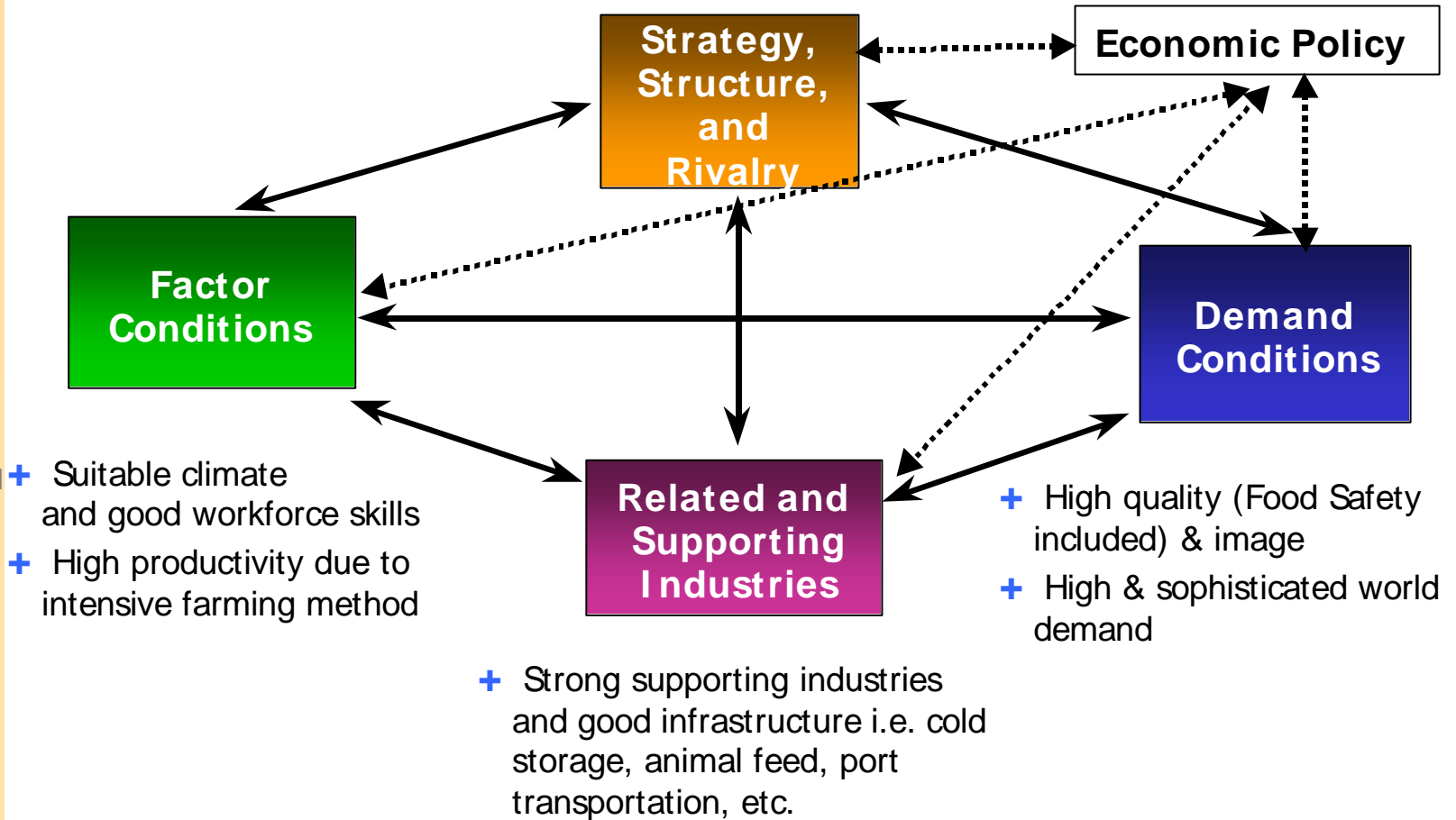
▶ Danger Signs

Critical Issues

Strategic Recommendation

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- + High competition among processors and farms
- + Low entry barrier (Farming)





