

CHAPTER 2

Investing in Agriculture and Rural Infrastructure for Robust Economic Growth and Accelerated Poverty Reduction in Cambodia: Challenges, Prospects, and Issues for Regional Cooperation

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1. Introduction

“Besides making ourselves food sufficient, we have to strive to make Cambodia a real exporter of rice and one of the main actors in regional and world food security.”¹

Cambodia has succeeded in generating high economic growth in its recent history, but the challenge lies in sustaining that growth for an extended period of time. Almost a decade of rapid growth exerted a significant impact, with per capita income more than doubling from US\$288 in 2000 to US\$900 in 2009. As a result, Cambodia is one of the few countries to achieve sustained rapid growth. Of 194 countries with data, forty-six achieved 7 percent annual growth on average for fourteen consecutive years. From 1998 to 2007, Cambodia’s growth performance ranked sixth in the world.²

¹ Samdech Hun Sen, Cambodian Prime Minister, in a speech made on August 17, 2010.

² World Bank, *Sustaining Rapid Growth in a Challenging Environment*, February 2009.

Cambodia went through a unique window of opportunity in its recent history with the end of a decades-long conflict and the establishment of peace and political stability coinciding with a favorable external environment of rapid growth in global trade. A profound structural transformation took place with an aggressive pace of economic integration into the global economy. This transformation was facilitated by clear policies to encourage Cambodia's fast-track accession to the World Trade Organization (WTO); a shift of jobs from agriculture to manufacturing; a booming tourism sector; and migration from rural to urban areas. Cambodia's growth was fueled to some extent by some of the country's natural and agricultural assets (forests, fisheries, land) and its cultural assets, such as the Angkor Wat temples. Cambodia is a coastal country in a dynamic, rapidly evolving, and regionally integrated Southeast Asia and East Asia. As such, it presents a prime example of geography-driven regional integration since geography played, and continues to play, an influential part in Cambodia's growth.

With vast, flat, agricultural lands and access to a number of big rivers and their tributaries, Cambodia has the potential to become a significant agricultural net exporter. In order to realize the full potential of the agriculture sector, investment in basic physical infrastructure such as irrigation and rural roads are necessary. Agricultural technical support, facilitation of the trading process, and supply-chain sustainability are also important to raise productivity and trade volume. With the government's ambition to turn Cambodia into a major rice exporter, the country needs to attract investment in agriculture and rural areas from various public and private sources.

This paper aims to examine the current state of agricultural and rural infrastructure development in Cambodia through the lenses of public policy and investment, private investment, the activities of nongovernment organizations (NGOs), and the assistance provided by development partners to the agricultural sector. The paper argues that Cambodia's agricultural sector has started to attract increasing attention and investment. Increasing productivity and market expansion coupled with regional cooperation and integration are bringing Cambodia's agriculture sector to the frontline of the national economic development strategy with windows of opportunities. However, the process of infrastructure investment and development is still slow; value-chain creation and product diversification are also facing many challenges.

2. The Agricultural Development Policy of Cambodia

Aware of the significant role of agriculture in poverty reduction, the government of Cambodia has included agriculture as one of the priorities in its Rectangular Strategy. The four sides of this rectangle are: (1) improving agricultural productivity and diversification (including animal husbandry, food security and nutrition, and rural development); (2) land reform and demining; (3) fisheries reform; and (4) forestry reform (including environment protection and conservation). In the last two and a half years, the government's continuous efforts, aided by favorable weather conditions, helped arrest the depletion of natural resources and destruction of the environment; rehabilitate and enhance irrigation potential; in the diversification into cash crops; in the issuance of more land titles to farmers; and to further improve rural infrastructure. The National Strategy for Agriculture and Water 2006—10 was developed through a consultative process and adopted in 2007.³

The government's overall goal is “poverty reduction and economic growth through enhancement of agriculture sector development.” The sectoral goal is to “ensure food security, increase incomes, create employment and improve nutrition status for all people by improving productivity and diversification, and commercialization of agriculture with environmentally sound protection and food security.”

2.1. Agriculture Sector Strategic Development Plan

The Ministry of Agriculture, Fisheries, and Forestry (MAFF) prepared the Agriculture Sector Strategic Development Plan 2006—10 in October 2005 to guide the government's strategic goals as well as the National Strategic Development Plan (NSDP) 2006—10. A strategy for the agriculture and water sectors prepared by the technical working group (TWG) for agriculture and water and with the coordination of developing partners was adopted in March 2007. A sector-wide program to implement this strategy was supposed to have been finalized and approved in 2010.

³ NSDP Update 2009—2013.

The Agriculture Sector Strategic Development Plan 2006-2010 identified the following strategic objectives for the agriculture, fisheries, and forestry sectors:

- Food security, productivity, and diversification
- Improve and strengthen agricultural research and extension systems
- Market access for agricultural products
- Institutional and legislative development framework
- Land reform (land market development and pro-poor land access)
- Fisheries reform (sustainable access)
- Forestry reform (promote sustainable conservation and management of forests, ensure better management of natural protected areas)

To achieve these seven strategic objectives, MAFF organized activities in the following areas:

- Program I: Improving productivity and diversifying the agriculture sector
- Program II: Promoting market access to agriculture products
- Program III: Strengthening institutional and legal framework and human resources development
- Program IV: Managing sustainable fishery resources
- Program V: Managing sustainable forestry resources

The MAFF has made significant progress in increasing the land area for crops and paddy-cultivated areas, yield per hectare, fishing lots and areas released to fishing communities, fish catch (from all sources), forestry cover, and percentage of reforested land area. Moreover, there have been remarkable achievements in research and development (R&D) on agricultural technologies, such as: (1) high-yield, high-quality seeds; (2) land preparation methodologies; (3) effective use of green manure residuals; (4) land fertility management and use of organic fertilizers; (5) identification of types of pests and the damage they can do as well as correcting misconceptions about pests and pest-control measures; and (6) seed-storage methodologies and timing of harvest and seed drying. From 2006 to 2009, key laws and regulations were put in place to further develop this sector. These include the following:

- Law on Plant Seed Management and Plant Breeder Rights

- Sub-decree on Phytosanitary Inspection
- Sub-decree on Establishment and Management for Village Animal Health Workers (VAHWs)
- Sub-decree on the Sanitary Inspection of Animals and Animal Products
- Sub-decree on Abattoir Management and Meat and Animal Product Inspection
- Law on Fishery
- Sub-decree on Community Fisheries Management
- Sub-decree on Endangered Fishery Product
- Sub-decree on the Legal Procedures on Investments, Public Bidding, Contractual Leasing, and Payment of Fishing Fees
- Sub-decree on the Appointment of the Composition of the National Authority for Resolving Land Conflict
- Sub-decree on the International Trading of Endangered Wildlife and Wild-plants Species
- Sub-decree on the Establishment and Functioning of the General Secretariat of the National Authority for Resolving Land Conflict
- Sub-decree on Forest and Non-Timber Forest Products Permitted for Import-Export
- Sub-decree on Permanent Forest Reserve Classification, Transferring, and Conferring of Tenure Rights in Dom Rei Phong Area in Trapeang Pleang Commune of Chhouk District and Stung Keo Commune of Kampot District in Kampot Province
- Sub-decree on the Establishment of Control and Conservation Areas of Bird Sanctuaries for Sarus Cranes and Other Birds in Boeng Prek Lopoeuv of Borei Cholosar and Koh Andet Districts in Takeo Province
- Sub-decree on Detaching of Land Areas from Protected Forest Areas for Conservation of Genetic Resources of Wild-plants and Wildlife in Mondulkiri Province
- Sub-decree on Rules of Conferring of Rights to Use State Forestlands for Tree Planting
- Sub-decree on Transforming MAFF's General Directorates to General Secretariats; Upgrading Forestry and Fishery Administrations to General Directorate Levels; Upgrading the Department for Agronomy and Improving Agricultural Lands to General Directorate of Agriculture; and Transforming the General Directorate of Rubber Plantation to a MAFF General Directorate

- Sub-decree on the Establishment of Protected Forest Areas for Recreation and Hunting Sport in Oya Dav, Ratanakiri Province
- Sub-decree on the Establishment and Conservation of “Sei Ma” Protected-Forest and Biodiversity Areas of Mondulkiri and Kratie Provinces

Besides contributing to the increase in crop productivity, the technologies mentioned earlier have also contributed to the diversification of cropping systems by allowing farmers to shift from monoculture rice cropping to multiple cropping systems and animal husbandry. This was facilitated by the identification of appropriate soil types, timing, and crop-planting methods before and after the wet-season rice cropping as well as crop-rotation patterns in upland areas. Moreover, the MAFF has conserved 2,557 accessions of rice germplasm and identified rice varieties that are resistant to flood, drought, and the brown planthopper (BPH). It has also conserved the germplasm of other crops such as bananas, cassavas, chillies, and papayas, among others, in order to ensure the sustainable use of natural resources in Cambodia. In addition, the transfer of these technologies has been promoted through improved linkages between research and extension in the form of human resource-capacity development, including short and medium training courses, field demonstrations, workshops, seminars, and conferences.

Overall agricultural production increased from 2006 to 2008 aided by favorable weather conditions and the efforts of concerned institutions to change farmers’ practices in crop farming, crop preservation, and harvesting and to increase irrigation capacity. The growth rate of the agriculture sector was 5.5 percent in 2006, 5.0 percent in 2007, and 5.7 percent in 2008. In 2008, the total cultivated land area was 2.61 million hectares. This translated to about 7.15 million metric tons of paddy rice, resulting in an average yield of 2.74 tons of rice per hectare and a surplus of 2.02 million metric tons of milled rice (see table 2.1).

