Project on Monitoring the Impacts of the Expiry of the Agreement on Textiles & Clothing (ATC) and Enhancing Forward Looking Industrial & Employment Policies - Phase II

Enhancing Forward-Looking Industrial & Employment Policies in Provincial Cambodia: Summary of Research Findings and Public Policy Consultation in Kampong Cham Province

(Draft)
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Introduction and Project Overview

The Agreement on Textile and Clothing (ATC) expired at the end of 2004, eliminating a 40 years old global quota regime that helped shield the cost disadvantages of garment manufacturers in small, exporting countries such as Cambodia. In response, the Friedrich Ebert Stiftung (FES), a German foundation, and the Cambodia Institute of Development Study (CIDS), a local research institute, launched the 4-years project on *"Monitoring the Impacts of the Expiry of the Agreement on Textiles & Clothing (ATC) on Cambodia's Garment Industry and Enhancing Forward Looking Industrial and Employment Policies"* in 2007 with the objective to engage key stakeholders in both the public and private sectors in policy dialogues to enhance industrial diversification and employment generation at the provincial level.

The project activities consist of research activities, which are then used as input for a series of constructive public policy dialogues at the provincial level. Three provinces have been selected based on the importance of the garment industry as an income and employment source for local residents: Kampong Cham, Kandal and Kampong Speu.

This brief highlights some of the key findings of our first research paper[1] on sources of industrial diversification at the provincial level. In addition, we present the perspectives of local policymakers, businesspeople and investors on the current situation of some potential industrial sectors in their province, its future potential, constraints and possible solutions.

Forward-Looking Industrial Diversification

Frame of Analysis

We use a deductive approach to identify sub-sectors with the highest potential to serve as a new source for industrialization and employment. In the first step of our analysis, we conducted a macroeconomic scan to identify sub-sectors based on four key indicators: trend of growth, share in GDP, level of employment, and investment. The second step consisted of a rapid assessment and ranking of the identified sub-sector in terms of its growth potential (i.e. market demands, factor conditions, value-added potential...) and fulfillment of development objectives (employment creation, integration of retrenched garment workers, gender aspects...).

[1] Cambodia Institute of Development Study (2007). *Post-ATC Trends in the Textile and Clothing Sector- Policy Response and Options.* Research paper for the Friedrich Ebert Stiftung. Phnom Penh, Cambodia. Can we retrieved on www.cids-cambodia.org

Key Economic Indicators of Selected Sub-Sectors (2004-2006)

SECTORS / SUB-SECTORS	Share of REAL GDP (%)			Growth Rate (%)		
	2004	2005	2006	2004	2005	2006
Industry	**27.3**	**27.0**	**27.8**	**16.4**	**12.1**	**9.1**
Food, Beverages, & Tobacco	2.5	2.4	2.3	(1.0)	8.0	4.0
Textile, Apparel, & Footwear	15.3	14.9	15.5	24.9	10.3	10.0
Wood, Paper & Publishing	0.4	0.4	0.5	4.4	6.6	2.0
Rubber Manufacturing	0.3	0.2	0.2	(11.5)	(8.9)	0.0
Other Manufacturing	2.0	1.9	1.9	3.2	11.0	5.0
Construction	6.0	6.3	6.6	13.2	20.1	11.0
Services	**36.7**	**36.2**	**36.2**	**11.7**	**12.1**	**6.0**
Trade	8.8	8.4	8.3	5.5	8.4	5.0
Hotel & Restaurants	4.1	4.2	4.4	23.4	17.3	10.0
Transport & Communication	6.1	6.1	6.1	7.5	13.1	6.0
Finance	1.1	1.2	1.2	20.7	19.3	6.0
Sources*	A	A	C	A	A	B