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Diamond Model : Factors That Hinder Shrimp's Competitiveness

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▶ Danger Signs

Critical Issues

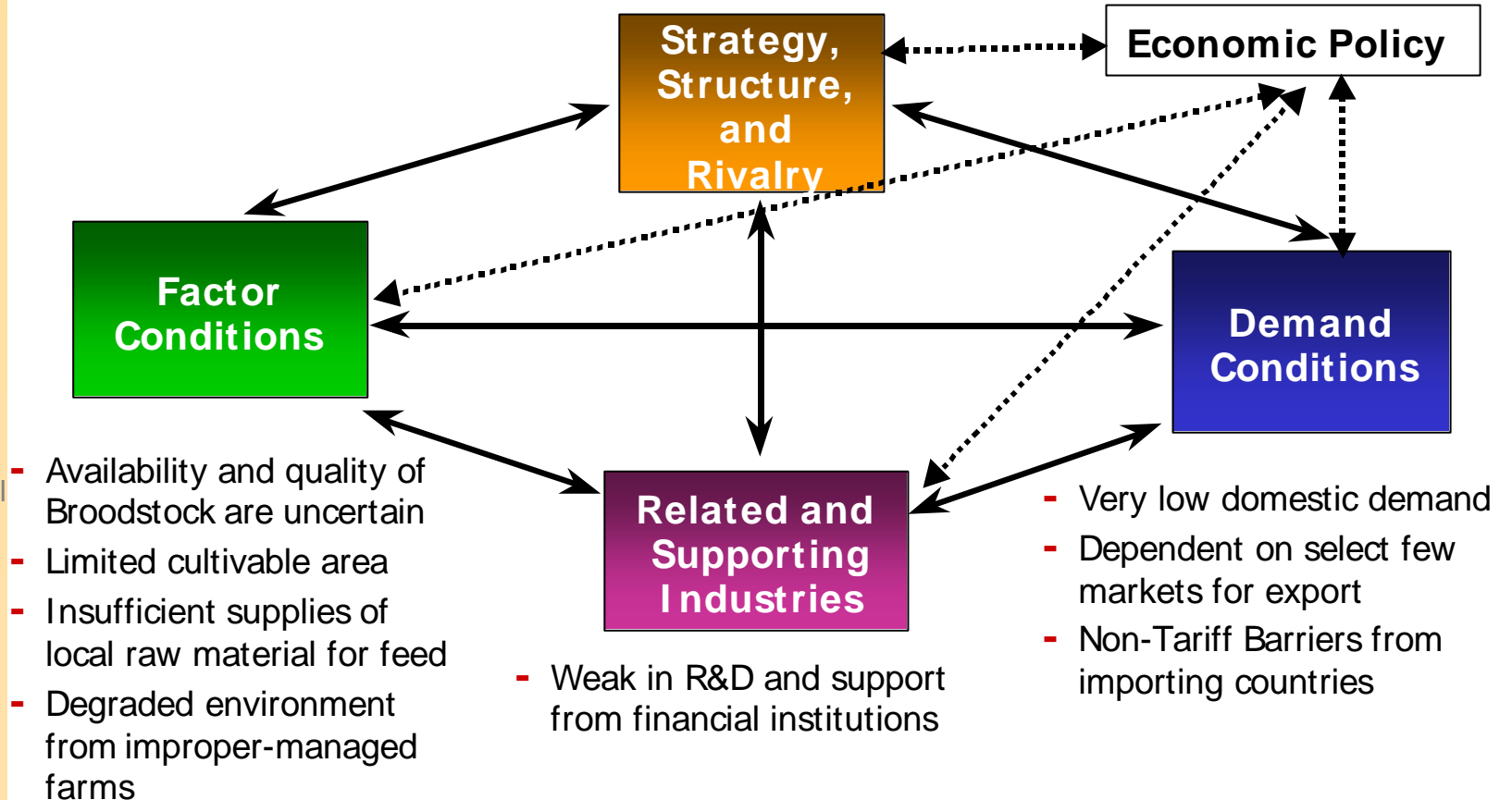
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- Pressure from lower cost competitors
- Price volatility of commodity-type product

- Non proactive policy
- Trade disadvantage





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Danger Signs : Quality and Quantity of Broodstock

Objectives

Why Shrimp?