Livestock production moderately increased from 2004 to 2008 while the number of cattle raised increased by 2.5 percent on average per year. The number of pigs raised declined from 2.42 million heads in 2004 to 2.21 million heads in 2008 due to an increase in the inflow of pigs and other pig-related products from neighboring countries. On the whole, however, the animal husbandry subsector’s contribution to the economy has steadily increased and currently accounts

for about 4 percent of GDP. This subsector needs to grow in order to meet local needs for improved nutrition and to supply the tourism industry. The top priorities of MAFF include: (1) the development of a legal and regulatory framework as well as human resources; (2) the reduction of animal morbidity and mortality rates; (3) the improvement of public health, particularly in relation to zoonotic diseases and food safety; (4) promotion of animal feed production; (5) improvement of the quality of animal breeding stocks; (6) promotion of the use of animal manure for biogas production; (7) enhancement and strengthening research and extension programs on livestock production and veterinary activities; (8) improvement of credit services for livestock production; (9) promotion of investments in livestock production and veterinary activities; and (10) promotion of markets for animals and animal-originated products.

Notwithstanding the significant progress that has been made, a number of challenges remain, such as the need to:

- increase productivity in rice and other crops; increase and improve access to extension services, credit, and inputs; increase irrigation; ensure better benefits for farmers through marketing; address farmers' inadequate knowledge on the use of agricultural inputs and techniques and soil improvement;
- develop appropriate legal and regulatory tools and law-enforcement capacity for the monitoring and control of agricultural inputs and the management of soil and soil fertility (e.g., An example of a legal tool is the Law on Agricultural Lands, which defines the land areas to be targeted for agricultural production and proper soil fertility management.);
- improve postharvest management; promote export and domestic markets for agricultural products (including rice and not merely paddy rice, fruits, and vegetables); promote agro-industry, including postharvest processing; improve the quality standards of agricultural products; organize farmers' organizations for better bargaining power; aim for optimum use of land and other resources; and encourage and increase private sector investments and participation;
- establish mechanisms at the local level to provide techniques and services to farmers; promote an agricultural extension program at the local level; and promote the concept and formations of farmers as effective partners of the private sector.

Livestock production in Cambodia has been adversely affected due to:

- repeated threats from pandemics of severe animal diseases, particularly HPAI and H1N1, and from natural disasters such as typhoons (e.g., the devastating Ketsana typhoon of 2009), which typically cause serious loss of life (both human and animals) and resources (e.g., crops, infrastructure, houses, etc.);
- limited resources for the prevention of the spread of severe animal diseases and for animal health care and protection;
- the reluctance of some investors to invest in livestock production after the occurrence of HPAI and the effects of certain animal products imported from neighboring countries;
- the lack of market competition for meat and animal feeds, resulting in the high cost of animal feeds;
- Inadequate and ineffective implementation of laws and regulations pertaining to this particular subsector.

2.2. From food self-sufficiency to food export

Cambodia developed its economy based on agriculture as a core sector. After emerging from, and surviving, the Khmer Rouge regime in 1979, the country had to produce enough food to feed its population. Later, it started to ensure self-sufficiency in food and food security. The basic policies for the development of the agricultural, forestry, and fisheries sectors from 2001 to 2005 were:

- to continue to focus on food security, especially at community and household levels, and reduce the high poverty rate in the agricultural sector; to increase food production, especially the production of rice and subsidiary crops;
- to contribute to the growth of the national economy through the export of surplus agricultural products;
- to improve the quality of agricultural products and increase value added by promoting the development of agro-industrial processing, including the creation of new jobs for rural areas;
- to increase family income and reduce poverty by diversifying crop production, ensuring high yields, and keeping production costs low;

- to manage natural resources through regulation and technical measures that will ensure sustainable use.

Table 2.1: Main Agriculture Statistics

	Unit	2008	2009	2010	2011	2012	2013
Land under crops	000 ha	596	645	774	930	1000	1000
Irrigated land area	000 ha	1120	1145	1170	1195	1220	1245
Paddy: cultivated area	000,000ha	2.61	2.63	2.65	2.65	2.65	2.65
Yield per hectare (rice)	tons	2.74	2.77	2.8	2.83	2.87	3
Fishing Lots	sq. km	415	415	415	415	415	415
Released to Community Fishing	%	56.4	56.4	56.4	56.4	56.4	56.4
Fish Catch (from all sources)	tons	471	515	617	668	726	788
Forestry Cover	% of land area	59	57.59	57.99	58.39	58.79	59.19
Reforested (cumulative total from 1985)	ha	10.81	18.92	73	73	73	73
Fuel Wood Dependency	% of households	73	67	61	59	56	54
Forest Demarcation	m	321	228	413	500	500	500
Forestry Communities	no.	124	210	350	400	405	450

Source: NSDP Update 2009—13.

Table 2.2: Paddy Cultivation in Cambodia

Year	Paddy area (000 ha)	Production (000 ton)
2000	2,158	4,041
2001	2,241	4,099
2002	2,013	3,823
2003	2,314	4,170
2005	2,438	5,986
2006	2,541	6,264
2007	2,5886	6,727

Source: Ministry of Water Resources and Meteorology, “Irrigation Development in Cambodia,” (2010).

3. Investing in Agriculture

3.1. Government Investment in Agriculture

It should be noted that investment in agriculture requires a huge amount of money to get a positive impact. Cambodia has a small annual budget, about half of which is financed by external assistance. Hence, government investment in agriculture is limited due to budget constraints. Total budget disbursements in 2009 were US\$989.5 million, an annual increase of 3.5 percent and equivalent to 9 percent of Gross Domestic Product (GDP). Grant support accounted for approximately two-thirds of total disbursements. Japan remains the largest single source of development assistance, disbursing US\$148.4 million in 2009, an 18 percent increase from the previous year. China provided support of US\$114.7 million to the infrastructure sector, which represents 13 percent of total aid and an annual increase of 20 percent.

Significant funds continue to be allocated to the social sectors, with the combined share of health, HIV/AIDS, and education support representing more than 30 percent of all assistance in 2009. The transportation sector recorded a significant increase, with support rising by 20 percent in 2009 to become the largest aid-supported sector. The agriculture sector also received an annual increase of nearly 60 percent, rising to US\$91.2 million or 9.2 percent of the total. Rural development got only US\$62 million or 6.2 percent of the budget.⁴

The financial sources for agricultural development are the national budget, foreign assistance, NGOs, and the private sector. Public investment program from 2001 to 2003 allocated for agriculture was US\$210 million and investment in the sector, as stated in the Second Social Economic Development Plan (SEDP II), was US\$500 million. In the Agricultural Sector Strategic Development Plan 2006—10, MAFF proposed the main prioritized programs/projects by sector and subsector with a budget package of US\$153.27 million.⁵

⁴ According to the Aid Effectiveness Report 2010.

⁵ MAFF 2005, 31.

Even with its limited budget, the government invested in agricultural R&D. The Cambodia Agriculture and Development Institute (CARDI) was established in 1999 to promote agricultural R&D, with special focus on rice. Donor funds are also used to promote CARDI activities (see box).

Box 3.1: Investing in R&D in Agriculture: The Case of CARDI

The Cambodian Agricultural Research and Development Institute (CARDI) was officially established as a semiautonomous institute with a professional staff of over 40 employees, experts, and researchers. Although CARDI's history may seem somewhat recent, it has, in fact, evolved from the 12-year, AusAID- funded Cambodia-IRRI-Australia Project (CIAP) and the purchase of 70 hectares of land at the Prateah Lang Commune in Dangkor District, 20 kilometers south of Phnom Penh. CARDI's studies focus on soil and water, socioeconomic science, plant breeding, agronomy and farming, agricultural engineering, and plant protection.

CARDI's mission of "Technology for Prosperity" is based on an analysis of how the agricultural sector in Cambodia is expected to evolve in the future. CARDI's vision of how it will respond to the future operational environment and achieve its mission has the following features:

- Assist the Royal Government of Cambodia (RGC) in achieving its rural development objectives;
- Focus on applying technology with major impact on poverty alleviation and living standards;
- Deliver high quality, highly valued R&D services;
- Work in partnership with extension, NGOs, and private sector agencies to increase the impact of improved technologies;
- Improve its capacity to deliver quality R&D services that meet client needs;
- Apply a businesslike approach to its operation; and
- Promote the impact and value of research for the development of Cambodia.

CARDI inherited an ongoing research program from CIAP involving rice production. It has already started broadening the base of its research programs to include other agricultural commodities. While CARDI recognizes that diversification of its research portfolio is a key step in assisting the RGC achieve its rural development objectives, the precise nature of CARDI's future research portfolio will be determined through a national agriculture research priority setting and funding process.

Aside from the diversification of CARDI's research profile into other crops, the focus may shift from yield to an increased emphasis on quality, including postharvest technology and practices. CARDI could well become a key provider of national priority research, contract research, technology packaging, training, consultancy, and quality seeds in Cambodia and abroad. Working towards that point, CARDI has already adopted a partnership approach to enhance its ability to provide the range and quality of agricultural R&D services required for the future.

Though agriculture and rural development are classified as priority areas, public investment in these sectors is still very low. According to the Public Investment Programme (PIP) 2010—12, the government planned to invest only 13 percent of the fund in agriculture.⁶

The government's National Poverty Reduction Strategy (NPRS) 2003—05 recognizes the need to deepen and accelerate reforms and to focus limited resources on four pillars: agriculture and rural development, education, health, and infrastructure. Although both the government's SEDP II and NPRS have identified general priorities for the rural sector, more work is needed to develop concrete programs to revitalize the rural economy. To maximize impact, these plans need to start with a clearer and more strategic articulation of priority actions that link reforms and investments to available resources, improve the focus on outcomes and results, and strengthen the coordination among stakeholders.⁷

Rural infrastructure in Cambodia was developed gradually. The Ministry of Rural Development and other government agencies, in cooperation with the private sector, built roads, health centers, pagodas, and schools; dug water wells for drinking water, and provided education on primary health care, among other interventions (see table 3.1).