SECTORS / SUB-SECTORS	Employment ('000 workers)			Investment (million US$)		
	2004	2005	2006	2004	2005	2006*
Industry	**947.0**	**1,059.0**	**1,164.9**	**176.0**	**931.0**	**235.5**
Food, Beverages, & Tobacco	180.0	197.3	218.3	6.0	27.0	**194.6**
Textile, Apparel, & Footwear	396.0+	434.0+	480.2+	136.0	202.0	n/a
Wood, Paper & Publishing	57.6	63.1	69.8	4.0	3.0	n/a
Rubber Manufacturing	7.2	7.9	8.7			n/a
Other Manufacturing	79.2	86.8	96.0			n/a
Construction	195.0	234.0	291.2	0.0	30.0	n/a
Services	**2,027.0**	**2,163.0**	**2,314.4**	**153.0**	**211.0**	**2,092.7**
Trade	1,043.0	1,104.0	1,180.3	n/a	n/a	n/a
Hotel & Restaurants	20.3	21.6	23.1	38.0	107.0	15.0
Transport & Communication	195.0	206.0	208.3	-	13.0	n/a
Finance	n/a	n/a	n/a	n/a	n/a	n/a
Sources*	C	D+C	C	D	D	E

*Sources:

A NIS National Accounts 2003-2005
B National Strategic Development Plan 2006-2010 (RGC) - estimated and projected figures are based on National Account figures in 2004
C Extrapolated by CIDS based on data from NIS Statistical Yearbook 2005 and MIME Industrial Survey 2004; assuming constant growth in employment
D NIS, IMF and CDC as extracted from Annual Development Review 2006-07 (CDRI)
E CDC
* Up to May 2006
+ Employment for 'textile, apparel and footwear' includes those in registered (based on national statistics) and unregistered enterprises (estimated)

Potential Sub-Sectors

The data reveals that:

- There is **no single sub-sector with the capacity to absorb high volumes of employment and significantly contribute to GDP**, so as to compensate for potential losses in the garment sector. On a three year average from 2004 to 2006, the garment sector absorbed 13.5 percent of total employment in the industry and service sector, and made up 15.2 percent of GDP.

- Besides the garment sector, the following sub-sectors take in the **highest portions of the labor force** in the industry and service sectors: trade (34.4%), construction (7.4%), transport & communications (6.3 %), and food, beverages & tobacco (6.2%).[2]
- Besides the garment sector, the following sub-sectors make up the **largest shares in GDP**: trade (8.5%), construction (6.3%), transport & communication (6.1%), hotel & restaurants (4.2%).[3]
- Besides the garment sector, the following sub-sectors had the **highest growth rates**: hotel & restaurants (16.9%), finance (15.3%), construction (14.7%). [4]
- Trade includes motor vehicle sales and repair, wholesale businesses, and retail businesses. While the trade sub-sector reveals to have the highest absorption of labor and growth rate compared to the other sub-sectors, it cannot serve as a backbone sector because it is a residual sub-sector that depends on growth in other sub-sectors, especially the garment sector.

The implications of these findings are:

- To overcome this situation, a **cross-sectoral strategy** that utilizes and strengthens in the **existing linkages within the economy** may produce the desired outcome of high employment generation and high growth rates. The strategy should consider combining small but emerging, high growth sub-sectors in order to create synergies in the economy.
- The benefits of a cross-sectoral strategy are:
    - strengthening and broadening of the economic foundation
    - increase in value added retention within the economy
    - possible spillover effects into other branches of the economy

The recommended sub-sectors are 1) food, beverages & tobacco, and 2) hotel & restaurants. Together, it makes up more than 7 percent of GDP and absorbs at least 241,400 workers, mostly women[5]. The benefit of this combination is the **existing linkage between domestic input markets and domestic output markets.** Raw materials are locally available for processing, and demand in local markets (that is, hotel and restaurants) for these products already exists. Moreover, food-processing requires moderately **low levels of investment**, which makes market entry for domestic investors possible. Furthermore, growth in either of these sub-sectors could **induce investment in other branches** such as construction, and transport & communication, triggering a growth dynamic for further growth and development. These benefits are necessary conditions for sustainable growth and development, and could help broaden the economic base.