Shrimp Cluster

Diamond Model

► **Danger Signs**

Critical Issues

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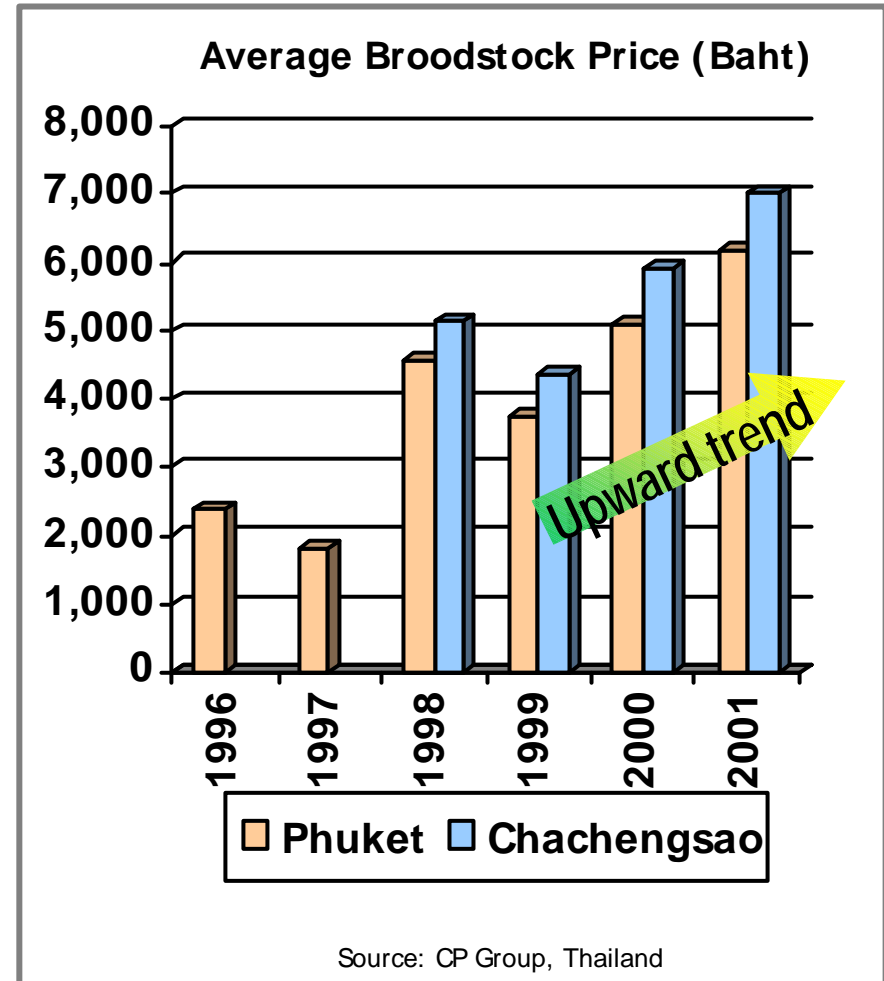
Recommendation

- Broodstock Domestication
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- **Uncertain quality and quantity of broodstock** since Broodstock is still 100% depended upon sea-catch

- **Upward price trend** indicates higher demand and possibly decreasing of supply

- **Needs to develop R& D** on Broodstock domestication





Limited Farming Area

Objectives

Why Shrimp?