⁶ Public Investment Programme (PIP) 2010—2012.

⁷ World Bank 2005.

Table 3.1: Main Statistics for Rural Development

	Unit	2008	2009	2010	2011	2012	2013
Rehabilitated roads (of total 28,000 km)	km	24,140	25,658	26,658	27,658	28,658	29,658
Access to improved drinking water (rural areas)	% of pop.	40.49	41.99	43.49	44.99	46.49	47.69

Source: NSDP Update 2009—13.

Water is a critical natural resource. The appropriate use and management of water are key for rural development and poverty reduction in five ways: (1) as a key input to agricultural production to improve rural livelihoods, ensure food security, and promote better nutrition; (2) as the single most important source of hazard risk in the extremes of its availability (e.g., droughts and floods); (3) when safe or potable (e.g., for drinking, sanitation, bathing, and other domestic uses), it reduces the risk of contracting water-borne diseases and, in turn, reduces related costs of health care and the amount of time lost for work or school due to illness; (4) as the basis of the aquatic ecosystem, it helps sustain fisheries production; and (5) as an important mode of transportation for people and goods, particularly in isolated areas during the wet season.⁸

Cambodia has abundant water resources. It receives an estimated annual runoff of 475 billion cubic meters (BCM) from the Mekong system, which drains over 85 percent of the country. However, rainfall is concentrated within the six-month wet season, and there is very little reservoir storage to capture and regulate wet-season runoff. During the six dry months, evapotranspiration far exceeds rainfall and river levels drop significantly, resulting in limited available surface water resources outside of the Mekong River mainstream and Tonle Sap. Floods are an annual occurrence and are virtually unmanaged, except for a dike that protects Phnom Penh. The floods benefit the plain by replenishing soil nutrients and moisture and dispersing fish for spawning. However, they also damage infrastructure, crops, and personal property as well as cause costly restrictions to economic and other activities. Groundwater resources are estimated to

⁸ World Bank, Cambodia Rural Sector Strategy Note: Towards a Strategy for Rural Growth and Poverty Reduction, Report No. 32784-KH (Washington DC: World Bank, 2005).

be approximately 20 billion cubic meters overall, but the groundwater actually available for potential use is geographically uneven and is mostly uninvestigated and untapped. In many areas, aquifers are complexly layered. Furthermore, high arsenic levels are a serious problem in some areas near the Mekong mainstream.

As shown in table 3.3, Cambodia has many irrigation networks for agriculture, especially rice cultivation. Due to the lack of maintenance and natural causes, many irrigation systems have been abandoned and damaged. Some of them have been repaired by the government and the private sector.

Climate change and deforestation contribute to more frequent natural disasters in Cambodia. Drought and lack of water is the main concern for farmers. “I am concerned about not having enough water to supply to my rice seedlings this year ... because of drought and a lack of irrigation systems,” said Kuch Veng, a farmer from Krakor district in Pursat province. Tan Soksan, a farmer in Kampong Chhnang’s Rolea Phear district, agreed that it had been difficult to grow rice in 2010 due to water shortages. “I and other farmers in my village have serious concerns about the lack of rains,” he said, “and some rice crops have died due to lack of water.”⁹

Having seen the link between rural development and water resources, the government has made it a point to invest annually in these sectors. However, due to budget constraints, public investment in said sectors is still very low. As table 3.2 shows, only 10.54 percent of public investment was allocated to rural development and only about 4 percent to water and sanitation in the Public Investment Programme (PIP) 2010- 2012.

Table 3.2: Public Investment Program 2010—2012 (US\$ thousands)

Sectors	Amount	%
Social Sectors		
Health	667,161	18.13
Education	497,446	13.52
<i>Subtotal</i>	1,164,607	31.65

⁹ Ministry of Agriculture, Forestry and Fisheries, <http://www.maff.gov.kh/en/>

Economic Sectors		
Agriculture & Land Management	434,904	11.82
Crops	223,045	6.06
Noncrops	211,859	5.76
Rural Development	387,968	10.54
Manufacturing, Mining, and Trade	76,208	2.07
<i>Subtotal</i>	899,080	24.43
Infrastructure		
Transport	725,254	19.71
Water & Sanitation	146,315	3.98
Power and Electricity	155,259	4.22
Post and Telecommunication	87,419	2.38
<i>Subtotal</i>	1,114,247	30.28
Services and Cross-Sectoral		
Gender Mainstreaming	4,675	0.13
Tourism	41,336	1.12
Environment and Conservation	95,277	2.59
Community and Social Services	76,950	2.09
Culture and Fine Arts	31,509	0.86
Capacity Building, Governance and Administration	252,385	6.86
<i>Subtotal</i>	502,066	13.64
Grand Total	3,680,000	100.00%

Source: PIP 2010—2012. from <http://www.mop.gov.kh/Home/PIP/tabid/155/Default.aspx>

Table 3.3: Number of Irrigation Systems and Area, By Province

No	Province	Irrigation System	
		Number	Area (ha)
1	Banteay Meanchey	125	35,576
2	Battambang	60	59,292
3	Kampong Cham	340	85,277
4	Kampong Chhnang	134	48,940
5	Kampong Speu	107	23,845
6	Kompong Thom	204	77,162
7	Kampot	75	69,707
8	Kandal	252	68,927
9	Koh Kong	13	5,307
10	Kratie	169	9,235
11	Mondul Kiri	18	3,001
12	Phnom Penh	10	6,328
13	Preah Vihear	94	30,366
14	Prey Veng	241	71,221
15	Pursat	64	25,435
16	Ratanak Kiri	32	6,997
17	Siem Reap	224	122,203
18	Sihanoukville	20	15,530
19	Stung Treng	25	5,693
20	Svay Rieng	43	102,256
21	Takeo	114	121,295
22	Oddor Meanchey	29	48,364
23	Kep	9	3,786
24	Pailin	1	520
	Total	2,403	1,046,263

Source: Ministry of Water Resources and Meteorology 2004.

Irrigation works with national budget (completed in 2008)

- rehabilitation/construction of irrigation systems for 328,305 ha
- repair of 794 small ponds (reservoirs) with dike length of 377 km by farmer participation
- repair of 1,266 canals with total length of 2,256 km by farmer participation
- rehabilitation of 270 gates, 377 culverts, 90 check structures, 29 spillways
- installation of new 12 pumping stations and repair of 78 pumping machines

Table 3.4: Foreign-Funded Irrigation Projects Completed in 2009

Irrigation Project Profile Number	Project Name/Title	Donor	Remarks
16-1	Colmatage Irrigation Rehabilitation Project (2,122 ha)	Japan	Completed in 2002
17-1	Stung Chinit Irrigation and Rural Infrastructure Project (3,000 ha)	ADB and AFD	Completed in 2008
24-1	Integrated Development in Battambang Province (1,950 ha)	FAO	Completed in 2008
27-1	Bassac Dam Rehabilitation Project in Battambang Province (20,000 ha)	Japan	Completed in 2006
34-1	Rehabilitation of the Kandal Stung Irrigation System in the Lower Prek Thnot Basin (1,950 ha)	Japan	Completed in 2007
MP-1	Study on Comprehensive Agricultural Development of Prek Thnot River Basin (River Basin No. 34)	Japan	Completed in 2005
MP-2	River Basin and Water Use Study for Northwest Irrigation Sector Project (River Basin No. 24)	ADB+AFD	Completed in 2006
MP-3	Master Plan on Water Resources Development in Cambodia (all 42 river basins)	Korea	Completed in 2008
MP-4	The Basin-Wide Basic Irrigation and Drainage Master Plan Study in the Kingdom of Cambodia (River Basin No 26, 27, 28,29)	Japan	Completed in 2009

Source: Ministry of Water Resources and Meteorology (March 2010). Irrigation development in Cambodia.

3.2. Private Sector Investment in Agriculture

Cambodia's private sector has grown rapidly with strong policy support from the government. It has been very active in investing in all sectors, including agriculture, for many reasons, one of which, obviously, is the profit they can gain from such investments. The number of local and foreign agricultural and agro-industrial companies is also rapidly increasing. Farmers in some areas have started using modern techniques and mechanization in farming, harvesting, milling, and storage. The government has also encouraged foreign direct investment (FDI) in the agriculture sector by providing an incentive package to investors. However, FDI in the sector is

still very low due to many constraints. According to Council for the Development of Cambodia (CDC), FDI in the agriculture sector accounts for only about 5 percent of total FDI.¹⁰

The CDC recently approved agricultural investment projects worth more than US\$230 million, involving rubber, palm oil, and sugar production and processing.¹¹ China's Yellow Field International Ltd and Great Field International are planning to invest US\$74.6 million and US\$66.4 million, respectively, to grow sugar cane and other crops. Viet Nam is planning to invest in two rubber plantations and processing factories. A Malaysian company is investing in a palm oil plantation. The United States-based Horizon Agriculture Development and Singapore and Malaysia's Mondul Agri Resources plan to invest \$28.8 million and \$30 million, respectively, to grow rubber trees.

Cambodia is an ideal location for investors looking to grow and process crops as it has plenty of land available for agricultural concessions. From 1993 to 2009, a total of 126 companies were granted land concessions for crop production, according to a report from the MAFF. Specifically, concessions for this period amounted to 1,335,724 hectares in sixteen provinces.

Cambodia is rich in farmland and keen to develop its rice exports. It therefore welcomes investors, especially those willing to work with small farmers. In return for investments such as credit and technical assistance, farmers would be contracted to sell their crops to the investor.