Public Policy Consultation in Kampong Cham

The idea behind the provincial public policy consultations is not only to initiate dialogue on industrial diversification but to give local stakeholders ownership and technical assistance in developing industrial development strategies and plans. For Kampong Cham province, a decline in the garment industry could have severe, adverse impacts on the economic and human development of locals because of its significant contribution to employment and income for locals. There are more than 4,000 garment workers currently employed in factories located in

[2] Figures are in three-year averages
[3] Figures are in three-year averages
[4] Figures are in three-year averages
[5] National statistics account only for registered businesses; thus, the number of laborers is likely higher if we take account of the vast number of unregistered businesses.

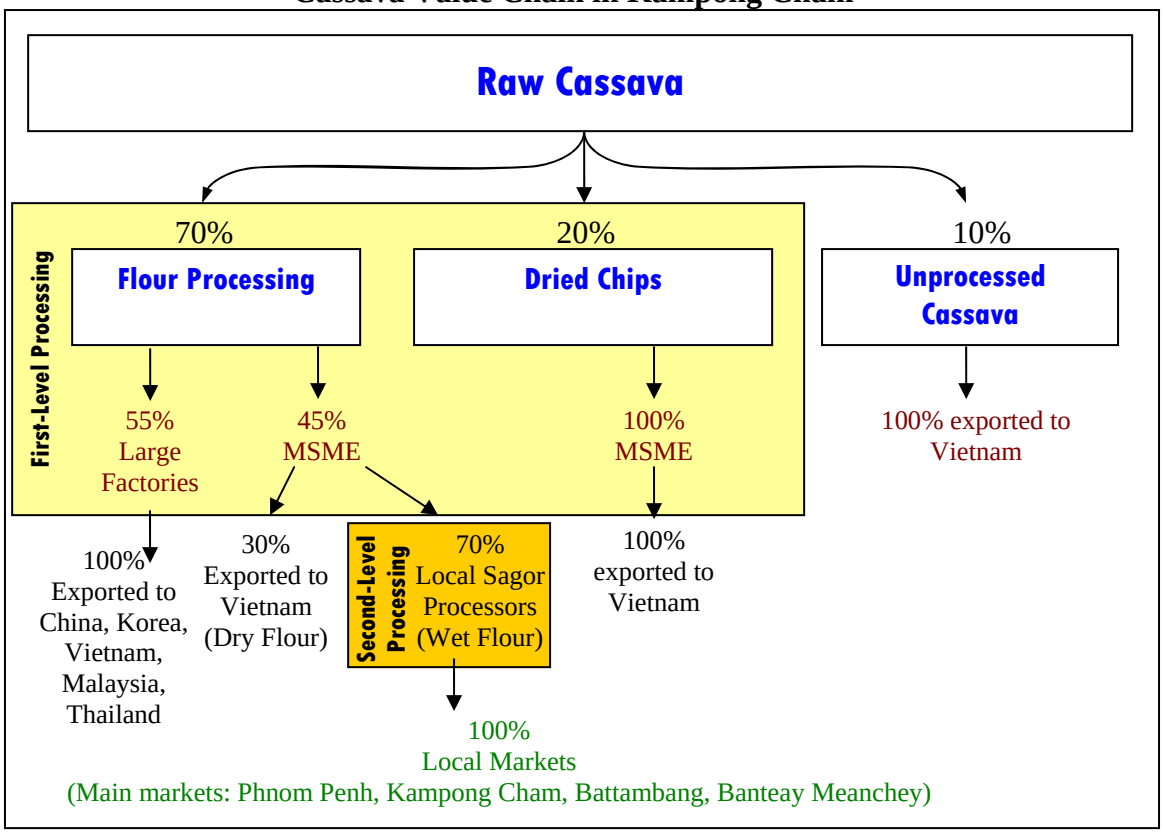
Kampong Cham and more who migrant to work in Phnom Penh and other areas[6], bringing in income of over US$200,000 per month.