Shrimp Cluster

Diamond Model

► **Danger Signs**

Critical Issues

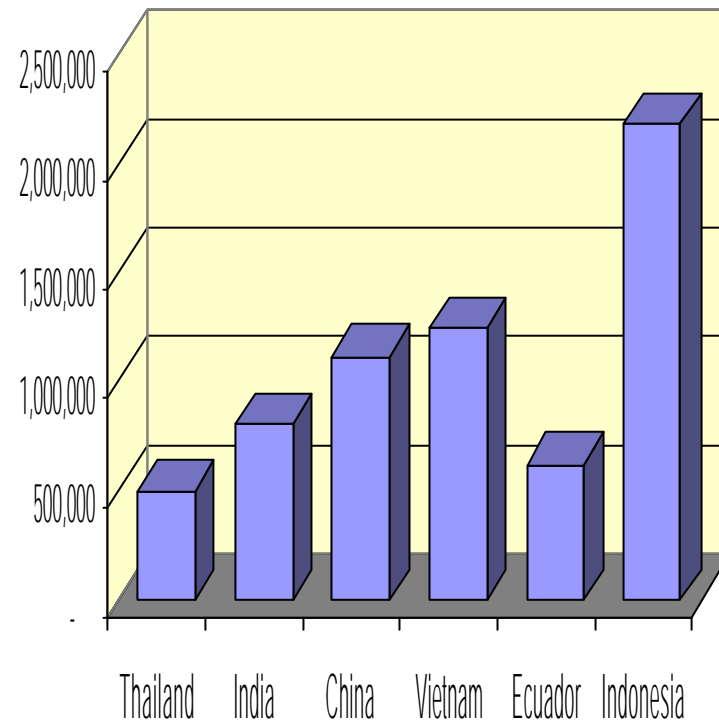
Strategic

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- Others

- **Total Farming Area is limited by law to 500,000 rai along coastal area**
- **Lacking in proper knowledge on good farming practices of some operators lead to many environmental issues that the industry is facing**
- **Weak financial support to shrimp farmers**

Estimated 2001 Culture Area (Rai)



Source: CP Group, Thailand

Remarks 1 rai = 0.16 hectare



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Decreasing Shrimp Size and Declining Export Volume

Objectives

Why Shrimp?

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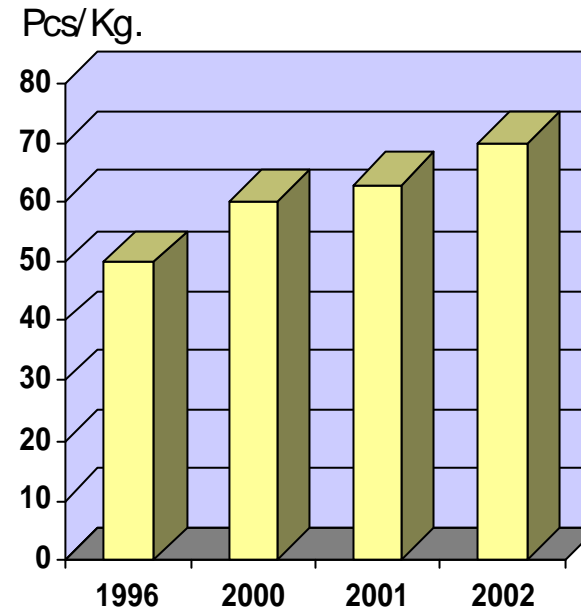
• **Average size of Thai Black Tiger Shrimp is decreasing due to various reasons**

1996	50 Pcs/ Kg
2001	63 Pcs/ Kg
2002	70 Pcs/ Kg

• **Shrimp exports volume has dropped by 15% in year 2002**

• **Non-Tariff Barriers from world major importing countries**

Average No. of Shrimp per Kg.



Source: CP Group, Thailand



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Summary of Critical Issues in Shrimp Cluster

Objectives

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► **Critical Issues**

Strategic

Recommendation

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- Others

Broodstock

- Broodstock quality and availability
- Lack of continuous research and knowledge development

Farming

- Disease prevention and control
- Management of chemical and antibiotic residues
- Impacts on environment through inappropriate farm management and lack of proper farming knowledge

Other issues

- Few major export markets with strong bargaining power and trade barrier
- Appropriate roles of Government to support the industry. i.e., international trade negotiation



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Shrimp Competitiveness Framework

Objectives

Why Shrimp?