The private sector is also providing microcredit to farmers to buy fertilizers and other inputs for farming and irrigation. Capital, however, remains a big stumbling block for rice entrepreneurs. Lim Bun Heng, president of rice processors, and exporter Loran Import-Export Co. talked to Phnom Penh Post on December 21, 2010. They said, "We have seen that local rice growers and millers are likely to not have enough capital to buy the remaining rice during harvest season because most of them have insufficient capital. Given this lack of capital, we are able to buy only

¹⁰ Chap and Chheang 2010, 17.

¹¹ Investing in Cambodia Magazine, accessed January 26, 2011, <http://www.investincambodia.com/agriculture.htm>.

a small quantity of [unhusked] rice compared with outside merchants from neighboring countries like Thailand and Vietnam.”¹²

Many FDI projects involve contract farming and economic land concessions. However, some concessions are not successful for various reasons, such as land speculation and conflict with the local people about the land. As of April 2010, the MAFF has requested the government to cancel the contracts of 41 companies with a combined concession land area of 379,034 ha. At the present, there are 85 contracted and validated companies covering a total land area of 956,690 ha located in sixteen provinces.¹³

The private sector is also providing microcredit for farmers to help them buy fertilizers and other inputs for farming and irrigation.

Box 3.2: Soma Farm

Soma Farm in Bati District, Takeo province, was created to be part of an agricultural development program. Today, its focus has gone beyond that and into agritourism by paving the way for sustainable tourist development and multiple activities in rural areas. Soma Farm is a locally owned and -operated company that grows and sells (on wholesale basis) cattle, chickens, chicken eggs, fish, jackfruits, coconuts, mangoes, vegetables, paddy rice, paddy-rice seeds, and polished rice. The company seeks to enhance local agricultural production while emphasizing quality at the same time. The farm covers over 300 hectares of crop plantations, livestock farms, and orchid farms. The pilot rice field at Kirivong district with an approximate area of 350 hectares is used to grow paddy seeds and paddy rice using modern techniques. It also produces high-quality perfume rice as a showcase for farmers in the areas. Soma Farm is a Khmer company and a member of the One Village One Product (OVOP) program.

Source: *Soma Farm Co., Ltd brochure, www.somagroup.com.kh.*

¹² Phnom Penh Post, December 21, 2010

¹³ MAFF, accessed March 12, 2011, <http://www.elc.maff.gov.kh/overview.html>.

3.3. NGO Investment in Agriculture

With about 2,000 local and international NGOs operating in many areas in the country, Cambodia is considered “NGO heaven.” As a stakeholder in the country’s development, NGOs have been playing significant roles in the development process and in poverty reduction. They are not only the catalysts for democratization and governance but also a bridge linking the public and private sectors.¹⁴

A number of civil-society organizations focus their activities on rural development, rural credit, small-business initiatives, health promotion, and technical know-how in agriculture and handicrafts while others have expanded to advocacy of democracy, human rights, capacity building and education in governance, and legal framework, among other concerns. The work of NGOs at the grassroots level; the think tanks in R&D; and the media disseminating information, technology, and education all play a big impact on the process of economic development in Cambodia. There are also many NGOs in Cambodia investing in agricultural development, CEDAC being one of the successful ones (see box 3.4).

Box 3.3: CEDAC (Centre d’Etude et de Développement Agricole Cambodgien)

Established in August 1997, CEDAC (Cambodian Center for Study and Development in Agriculture) envisions a Cambodian society where small farming households enjoy good living conditions and strong mutual cooperation, with the right and the power to determine their own destiny, and the ability to play an important role in supplying healthy food for the whole society. CEDAC was established with initial support from the French NGO Group for Research and Exchange of Technology (GRET). In the beginning, CEDAC had only seven staff to support farmers in two villages in Kandal province. As of November 2010, CEDAC had 297 staff, including 95 women (263 of whom, or 88.55 percent, work as technical staff and another 34, or 11.45 percent, work as administrative/supporting staff) providing direct assistance to about 124,000 families from 3,471 villages, 609 communes, and 101 districts in twenty provinces of

¹⁴ Chap 2006.

Cambodia. More than 700 students and more than 4,000 rural development practitioners have benefitted from CEDAC's training and exchange program. More than 100 community, national, international, and multilateral organizations and foreign government agencies have cooperated with CEDAC during its twelve years of operation.

Source: CEDAC, www.cedac.org.kh.

3.4. Agricultural Support from Donor Communities

International donor agencies have supported Cambodia's agricultural development through different programs and projects. The Japan International Cooperation Agency (JICA) cooperates with MAFF on the "Agricultural Productivity Promotion Project in the West Tonle Sap" (APP Project). This project focuses mainly on productivity improvement and the marketing of agricultural products in the West Tonle Sap region through the provision of technical support to the provincial departments of agriculture in Battambang, Pursat, and Kampong Chhnang provinces. JICA has been implementing another technical cooperation project in the same region since September 2009. This particular project targets the improvement of agricultural river basin management by developing the capability of engineers in the Technical Service Center (TSC) of the Ministry of Water Resources and Meteorology.

Australia, under AusAID, started implementing the Cambodia Agricultural Value Chain Project (CAVAC) in 2009. The project, which will run until 2013, aims to deliver practical benefits, including improved food security, increased income, and reduced vulnerability of poor farmers engaged in rice-based farming systems. The project will promote market-oriented agricultural development and product diversification, with an initial focus on the production of rice, vegetables, and fruits in three provinces—Kampong Thom, Takeo, and Kampot. The program may be expanded to other provinces and value chains in the future.

With funding from the European Union (EU), the second package of €6.9 million (about US\$10 million) was awarded to three NGOs (Gret, ZOA, and Helen Keller International) and an international development agency (Deutsche Gesellschaft für Technische Zusammenarbeit GmbH or the GTZ) to implement a food security project starting 2010. **Gret** uses the funds to

improve the economic and nutritional situation of 15,000 family-scale farms and to increase the resilience of farming families in withstanding distressing situations. It does this by providing safety net mechanisms (e.g., rice banks, health insurance) in ten provinces—Battambang, Kampot, Kampong Cham, Kampong Speu, Prey Veng, Siem Reap, Svay Rieng, Takeo, Kandal, and Kampong Thom. EU contribution is over €1.9 million for one and a half years. **ZOA** works to improve access of 3,500 families to irrigation and agricultural inputs. In addition, it will build ten rice-seed stores and help 500 semiurban, land-poor families develop income-generating activities in Oddar Meanchey province (€1.25 million for one and a half years). **Helen Keller International** received a grant (more than €1.7 million for nearly two years) to use in improving the food security and livelihoods of 6,000 vulnerable farming households in Prey Veng and Pursat provinces. **GTZ** received EU support of €2 million for about two years and is working to improve food security and access to essential services of poor households in the rural areas of Cambodia. To achieve this, it is developing more efficient mechanisms for targeting poor households to support the rapid implementation of poverty-alleviation measures and the delivery of specific services and assistance.

The United States Government, through the United States Agency for International Development (USAID), has awarded a five-year, multimillion dollar contract designed to improve Cambodia's food security through enhanced agricultural development and better management of natural resources. The five-year contract was awarded to Fintrac, a United States-based agribusiness consulting firm that develops agricultural solutions to end hunger and poverty. The project, "Helping Address Rural Vulnerabilities and Ecosystems Stability" (HARVEST), will harness the cooperation of public and private entities and civil society to strengthen food security through the following means: increasing agricultural productivity; raising the incomes of the rural poor; preparing the country to adapt to climate change; and reducing the number of Cambodians, especially women and children, suffering from malnutrition. The interventions will be designed in close coordination with the government, with local stakeholders, and with other development partners in order to maximize the collective impact of sustainably reducing hunger and poverty. A "focus on food" approach to rural income diversification and value-chain strengthening will help the Cambodian agricultural sector become a major contributor to stable and sustainable economic growth for Cambodia and the region. The improved management of land and other

resources will conserve and maintain the economic value of Cambodia's sensitive ecosystems and rich biodiversity as well as reduce the vulnerability of agriculture and rural communities to climate change. Permanently reducing hunger and maintaining the sustainable use of natural and communal resources are the central goals of HARVEST.

4. Regional Cooperation in Agricultural Development

Cambodia's economic growth has been strongly driven by external factors—namely, globalization and the regionalization process. Being part of the ASEAN since 1999 and the WTO since 2004 provides Cambodia with opportunities to expand its market to the region and the world. Most FDI in Cambodia focuses on the external market.

With the state leadership emphasizing agricultural development, domestic and international private companies have stepped up investments in agro-industry and business. Land concessions have been developed to attract large-scale investors. Domestic rice-exporting companies are mushrooming to explore markets in Europe, the United States, and China.

Regional cooperation in Southeast Asia and the Mekong region has helped provide a more favorable condition for regional policy coordination and joint development of the agricultural sector. The ASEAN Free Trade Area (FTA) and the Greater Mekong Subregion (GMS) cooperation scheme laid the foundation for better trade and infrastructure connectivity in the region. The cost reduction in production and transportation also help increase the competitiveness of agricultural products in entering larger regional markets like China and continental markets in Europe and the Americas.

Regional cooperation in agricultural development engendered by the ASEAN and the GMS scheme has benefitted member countries, especially those exporting mainly agricultural products. Regional cooperation and integration can also help Cambodia further develop its agriculture sector and improve its exports through policy coordination, better access to market information, and better infrastructure and institutional connectivity.

4.1. ASEAN regional cooperation

The food, agriculture, and forestry sectors were given special attention in the ASEAN Economic Community Blueprint:

1. Enhance intra- and extra-ASEAN trade and the long-term competitiveness of ASEAN's food, agriculture, and forestry products/commodities.