From the policy consultations in Kampong Cham, provincial stakeholders identified two sectors in the province with potential to absorb retrenched garment workers and generate income: cassava and cashew. The following summarizes the research findings and discussions regarding the **cassava value chain**.

Cassava: Current Situation

The cassava value chain in Kampong Cham province is currently weak and limited, producing primarily low quality, low value-added products. The first level processed products are cassava flour and dried cassava chips (very small); the second level processed product is sagor. However, it has gradually expanded in recent years due to an increase in demand and has caught the attention of some foreign investors. There are over 200 local MSMEs and 5-6 large, foreign-owned enterprises in this sector operating in Kampong Cham. Cassava farming and processing activities provide jobs for over 100,000 people and generate an estimated net income of US$50 million per year.[7]

Cassava Value Chain in Kampong Cham[8]



[6] There is no accurate statistics available
[7] Estimated by CIDS based on statistics and consultation with technical departments and experts in Kampong Cham province
[8] Based on statistics from Kampong Cham technical department, CIDS field survey, and consultations with local experts

Farming

Cassava farming activities provide over 100,000 jobs to local people and generate a net income of over US$30 million each year.[9] In 2007, cassava was cultivated on 53,768 hectare of land in Kampong Cham and production volume was 1 million tons. Yield is around 20 tons per hectare. The key locations for cassava farming and processing in Kampong Cham province are: Tboung Khmum, Punhea Krek, Stung Trang, and Memut districts.

Locals perceive cassava to be an easy and profitable crop to cultivate, which can be grown year-round. The cost of cultivating cassava is low, averaging around US$350-450 per hectare, of which labor costs around $200 per hectare (approximately 20-30 people per hectare) and land rent ranges from $150-$250 per hectare. Wages for manual laborers is about 15,000 riels per person per day. The farm-gate price of raw cassava is roughly US$50-62.50 per ton at the time of this research. The profit margin is roughly 64%[10], or in dollar terms, one hectare of cultivated land generates a profit of $800.

The bulk of raw cassava is sold to local flour producer (70%), while some are sold to local dried cassava chips producers (20%), and approximately 10% are exported to Vietnam unprocessed.

Processing

Cassava processing activities in Kampong Cham provide some 4,000 jobs to locals, generating net income of over US$15 million per year. [11] The main types of processed cassava currently produced in Kampong Cham are flour, dried cassava chips and sagor.

Flour

There are an estimated 200 micro, small and medium enterprises in this business, providing around 4,000 jobs to locals and generating an annual net income of US$15 million.[12] Average production capacity is 50 tons per month. Most processors are clustered in Tboung Khum District. Flour with high water contents ("wet flour"), which makes up about 60% of the production, is sold to local sagor factories, while flour with little water contents ("dry flour") is exported to Vietnam.

There are also 5-6 large cassava flour processing enterprises, mostly foreign owned. Large enterprises employ 50-150 workers on average. Average production capacity is about 1,500-3,000 tons per month. Recently, one South Korean factory was set up in Tboung Khmum with annual production capacity of 100,000 tons. Larger factories produce for export primarily to China, South Korea, Vietnam, Malaysia and Thailand.

At the time of the study, the price of cassava flour is $350 per ton. Production cost per ton of flour is about US$280, of which US$250 is the cost of raw cassava and US$30 is for other operation costs. Thus, the profit margin is roughly 20%, or in dollar terms, one ton of flour earns a profit of US$70.

[9] Estimated by CIDS based on statistics from Kampong Cham technical departments and consultations with local experts

[10] Profit margin = (Sales value – Production cost) / Sales value = ($1,250 - $450) / $1,250 = 0.64 or 64%

[11] Estimated by CIDS based on statistics from Kampong Cham technical departments and consultations with local experts

[12] Estimated by CIDS based on statistics from Kampong Cham technical departments and consultations with local experts

Sagor

Sagor production clusters in Tboung Khmum District, where around 50 MSMEs are in operation. This activity employs around 750 workers and generates a net income of US$900,000 per year.[13] Average production capacity is around 40 tons per month per factory, amounting to an estimated production volume of 30,000 tons of sagor per year within this cluster.