Shrimp Cluster

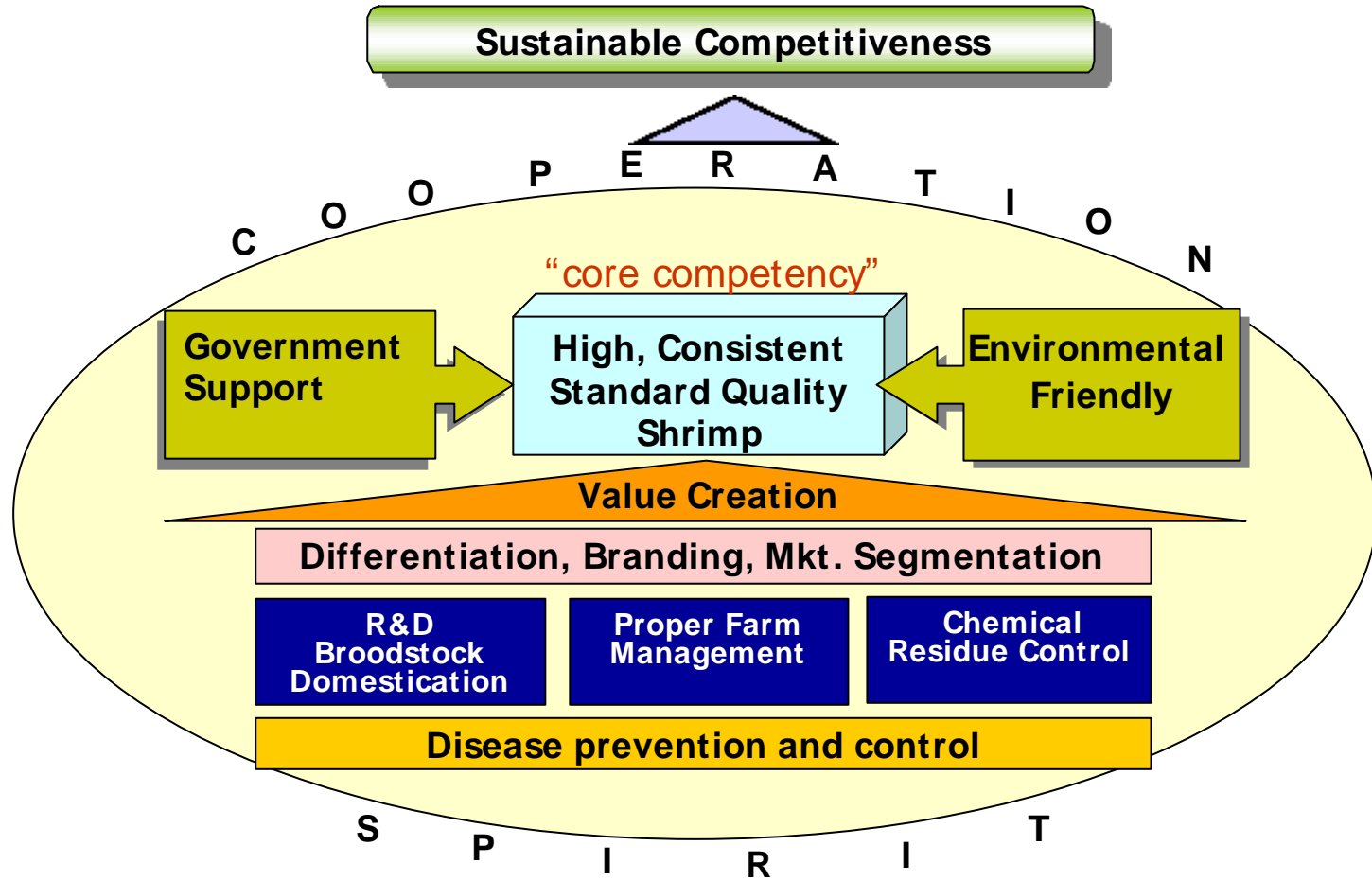
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► **Critical Issues**

Strategic Recommendation

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- 📖 Sustain **core competency** in Shrimp Quality
- 📖 Focus on **value creation** in the strategic areas
- 📖 Promote **cooperation spirit** of shrimp cluster



Vision for Tiger Shrimp Industry

Objectives

Why Shrimp?