Actions:

- Monitor the implementation of the Common Effective Preferential Tariff (CEPT)-AFTA schemes for agricultural and forest products;
- Develop and apply fisheries quality-management systems that ensure food safety and support the competitive position of ASEAN fisheries products on world markets. This is to be achieved through: (1) the implementation, validation, and verification of the Hazard Analysis Critical Control Point (HACCP)-based systems and improved laboratory practices and (2) the adaptation of quality and safety management systems that can be applied to small enterprises in the ASEAN by 2009;
- Establish Good Agriculture / Aquaculture Practices (GAP), Good Animal Husbandry Practices (GAHP), Good Hygiene Practices (GHP), Good Manufacturing Practices (GMP), and HACCP-based systems for agricultural and food products with significant trade / trade potential by 2012;
- Harmonize the quarantine and inspection/sampling procedure by 2010 and the sanitary and phytosanitary (SPS) measures for agricultural, food, and forestry products with significant trade / trade potential in accordance with international standards/guidelines, where applicable, by 2015;
- Harmonize the Maximum Residue Limits (MRLs) of commonly used pesticides for widely traded crop products in accordance with international standards/guidelines, where applicable, by 2010;
- Harmonize the regulatory framework for agricultural products derived from modern biotechnology in accordance with international standards/guidelines, where applicable, by 2015;

- Harmonize the safety and quality standards for horticultural produce and agricultural products of economic importance in the ASEAN region in accordance with international standards/guidelines, where applicable, by 2015;
- Harmonize animal (both terrestrial and aquatic) health control measures for the safety of food of animal origin through common biosecurity management standards scheme in accordance with international standards/guidelines, where applicable, by 2015;
- Harmonize guidelines for the use of chemicals in aquaculture and measures to eliminate the use of harmful chemicals in accordance with international standards/guidelines, where applicable, by 2009; and
- Develop a regional reference framework on a phased approach to forest certification by 2015.

2. Promote cooperation, joint approaches, and technology transfer among ASEAN member countries and international and regional organizations as well as the private sector.

Actions:

- Develop joint strategies / positions on issues of related interest to ASEAN with international organizations such as the WTO, the Food and Agriculture Organization of the United Nations (FAO), World Organisation for Animal Health (OIE), International Plant Protection Convention (IPPC), CODEX Alimentarius, Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and dialogue partners;
- Promote collaborative research and technology transfer in agriculture, food, and forestry products;
- Establish strategic alliances and joint approaches with the private sector in promoting food safety, investments, joint venture opportunities, agricultural products, and market access;
- Strengthen efforts to combat illegal logging and its associated trade and forest fires and their resultant effects; and
- Strengthen efforts to combat illegal fishing.

3. Promote ASEAN agricultural cooperatives as a means to empower and enhance market access of agricultural products, build a network mechanism linking agricultural cooperatives, and fulfill the purpose of agricultural cooperatives for the benefit of farmers in the region.

Actions:

- Strengthen the strategic alliance among agricultural cooperatives in the ASEAN through bilateral, regional, and multilateral cooperation;
- Establish business linkages among agricultural cooperatives within the ASEAN; and
- Promote direct investment and strategic partnership with ASEAN agricultural cooperatives, producers, consumers, and traders.

Agriculture is one of the main industries in the Southeast Asian region, the world's leading rice producer. Thailand and Viet Nam alone account for more than half of the global rice trade, collectively producing about 30 million tons of milled rice a year. In 2010, ASEAN member countries produced 155.5 million metric tons of rice, 3.6 percent higher than that produced in 2009. The increase in the rice supply in 2010 was due mainly to the greater volume of stocks carried over from previous year.¹⁵

So far, ASEAN member countries have adopted and implemented various cooperation projects on agriculture and food security. Agreements on agriculture adopted by ASEAN leaders include Agreement on the ASEAN Food Security Reserve in 1979; Declaration on Objectives regarding the ASEAN Agriculture Development Planning Center in 1980; ASEAN Declaration on Specific Animal Disease Free Zone in 1981; ASEAN Declaration to Eradicate Foot and Mouth Disease in 1981; ASEAN Ministerial Understanding on the Standardization of Import and Quarantine Regulation on Animal and Animal Products in 1982; ASEAN Ministerial Understanding on Fisheries Cooperation in 1983; ASEAN Ministerial Understanding on ASEAN Cooperation in Agricultural Cooperatives in 1984; ASEAN Ministerial Understanding on Plant Pest Free Zone in 1984; Ministerial Understanding on ASEAN Cooperation and Joint Approaches in Agriculture and Forest Products Promotion Scheme in 1994; Program of Action for ASEAN Cooperation in Food, Agriculture, and Forestry 1995-1999; Memorandum of Understanding on ASEAN Sea

¹⁵ ASEAN Agricultural Commodity Outlook 2010, http://afsis.oae.go.th/ACO_No_4_report.pdf

Turtle Conservation and Protection in 1997, Agreement for the Establishment of ASEAN Animal Health Trust Fund in 2006; and ASEAN Statement on Strengthening Forest Law Enforcement and Governance in 2007.¹⁶ In addition, the ASEAN ministers of agriculture and forestry convene an annual meeting to discuss and issue a joint statement on agricultural development concerns. At the 32nd meeting in 2010 in Cambodia, the ministers reaffirmed the role and progress of agriculture in the realization of the ASEAN Community and the Millennium Development Goals (MDGs).

The sharp increase in international food prices in 2007—08 brought serious concerns on the possible socioeconomic impacts of such price hikes on ASEAN member countries. Cooperation among ASEAN member countries is needed to address the problem, especially by strengthening existing ASEAN initiative/measures. To address the issue of long-term food security in the ASEAN region, the ASEAN Integrated Food Security (AIFS) Framework for 2009—13 was developed to provide scope and joint pragmatic approaches for cooperation among ASEAN member countries. The goal of the Strategic Plan of Action on Food Security (SPA-FS) is to ensure long-term food security and to improve the livelihoods of farmers in the ASEAN region. The following objectives are meant to help to achieve that goal:

- a) increase food production
- b) reduce postharvest losses
- c) promote a conducive market and trade for agriculture commodities and inputs
- d) ensure food stability
- e) promote the availability of, and accessibility to, agriculture inputs
- f) operationalize regional food emergency relief arrangements

In August 2010, the major ASEAN rice producers (Thailand, Viet Nam, Laos, Cambodia, and Burma) decided to form a rice millers' association to create a sustainable system for trading and production. The association focuses on price stabilization, regional food security, and rice development. Its members aim to upgrade the quality of the milling process, strengthen rice management, and create an integrated rice-production network among ASEAN members. The initiative will strengthen the role of millers, traditionally middlemen in the rice-production

¹⁶ ASEAN Secretariat, <http://www.aseansec.org/19822.htm>

process. It will also tap the capacities of rice millers among the ASEAN member countries that produce 25 percent of the world's total output of 448 million tons of rice and supply up to 65 percent of the world's 29-million-ton global rice trade.¹⁷ In the context of the ASEAN's CEPT scheme, the member countries can export rice to one other under a tariff range of 0 percent to 5 percent (see table 4.1).

¹⁷ ASEAN Affairs 2010. ASEAN Rice Alliance Formed.
http://www.aseanaffairs.com/asean_news/agriculture/asean_rice_alliance_formed

Table 4.1: ASEAN Tariff Scheme in Rice

Rice	Status 2007	Status 2008	MFN Tariff	Tentative CEPT ^a rates			
				2007	2008	2009	2010
1006.10.10	- Rice in the husk (paddy or rough): -- Suitable for sowing	N ^b	N	0	0	0	0
1006.10.90	-- Other	N	N	7	5	5	5
1006.20.10	- Husked (brown) rice: -- Thai Hom Mali rice	N	N	7	7	7	5
1006.20.90	-- Other	N	N	7	7	7	5
1006.30.11	- Semi-milled or wholly milled rice, whether or not polished or glazed: -- Fragrant rice: --- Whole	N	N	7	5	5	5
1006.30.12	--- Not more than 5% broken	N	N	7	5	5	5
1006.30.13	--- More than 5% but not more than 10% broken	N	N	7	5	5	5
1006.30.14	--- More than 10% but not more than 25% broken	N	N	7	7	5	5
1006.30.19	--- Other	N	N	7	7	7	5
1006.30.20	-- Parboiled rice	N	N	7	6	6	5
1006.30.30	-- Glutinous rice (pulot)	N	N	7	7	7	5
1006.30.40	-- Basmati rice	N	N	7	6	5	5
1006.30.50	-- Thai Hom Mali rice	N	N	7	7	5	5
1006.30.61	-- Other: --- Whole	N	N	7	6	5	5
1006.30.62	--- Not more than 5% broken	N	N	7	6	5	5
1006.30.63	--- More than 5% but not more than 10% broken	N	N	7	6	5	5
1006.30.64	--- More than 10% but not more than 25% broken	N	N	7	7	5	5
1006.30.69	--- Other	N	N	7	7	5	5
1006.40.00	- Broken rice	N	N	7	7	5	5

Source: ASEAN Secretariat, <http://www.aseansec.org/18137.htm>

Note: ^a CEPT refers to the ASEAN Common Effective Preferential Tariff Scheme

^b N = Normal track of the inclusion list

The ASEAN has forged free trade agreements (FTAs) with China, Japan, and South Korea under an extended form of ASEAN regionalism. The ASEAN-China FTA started in January 2010. One component of said FTA is the Early Harvest Program, which, in the case of Cambodia, will assist agricultural development and economic growth through export opportunities for products

such as fresh fruits, livestock, fish, shrimps, and prawns. However, Cambodia cannot yet enjoy the full potential of the program due to the absence of macroeconomic stability, a sound business climate, adequate legal framework, sufficient infrastructure, and effective government institutions. Cambodia has not yet fulfilled these prerequisites.¹⁸ In addition, the lack of information on regional markets, lack of government support in facilitating exports, and lack of capacity on the part of export entities are the main constraints in promoting Cambodian agricultural exports to the region.¹⁹

4.2. Mekong Subregional Cooperation

The Mekong Subregion is heavily reliant on agriculture for economic development and livelihood. The Mekong River is the main and largest water source in the region; it supports the production of various agricultural crops, especially rice. Thailand is the world's biggest rice exporter, exporting about 8 million tons per year. Viet Nam exports approximately 6 million tons per year. Cambodia exports much less than Thailand and Viet Nam, about 100,000 tons per year. The Cambodian government has committed to increasing its exports to 1 million tons by 2015. Land expansion and the introduction of agricultural machinery transformed agriculture in the Mekong Subregion from traditional subsistence to commercial farming, a trend that encourages regional leaders to cooperate and find markets for their products.