The price of one ton of sagor is presently US$400. Production cost per ton is about US$370, of which roughly US$250 is spent on cassava flour and U$30 on general operation costs. Profit is estimated to be US$30 per ton of sagor, a profit margin of 7.5%.

At present, sagor is only sold in the domestic markets. Producers say their main markets are Phnom Penh, Kampong Cham, Battambang, and Banteay Meanchey.

Sagor Factory in Kampong Cham

1. Cassava flour 	2. Sagor processing machines [back: oven, front: flour mixing machines] 	3. Worker preparing sagor for baking 
4. Worker spreading baked sagor for cooling 	5. Sagor is sun dried before packed 	6. Sagor sold in local supermarket 

Pictures taken by CIDS at a sagor enterprise in Tboung Khmum District, Kampong Cham province (2007)

An interesting point to highlight about the existing cassava value chain in Kampong Cham is that the profit margin falls as you move up the chain, which is in reverse of economic principles, which states that higher value added products generate higher profit. One possible explanation for this is that it may reflect high production cost and low productivity due to rudimentary machines, technology and know-how.

[13] Estimated by CIDS based on statistics from Kampong Cham technical departments and consultations with local experts

Profit Margin in Cassava Value Chain[14]

	Cassava Farming	Flour	Sagor
Profit Margin (%)	64%	20%	7.5%
Profit ($)	US$40 per ton[15]	US$70 per ton	US$30 per ton

Potential Situation

Demand

Global demand for starch and starch-containing crops has been growing strongly over the years. According to a report by the Food and Agriculture Organization[16], about 60 million tons of starch is extracted each year from crops such as corn, wheat, cassava, potato and sweet potato. Of this, around 10% of the starch comes from cassava roots. Cassava is the cheapest starch content crop. Some factors stimulating the demand for starch are:

- increase in world income, which has triggered demand for meat products and products that need starch, such as sweeteners and fermentation products
- increase in world demand for energy, resulting in build-up of bio-alcohol and bio-ethanol industries

In addition, starch has many uses in many industries[17], which could be market opportunities for Cambodian producers:

- animal feed: compound feed is based on at least 50% starch crops for poultry and pigs
- input for food industry: as thickener, filler and binder; manufacture sweeteners and syrups used in soft drinks and brewing industry; baked goods, confectionary and other food products; stabilizers in soups and frozen food
- input for industrial purposes: raw material for ethanol/alcohol making, binder in concrete, stiffening agent in textiles, adhesives on stamps, cardboards and plywood, coating on pills and paper, cosmetics

Cassava is becoming a preferred crop for starch extraction because of its advantages in:

- Production – high yields per hectare, tolerance to drought, and degraded soils, greater flexibility in planting and harvesting
- Starch extraction – root contains more starch, by dry weight, than almost any other food crop, and starch is easy to extract with simple technologies
- Starch contents - According to agricultural engineers, starch from cassava offers greater clarity and viscosity, and is more stable in acidic food products than starch from other plants.
- Export prices – lower than those of potato, maize and wheat starch produced in EU and USA

Supply

According to consultations with local experts including technical departments, district chiefs and businesspeople, a little promotion of the cassava value chain, such as training farmers on how to

[14] Estimated by CIDS based on statistics from Kampong Cham technical departments and consultations with local experts
[15] Profit of US$800 per ha
[16] FAO (2006). *Spotlight: Starch Market Adds Value to Cassava.* Retrieved Nov 2007 from www.fao.org.
[17] März, U. (2006). *World Market for Starches/Glucose, Emphasizing Cassava.* Retrieved on http://www.bccresearch.com

cultivate cassava, utilizing unused land, and disseminating basic market information (e.g. contact list of local processors to farmers), could potential create 26,000 jobs for local people and generate US$27 million of net income. Data tables are provided below:

Overall Cassava Value Chain

Per Year	Current Situation	Potential Increase
Employment	104,750 workers	26,000 workers
Net Income (Profit)[4]	US$49.9 million	US$27 million

Cassava Farming

Per Year	Current Situation	Potential Increase
Cultivated Area	53,768 ha	20,000 ha[1]
Production Volume[2]	1,075,360 tons	400,000 tons
Employment	+100,000 workers	+20,000 workers
Net Income (Profit)[3]	US$34 million	US$13 million

Notes:

[1] Potential land available for cultivation according to provincial technical departments and local authorities in Kampong Cham
[2] Yield estimated to be 20 tons per ha
[3] Estimated based on current price level of US$50 per ton and profit margin of 64%

Cassava Flour

Per Year	Current Situation	Potential Increase
Production Volume	220,000 tons[1]	80,000 tons[2]
Employment	4,000 workers[3]	1,000 workers
Net Income (Profit)[4]	US$15 million	US$6 million

Notes:

[1] Large factories: Average annual production is 20,000 tons. 20,000 tons x 6 factories = 120,000 tons; MSME: Average annual production is 500 tons. 500 tons x 200 MSME = 100,000 tons. Data is based on statistics from technical department and interviews with local experts.
[2] Potential increase in flour production if all cassava is utilized, including potential increase in cassava production from expanding cultivated area. On average, 5 tons of fresh cassava creates 1 ton of flour.
[3] Large factories: about 1,000 workers, MSME: about 3,000 workers
[4] Estimated based on current price level of US$350 per ton and profit margin of 20%

Sagor

Per Year	Current Situation	Potential Increase
Production Volume	30,000 tons[1]	270,000 tons[2]
Employment	750 workers	5,000 workers
Net Income (Profit)[3]	US$900,000	US$8 million

Notes:

[1] MSME: Average annual production is 600 tons. 600 tons x 50 MSME = 30,000 tons. Data is based on statistics from technical department and interviews with local experts such as producers.
[2] On average, 1 ton of cassava flour can be converted into 1 ton of sagor. Current quantity of cassava flour not processed into sagor: 220,000 tons of flour – 30,000 tons of sagor = 190,000 tons. If cassava flour produces its potential of 80,000 tons per year, this can be processed into 80,000 tons of sagor. Total potential sagor production is 270,000 tons per year.
[3] Estimated based on current price level of US$400 per ton and profit margin of 7.5%

Cassava: Perceived Constraints

From the public policy consultation, local processors explained that they face the following growth constraints:

- ***Low productivity***
  - Machines are second-grade and rudimentary.
  - Labor force is difficult to find workers because people migrate to Phnom Penh. Most workers are now from migrants from Prey Veng and Svay Rieng provinces.
  - Organization of production (process of work) is not well organized, resulting in high machine downtime.
- ***Poor quality***
  - Flour contains high water contents, dirt, and high levels of acid. Producers lack technical know-how and machines to improve the quality of their products.
- ***Responsiveness to demand***
  - Lack connection and contacts to markets.
  - Lack information about markets and demand structures. Most producers do not know what customers want.
  - Supply of raw cassava limited and not reliable because high volatility of crop prices causes farmers to switch crop often. This is related to the weak market information system, which provides little perspectives on long-term situation.

All of these factors depress the price of the product. This keeps the profit of producers low, making it difficult for them to undertaken new investment.

Cassava: Possible Solutions

Some recommendations made by local stakeholders on how to remove the growth and investment constraints above are:

- Technology trade fair on processing machines
- Strengthen labor market information
- Technical assistance in organizing production system
- Technical training on how to improve and test quality of products
- Disseminate timely market information including prices of crops, demand conditions, etc.
- Training on how to cultivate cassava to make sure that the input is of good quality for processing
- Promotion of local packaging industry
- Promote market connection and network through trade fairs, show rooms and other events
- Investment promotion for cultivating cassava and for processing
- Improve access to affordable finance

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