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► **Strategic Recommendation**

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Vision

“Thai Tiger Shrimp Cluster will be one of the top-tier industries which generates prosperity to the Kingdom of Thailand and continues to be competitively sustainable in the long term”



Recommendations – Immediate Actions

Objectives

Why Shrimp?

Shrimp Cluster

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► **Strategic Recommendation**

- Broodstock Domestication
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Securing Sustainability Strategies

1. R&D on Broodstock Domestication

2. Financial Support for Better Farm Mgmt.

3. Chemical Residue Control



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Shrimp Competitiveness Organization Structure

Objectives

Why Shrimp?

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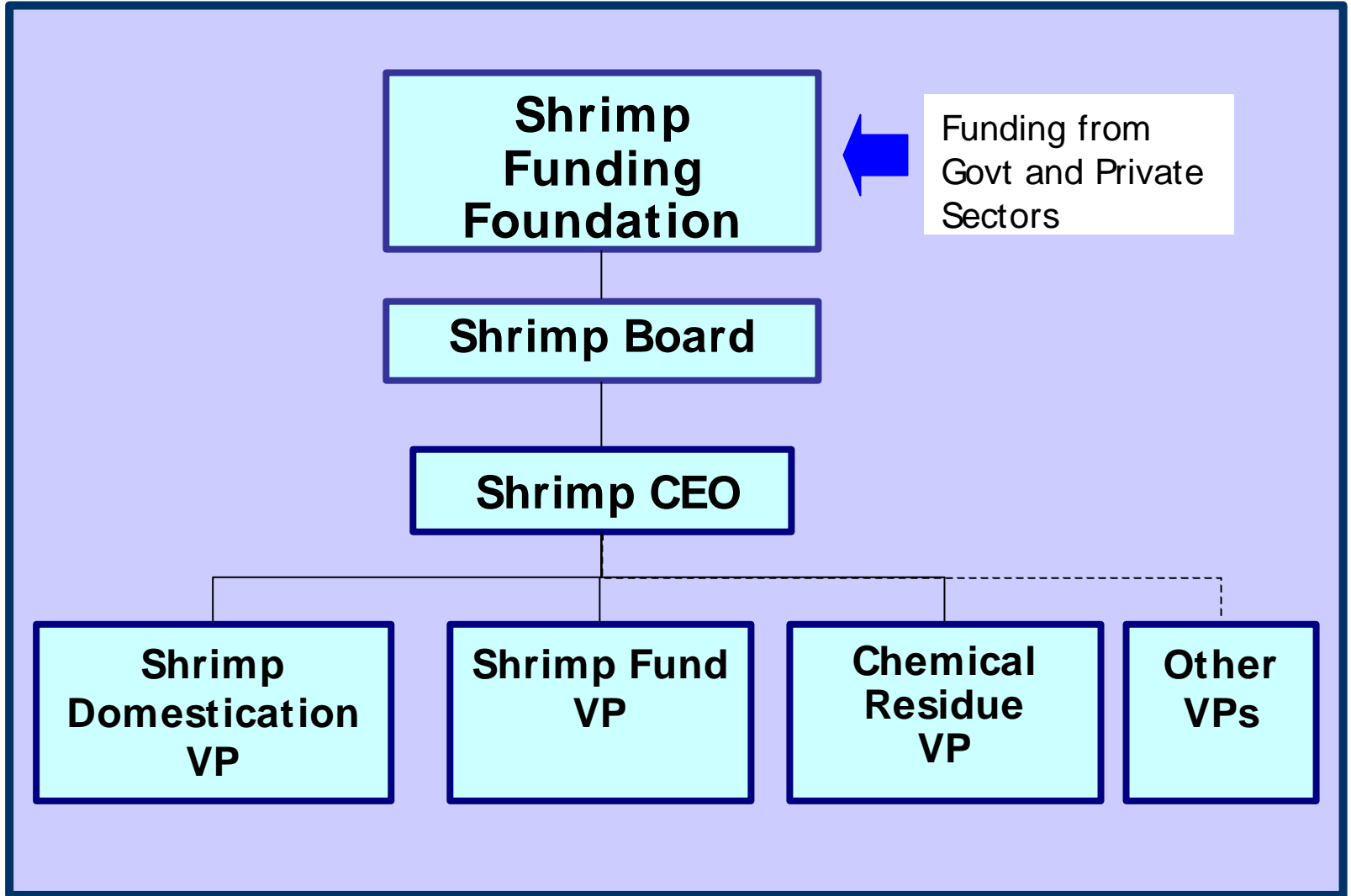
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Recommendations – R&D on Broodstock Domestication