However, climate change and the decreasing water flow in the Mekong River are threatening agricultural development in the region. In early 2010, the Mekong River had its lowest water flow in fifty years. A study done by the Mekong River Commission (MRC) revealed that this phenomenon was caused mainly by extreme weather conditions that prevailed in the country—very low rainfall in the 2010 dry season following a particularly wet season in 2009.

According to Jeremy Bird, chief executive officer (CEO) of the MRC, this phenomenon is sending many people to the brink of serious poverty. “Difficulties in access to water make

¹⁸ Hing Vutha and Noun Keosothea, 2006 Early Harvest Programme: Implications for Cambodian Agriculture, CDRI Special Report, May 4, 2006, <http://www.cdri.org.kh/webdata/download/sr/ehpe.pdf>

¹⁹ Chap and Chheang. “Trade liberalization under ACFTA and Its Possible Impacts on Cambodian Industries” (unpublished research paper, Asian Development Bank, Manila, 2010b).

farming and fishing livelihoods more precarious for affected communities and raise the risk of contracting diseases from the use of polluted sources. Low water levels have also severely disrupted river transport both for trade and tourism, further affecting livelihoods of people who depend upon the river.”²⁰ Scenario studies done by the MRC research team have predicted that Cambodia and Viet Nam would be hardest hit by climate change, rising sea levels, and a series of hydropower dams being constructed upstream. The agriculture sector will be seriously hit by seasonal change, lack of rain, and lack of water.

Mekong regional leaders held a meeting in Phnom Penh in November 2010 called the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy (ACMECS) Summit. During this meeting, Cambodian Prime Minister Hun Sen proposed a regional agreement to boost rice production and exports. He said that the aim of ACMECS in creating a rice-export association is “to ensure the stability of food in the world and at least in the region, which is suffering from climate change.”²¹

5. Trade in Agriculture

5.1. Global Agricultural Trade: Unfair but Improving

Agricultural Market Access

While opportunities for trade in industrial goods are normally clear and competition relatively fair, that cannot be said of agricultural trade. The global trading system is now fragmented by regional, bilateral, and preferential trading arrangements. As a least developed country (LDC) and a member of the ASEAN FTA, Cambodia benefits from many such arrangements. Market-access barriers are often high. Subsidies in developed countries seriously distort markets, and food-safety standards are increasingly complicating export opportunities for poorer suppliers.²²

²⁰ Jeremy Bird, “Low River Levels Caused by Extreme Low Rainfall,” news release, March 16, 2010, http://www.mrcmekong.org/mrc_news/press10/Op-Ed-13-3-10.htm.

²¹ Kong Sothearith, interview on Voice of America (VOA), Khmer Phnom Penh, Thursday, 18 November 2010.

²² Sok Siphana. “Breaking into the World Markets for Cambodian Agriculture Products.” (policy discussion paper, Supreme National Economic Council, November 2009).

For nearly fifty years, farm goods were excluded from the normal disciplines of world trade. The General Agreement on Tariffs and Trade (GATT) maintained a series of special conditions that permitted the growth of subsidies as well as high and unpredictable market protection. The world markets for many important agricultural products are completely artificial. Special rules allowed the European Community (EC) to develop its complex systems of market protection, domestic subsidization of farmers, and export subsidies called the "Common Agricultural Policy" (CAP). The United States sheltered long-standing farm subsidy programs. Japan, Switzerland, Scandinavian countries, and most other developed countries were able to maintain highly protected agricultural sectors.

Tariff Quotas

The WTO outlaws the use of quotas on imports and exports. Customs duties are the main legal form of protection, but there are two important exceptions: the garments and agricultural sectors. The permitted use of quotas in the agricultural sector is termed "tariff quotas" because they allow a certain volume of access to the market at low or zero customs duty. All imports outside the tariff quota are subjected to a much higher tariff, usually so high that imports cannot compete. The system of tariff quotas in the WTO is in place largely to ensure that very high tariffs cannot completely eliminate imports. Around 1,400 tariff quotas are currently in place, affecting access in about forty-three WTO member countries. Cambodia itself does not use tariff quotas under the WTO, but agribusiness exporters in Cambodia will often encounter them directly or indirectly.

Cambodia already benefits from many favorable trade relationships. The influence of WTO accession on the further opening of the Cambodian market is limited. Where they do not enjoy preferential access terms, Cambodian exporters seldom have to pay duties above the local "most favored nation" (MFN) applied rates. The principal market-access advantage for Cambodian producers in export markets will be the security of the bound tariffs committed by all other WTO members. In almost 150 countries, Cambodian exporters will have a guaranteed ceiling to the duties they can be charged by customs authorities.

The availability of tariff advantages under the Generalized System of Preferences (GSP) will continue to be important for Cambodian exporters, especially for some major industrial country

markets like the United States. GSP benefits cannot be guaranteed in the WTO, and their application is often subject to arbitrary decisions by the importing countries. Although all developing countries can qualify for most GSP schemes, there is increasingly a view in the industrial world that it should be the poorest nations that receive the most benefits.

Dealing With Nontariff Barriers:

Once favorable customs duties are identified as market opportunities, other obstacles called “nontariff barriers,” will affect whether or not Cambodian products succeed. WTO membership has proven especially useful in dealing with these barriers. In joining the WTO, Cambodia has had to take on the requirements of a series of agreements on nontariff measures. But these rules and a range of others also apply to Cambodia’s main trading partners in the WTO. The rules are meant to restrict the ability of WTO member governments to block Cambodian imports unfairly.

Technical Standards as a Trade Barrier:

An area in which nontariff barriers can hit Cambodian exports is the use of technical standards. International agreements usually recognize a difference between compulsory standards and voluntary standards. In the WTO, compulsory standards are usually referred to as technical regulations. However, to meet real market needs, Cambodian exporters will usually have to try to meet all relevant standards, whether they are voluntary or compulsory. By doing so, a variety of testing, certification, and conformity assessment procedures as well as mutual recognition arrangements need to be understood.

Market Conditions for Rice Exports:

The rice sector is heavily protected and subsidized; hence, the relatively low level of international trade compared with demand. Some rice-growing traditions often retain an almost religious significance. There is also the issue of national food security; rice is a politically sensitive commodity. Bound tariffs on rice in key markets are usually very high, often over 100 percent. Special treatment on market access applies particularly to Japan, Korea, and the

Philippines. Taiwan has avoided the “tarrification” of the rice sector by providing access through tariff quotas amounting to 8 percent of consumption. Tariff quotas are in place, under WTO commitments, for Colombia, Costa Rica, Indonesia, Morocco, Thailand, and Venezuela. China opened a large tariff quota of up to 4 million metric tons a year at 1 percent duty rate when it joined the WTO. The EU’s “Everything but Arms (EBA)” preferential arrangement initiative has, since 2009, given rice imports a completely duty-free and quota-free treatment.

The market access conditions for rice in the ASEAN are almost as complicated as those under the WTO. Rice is covered under AFTA terms for sensitive products. This applies to Indonesia, Malaysia, the Philippines, Viet Nam, and Cambodia itself. Indonesia has bound an MFN rate for rice at IDR 430 per kilo. Malaysia, as a large importer, offers access at zero CEPT rate (although importers need permission from the Malaysian authorities to secure this rate). Singapore is tariff free. Thailand has a bound rate at THB 3 per kilo and a CEPT applied rate of 5 percent. Vietnam maintains MFN bound rates of 40 percent or 50 percent (for parboiled rice) with its 2004 CEPT rate applied at 15 percent (reduced to 5 percent for 2005). Rice is not included in the duty-free list under the “early harvest” arrangement with China.

Market Conditions for Cashew Export

Cashew nuts are a favorite snack food and confectionary ingredient in many countries, second to almonds in global tree-nuts market share. The cashew nut market is estimated at 350,000 tons of kernels and growing as consumer eating habits change toward more snack foods. The major consuming countries are the United States, European countries, India, and China. The United States alone consumes 73,000 tons per annum.²³

The world market for cashew nuts is highly dynamic compared to other industries. The dramatic increase seen in recent years in the consumption of almonds is based on heavy promotion and consumer awareness of the health benefits of almonds. The market share of cashew nuts in the

²³ Sok Siphana “Operationalising the Rectangular Strategy for Growth: Towards Better Business Processes for Trade,” (draft business process analysis, Economic and Social Commission for Asia and the Pacific, Cambodia, 2011).

snack sector has remained relatively stable in the West, with cashew prices remaining buoyant even during recession. This can continue as a function of diversified demand as markets like the Middle East, India, and China grow in importance. Viet Nam is now the biggest producer of cashew nuts worldwide, posting high growth rates in recent years. The other major producers are India, Brazil, and several African countries.

Market access conditions for the cashew nut industry throughout the world are favorable compared to the other industries. Tariffs for Cambodian cashew kernels in most regional markets are low, and Cambodia faces the same tariffs as its main competitors. Overall Cambodia's tariff advantage is 0.2 percent. The major importing countries (United States, the EU, Australia, Canada, Japan, and India) apply a zero MFN tariff for raw cashew nuts (RCN) and kernels. Some ad valorem tariffs in percent are (MFN / preferential tariff for Cambodia): China (MFN - 10 percent/Cambodia-5 percent), Indonesia (MFN-5 percent/Cambodia-free), Japan (Cambodia-free), South Korea (MFN-8 percent/Cambodia-free), Lao PDR (MFN-30 percent/Cambodia-10 percent), Malaysia (Cambodia-free), Thailand (MFN-40 percent/Cambodia-free), Viet Nam (MFN-40 percent/Cambodia-5 percent).

Tariffs for RCN are relevant only for countries that have a processing industry, notably Viet Nam and Thailand. Viet Nam applies a 10 percent tariff to Cambodia, but it is not clear whether this is actually paid as the trade is informal. India, the world's biggest RCN importer, applies an MFN tariff of 30 percent.

Standards and SPS measures apply, which will become an issue for Cambodia once processing and direct exports to consuming countries start. As a luxury product, cashew nuts require careful attention to product quality, not just organic certification. Traceability is fast becoming a requirement for most food products going to developed-country markets, a trend accelerated by recent chemical and salmonella contamination disasters in China and the United States, respectively.

Farmers selling to local collectors who sell to middlemen who, in turn, sell to export traders are typical. In fact, this is the experience in every country that lacks its own indigenous shelling

operations. The long chain usually inhibits returns to growers. Cambodia has a distinct advantage over other exporting countries due to its proximity to the market for in-shell cashews.

The Asian regional markets so far identified are Thailand, which imported 1,775 metric tons in 2007 (mainly from Viet Nam); Singapore, a small market importing about 1,000 metric tons per year, but in which organic products are becoming significant; and China, which may become a very important market.

Box 5.1: Agriculture is important for sustaining growth and reducing poverty

Progress in agriculture has been historically impressive. There is still more room for yields improvement (compared to yields achieved in neighboring countries), which can be realized by investing in physical infrastructure, especially irrigation systems; increasing agricultural productivity; and promoting agricultural diversification. The government has given serious thought to the factors of production costs and output as well as capacity in purchasing, stockpiling, and processing Cambodian rice....in 2008, the government provided a special credit line amounting to US\$12 million (through the Rural Development Bank) to help private rice millers collect paddy rice to ensure domestic supply.... In 2009, the government offered a budget amounting to US\$18 million to the Rural Development Bank to continue the activities....the government will convert the budget to establish an “Agriculture Support and Development Fund” to support the private sector, especially small and medium enterprises, on a number of targets including (1) providing short-term credit for collecting paddy rice from farmers at an appropriate price to maintain price stability and ensure food security and (2) providing medium-term credit to rice millers to increase their capacity in stockpiling, drying, and processing... the government will continue to enforce a zero-tariff policy on the importation of agricultural materials such as seeds, fertilizers, pesticides, and agricultural equipment, etc. ... the government has also been working to streamline procedures in rice exports and to gradually strengthen the rice-export management mechanism while improving domestic capacity in rice purchasing, processing, distribution, and export.... the government is drafting legal procedures for investment

projects in agriculture... These projects are to be considered high-incentive priority projects within the existing investment law framework.... the government is trying to strengthen the partnership between smallholder farmers and large-farm owners as well as with agriculture enterprises and between social land concessionaires and economic land concessionaires, with emphasis on establishing farmers associations and partnerships with companies involved in rice purchasing, processing, distribution, and export.

Source: Selected excerpts from the keynote address of Samdech Akka Moha Sena Padei Techo Hun Sen at the Third Cambodia Economic Forum organized by the National Supreme Economic Council on February 5, 2009 in Phnom Penh.

5.1. Cambodia's Trade in Agriculture

Domestic Condition

Context for Diversification: Despite some initial signs of recovery from the recent global financial crisis, Cambodia felt the need to enhance its competitiveness. Maintaining competitiveness is important given the social implications of the agricultural sector in which rice exports alone, if it reaches 3 million metric tons, could make up approximately 20 percent of GDP.

Policy Direction: The government has adopted a three-pronged strategy to realize the vision of agricultural development—*productivity enhancement, diversification, and agricultural commercialization* (i.e., from subsistence to commercial agriculture).

Rice Export Policy: The promotion of milled rice exports is the first step to catalyzing the export of other agricultural products such as cashew, rubber, and other crops. Parallel to this, the success of the implementation of the rice export policy will send a strong political message, with the effect of encouraging and paving the way for the export promotion of other agricultural crops.

Priority and potential of export products: The government has identified nineteen products with good export potential, most of which are in agriculture (rice, cashew nuts, cassava, maize, fish, livestock, rubber, silk, soybeans, fruits and vegetables—including organic, mango, palm, pepper—and wood products).

- Rice production shows strong potential for a significant increase in yields and in volume.
- Cassava is a promising crop, with yields recently reaching 23 tons/ha (volume similar to Thailand's and Viet Nam's), but only 3 percent of cultivated land is devoted to cassava.
- Rubber (with exports of around US\$175 million in 2006) has posted accelerated growth in recent years, with recent significant investment in new rubber plantations.
- Fruits and vegetables are grown only on a small scale despite significant potential as an import substitute to support the increasing demand fueled by the tourism industry.
- Silk, now accounting for US\$10 million worth of exports, also has the potential to develop with the expansion of the local tourism industry along with growing export potential.
- Livestock, which has posted a steady stock increase of an average of 2 percent per annum over the past decade, has strong export potential if many SPS issues are addressed.
- Fisheries exports (around US\$100 million worth annually of pond-reared fish such as catfish and tilapia estimated at between 500,000 tons and 1 million tons annually) are constrained by the absence of SPS standards.

Market Access: As an LDC, Cambodia benefits from preferential access through the General System of Preferences (GSP) Schemes with the United States, Japan, and about twenty other developed countries. Moreover, Cambodia is a member of the WTO, ASEAN, and a number of regional trade agreements between ASEAN and its development partners (e.g., China, India, Australia, and New Zealand).

Everything But Arms (EBA) initiative: The EU is a major destination for Cambodia's rice exports. Preferential access to the EU is provided under the EBA initiative launched by the EC in 2001 to replace the previous GSP system. Under the EBA initiative, most products from LDCs, including Cambodia, get duty-free access to European markets with greater predictability.

Cambodia's utilization of preferential access to the EU market has grown vigorously since the phasing in of rice in the program in September 2009. Almost all of Cambodia's exports to the EU are eligible for preferential access. Cambodia's utilization of its quota for "wholly obtained long-grain rice" stood at 78.9 percent in 2005. Under these trade preferences, the company can export rice to the European market with special tax preferential treatment of about €140 per ton compared to exporters from Thailand and Viet Nam.

Challenges

There are different interrelated challenges facing agricultural development in Cambodia. These are poor performance in regional trade, speculative land price distortions, underperforming economic land concessions, brain drain, finance shortage, lack of market information, and weak infrastructure.

Poor performance in regional trade: Cambodia has not benefited as it should have from regional markets (only 13 percent of its trade is intraregional against an average of 49 percent). There remains a tremendous potential for further integration into the Asian region with preferential market access to development partner countries like China, India, Australia, New Zealand, Japan, and South Korea.

Weak cross-border trade facilitation: In the World Bank "Doing Business" rankings for 2010, Cambodia is ranked 22nd out of 24 East Asia and Pacific nations in the overall index and 21st out of 24 in the "trading across frontiers" index.

Speculative land price distortions: Cambodia still suffers from the perverse effects of land price distortions arising from the speculative bubble that happened in the years prior to the global financial crisis, which is diluting Cambodia's perceived comparative advantage as a country with relatively abundant land, natural assets, and inexpensive labor.

Underperforming Economic Land Concessions (ELC): The ELC approach has not delivered the expected results. Out of some 60 ELCs, only a small fraction has active investments while many others are still entangled in numerous conflicts with indigenous communities over the traditional use of land and forest and, by law, a right to the use of these land concessions).

Reversing the brain drain: In the labor market, the major challenge is to entice those that have benefited in recent years from exposure to jobs outside of agriculture with high labor productivity (e.g., in industry and services) to be “reallocated” back to agriculture, a move which may have a significant impact on growth and provide the necessary incentive for reverse migration back to the rural areas.

The intractable sanitary and phytosanitary issues: Cambodia does not currently have a compliant basic SPS management system in place that would allow entry of its livestock and fisheries exports to key markets like the EU and China.

Finance shortage: There are four main challenges for Cambodia’s rice exports: (1) lack of capital to buy unmilled rice surplus from farmers; (2) lack of rice storage capacity; (3) low level of drying capacity for unmilled rice; and (4) inadequate number of middlemen. In 2010, Cambodia’s local middlemen could buy only 0.5 million tons while about 3.8 million tons of rice were exported to Thailand and Viet Nam for further processing and packaging. Some exporters say that an additional US\$800 million is needed in order to buy all unmilled rice surplus from local farmers.²⁴ The government-run Rural Development Bank provided only US\$18 million in credit for rice millers in 2010. The government later offered US\$36 million (up from \$18 million) for rice millers to buy paddy rice from farmers, according to the Ministry of Economy and Finance. This sum, however, is a small amount compared to market demand of US\$350 million.²⁵ Unregulated cross-border rice trade in places like Kompong Trabek causes the vast majority of Cambodia’s roughly 3.5 million tons of annual rice surplus to slip away unprocessed to Viet Nam and Thailand. Farmers said they could sell their rice at a higher price to Vietnamese traders. One farmer said, “I don’t think the government policy will be successful because the rice millers are not hungry to buy our rice.”²⁶

²⁴ Radio France Internationale (Khmer Service) broadcast on January 3, 2010.