Objectives

Why Shrimp?

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Strategic Recommendation

- ▶ **•Broodstock Domestication**
- Improve Farming Mgt
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Actions	Responsible Parties
1. Establish a Broodstock Domestication Committee (BDC) to be responsible for R&D project, consisting of related government and private organizations	Shrimp Board, VP
2. Establish Nucleus Breeding Centers (NBC) and Broodstock Multiplication Centers (BMC)	BDC
3. NBCs and BMCs to be initially funded by the government and private organizations	NBCs and BMCs through BDC approval
4. Conduct regular meeting for updating project status and knowledge sharing purposes	BDC, NBCs and BMCs

Investment: Estimated 1 billion baht

Benefits: Stable high quality broodstock to replace inferior sea-caught broodstock

Healthy shrimp breed, gaining higher productivity



Recommendations – Farm Improvement Funding Support

Objectives

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- Broodstock Domestication

► **•Improve Farming Mgt**

- Chemical Residue Control
- Others

Actions	Responsible Parties
1. Establish a Shrimp Fund Committee (SFC) to be responsible for farm improvement project, consisting of related government and private organizations	Shrimp Board, VP
2. Establish Productivity Fund, Inactive Farm Fund, and Irrigation for Shrimp Culture	SFC
3. SFC to Establish selection criteria for granting funds to appropriate farmers or infrastructure investment	SFC together with local related organizations
4. Set up activities; PR, seminars, consultation on proper farm mgmt. process to fulfill funding objectives	SFC

Investment: Estimated 1 billion baht

Benefits: Healthy shrimp, gaining higher productivity, strengthening & sustaining the leading position of Thai shrimp industry



Recommendations – Chemical Residue Control

Objectives

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Strategic Recommendation

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- ▶•**Chemical Residue Control**
- Others

Actions	Responsible Parties
1. Establish a National Chemical Residue Board (NCSB) to be responsible for chemical residue control project, sharing inspection machine with other industries	Thailand Competitiveness Council
2. Establish Center for Inspection and Research on Chemical Residues (CICR)	NCSB
3. CICR to be funded by the government accordingly	CICR with NCSB's approval
4. Provide chemical inspection service, seminars, consultation and R&D on chemical residues	CICR

Investment: Estimated 50 million baht per CICR

Benefits: Thai shrimp will be an internationally-accepted chemical residue-free product, and protect Thai shrimp from NTB on chemical residue



Other Long-Term Strategic Recommendation

Objectives

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▶ • **Others**

Positioning as a premier supplier

- High, consistent standard quality of products
- Product Differentiation: Create Thai shrimp brand
- Develop expertise through R&D and training
- Market segmentation for deliver optimum customer satisfaction

Reshaping the industry structure

- Develop direct sales channel to end customers
- Invest in product R&D to gain more value added
- Searching for alternative high potential shrimp breed

Fully support from the government

- Trade negotiation
- Law & regulation, proper enforcement
- Financial support

Q & A Session



Thank you

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