²⁵ Phnom Penh Post, January 17, 2011, <http://www.phnompenhpost.com/index.php/2011011746118/Business/government-doubles-rdb-miller-lending.html>

²⁶ Cambodia Daily, December 31, 2010 (1, 30).

Lack of market information: Cambodian farmers do not get access to updated, accurate market price data for their products. For instance, Cambodia produces about 60,000 tons per year from its 166,600 productive rubber plantations. However, Cambodia's rubber is being undersold at about US\$4,500 per ton, or about 10 percent less than the price in other rubber-producing countries like Malaysia. For example, on December 28, 2010, at the Malaysian Rubber Exchange, the price was US\$5,011.50 per ton while at the Tokyo Commodity Exchange, it was US\$5,000 per ton.²⁷

Weak production infrastructure

- ***Lack of irrigation facilities:*** Approximately 7 percent of cropland is irrigated, the lowest in all of Southeast Asia. The dependence of Cambodia's agriculture sector on rainfall makes it vulnerable to the vagaries of weather.
- ***Inadequate fertilizer usage:*** Fertilizer usage in Cambodia is significantly lower than in neighboring countries at about 5 to 6 kg/ha, much lower than the average in the region. Only 27 percent of rainfed farms use inorganic fertilizers, compared to 70 percent of dry-season farmers who have access to irrigation.
- ***Weak collective action:*** Currently, no credible private sector organization for collective action exists in the agriculture sector as a whole or at the sectoral (e.g., rice sector, cashew nut sector) level, although there are numerous rice-milling associations whose membership is diffuse both geographically and politically.

6. Conclusion and Recommendations

6.1. Conclusion

The potential for growth in agriculture is significant due to efforts by the government, private sector, local community, NGOs, and development partners to promote agriculture and rural development. If the government can solve the issues related to rice exports in the same way that it did for the garments sector, substantial value added will be retained in the country and the

²⁷ Cambodia Daily, December 29, 2010 (1, 36).

gains generated from the process could directly contribute to economic growth in the form of employment for more than 70 percent of rural people, an increase in income, and, in particular, better living conditions and reduction in poverty for farmers and most Cambodian people engaged in economic activities in the rural areas. Additionally, the sector could provide a mechanism for equitable redistribution of economic gains, which would then have spillover effects on broader economic activities. In turn, this could lead to a complete change in the image of Cambodia's rural economy.

Cambodia can be a model for LDCs that use agriculture as a springboard for economic development with assistance from related ministries/institutions, local authorities, development partners and agencies, national and international NGOs, the private sector, and the community. The full cooperation and support of these entities is needed to formulate and implement action plans aimed at increasing efficiency, improving quality, and accelerating progress in the sector. Such collaborative efforts can serve as a catalyst in realizing the agricultural sector's vision for development.

Due to budget constraints, government investment in agriculture is still limited although the sector has benefited from investments done by the private sector, NGOs, and various development partners (i.e., donors). All partners have contributed to increasing productivity in agriculture and effecting rural development.

While Cambodia has potential to become a major agro-products exporter, especially in rice, it will take a great deal of time and work to make the transition from subsistence production to being a major exporter. It will also be a daunting task to change people's behavior and mindset from running their livelihoods as a private or family business to managing it as a commercial, corporate, or community production enterprise.

6.2. Recommendations

Focus on rural development

More investments should be directed toward rural development in general and agricultural development in particular since the bulk of Cambodia's poor live in remote rural areas. Some

examples of support measures are the construction of irrigation networks and the provision of low-interest credit to help farmers procure inputs such as fertilizers and seeds.

Irrigation networks and roads have to be built or improved to increase multicropping and improve access to local and international markets. The forthcoming royalty from offshore gas/oil exploration as confirmed by government could be partly utilized to improve education in the rural areas and develop Cambodia's agricultural sector. Irrigation, roads, agriculture R&D, and rural education have proven to be the most important productivity-enhancing and poverty-reducing mechanisms in Cambodia.

Large-scale production of world class-quality rice

The use of dry-season rice must be promoted throughout the country, especially in areas near water sources. It is important for farmers to know the rice varieties and quality that are in demand in the local and international markets so that rice production can be geared to meet that demand. The Institute of Standards of Cambodia (ISC) should finalize the national standards in the different categories of rice to enable the country to have its own standards, which can help it gain access to markets. It has been contended that exporting paddy rice may be easier because it would remove the need to fulfill customs or trade procedures. However, exporting paddy rice results in loss of value-added byproducts such as rice bran, husks, and various broken parts, which also results in loss of jobs. It has been estimated that approximately US\$600 million would be lost if 3 million tons of paddy rice were to be exported. It would, therefore, be more advantageous to retain value-added byproducts in the country.

Diversification into new markets and new products

The potential of the rice sector could be comparable to that of the garments sector in terms of gross export value and value added generated throughout the supply chain, including employment. Cambodia needs to build on its existing capabilities and develop new ones as a step toward diversifying its economy. The remarkable economic growth of the past decade can be sustained only if Cambodia increases its competitiveness and diversifies its currently narrow growth base.

Need for complementarity with new sectors

Agriculture will continue to be important, but needs to be complemented by development in other sectors.

- Agro-industries in rural areas (i.e., nonfarming activities like rice milling and trade) should be major sources of growth.
- Foreign investors can bring access to global value chains, technology, and finance and should thus be encouraged to invest in contract farming.
- Highlight market linkages for fish products, fish-processing technology and investment, and the ability to produce international certificates for food safety.
- Secure additional sources of financing for production and export. Cambodia's financing comes primarily from foreign savings, so tight conditions in international markets have an adverse impact on Cambodia's growth.

Need for multipronged partnerships

It is crucial to manage agricultural resources in a way that will create opportunities for growth in the sector. This has to be supported by good policies and governance and stimulus from foreign investors.

- ***With foreign-equity partners:*** Large investments are difficult to undertake without partnership with foreign investors. Serious and credible foreign involvement has begun to emerge in the rice export sector.
- ***With national dialogue partners:*** The recent adoption of the rice export policy lays the foundation for a partnership between the government and the rice milling industry.
- ***Government-Private Sector Forum:*** Cambodia can simulate successful sector-specific or product-specific arrangements that have helped other sectors (e.g., garments sector) achieve rapid growth. Collective-action arrangements under the Government-Private Sector Forum can give the private sector a sense of security for their investments in the agriculture sector.

Need to integrate Cambodian products in the global, or at least in the regional, value chain

Geography is a major driver of development, and Cambodia has the opportunity to harness the dynamism of neighboring countries. Regional integration can also help generate economies of scale for the supply chain and help Cambodia discover what it can produce. The short-term outlook is less encouraging given the global trade environment and the impasse in the current WTO Doha Development Round. However, the slowdown in global trade lends a sense of urgency to the need to deepen Cambodia's integration, particularly in East Asia.

- There are opportunities to increase subregional trade within GMS, making Cambodia the bridge between two of the largest cities in Southeast Asia—Ho Chi Minh and Bangkok.
- Efforts should focus on connecting Cambodia's agribusiness firms to subregional supply chains by encouraging Vietnamese, Thai, and Chinese businesses to relocate their processing factories in Cambodia. The rice export sector can take advantage of the zero-tariff EBA initiative to export to the EU.
- Implement existing cross-border transport agreements with neighboring countries to further stimulate cross-border trade flow.

Capacity building

Build capacities of firms on export procedures: The capability of human resources, or lack thereof, is the main constraint for majority of Cambodia's medium-sized exporting firms.²⁸ In the area of capacity building, there is a clear need to train medium-sized provincial rice millers on the actual process of international trade, particularly on the specifics of export procedures. With the possible exception of the top ten rice millers, most of the 300 rice millers in the country have only a vague idea of the export process. What most of them possess is the misconception that export is such a complicated process that only large and sophisticated rice millers can successfully engage in it. This misconception reinforces the existing marketing practices of paddy-rice buyers from neighboring countries who constantly state that it is too complicated to mill paddy rice and then have to go through the "hassle" of exporting the milled rice.

²⁸ Sok Siphana "Operationalising the Rectangular Strategy for Growth: Towards Better Business Processes for Trade," (draft business process analysis, Economic and Social Commission for Asia and the Pacific, Cambodia, 2011).

Capacity-building strategies should be practical, hands-on, and network based. All the institutional actors, both public and private, should attend a training session to explore the entire hypothetical scenario surrounding a few export cases. The role of practitioners in particular government agencies as well as those of shipping agents/freight forwarders and port authorities is crucial in order to address issues surrounding export procedures and documentation. Efficient and effective information exchange will help the trade and transport community benefit from faster time-to-market, substantial cost-savings, and increased firm-level competitiveness.

Capacity building on market access conditions: Regional institutions such as the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), the International Finance Corporation (IFC), and the Asian Development Bank (ADB) should implement more trade projects to support Cambodia’s promising export firms by helping them understand (1) concrete export opportunities arising from numerous regional and subregional trade agreements and (2) export rules and regulations and other procedural aspects of international trade.

Mobilization of private-sector rice actors

Rice farmers should form “farmers’ associations” or “rice production communities” to achieve economies of scale and ensure consistency in seed quality. Groupings like these will also facilitate access to bank loans. There is a clear need to mobilize in a more formal manner the myriad private-sector representative bodies (e.g., provincial rice miller associations or groupings and the Federation of Cambodia Rice Millers Associations led by Okhna Phou Puy, *le Rassemblement des producteurs du riz* driven by Green Trade), which would be better situated to present the common position and interest of their members and to deal with the government regarding specific trade-facilitation issues and the development of the rice export industry as a whole.

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