

Case Study:

Modernizing the Rice Sector in Cambodia



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Synopsis

This case illustrates how publicly supported technical and marketing assistance provided the basis for bottom-up modernization of the rice processing sector and facilitated linkages to international markets, resulting in a large increase in rice exports. In 2008, the IFC-sponsored Cambodia AgriSector Support Project (SCL-CBA AgriSector or AgriSector) became the vehicle for supporting the Cambodian rice sector as it emerged from decades of civil unrest, political upheaval, and bad economic policy. By first supporting SME rice millers in the supply chain, and gradually providing improvements to other elements of the supply chain, lead firms expanded export marketing programs and investment in the sector increased. The demonstrated success of the initial agricultural support project led to a second IFC project specifically focused on the rice value chain.

With the considerable economic opportunity provided by the European Union's 2009 decision to allow Cambodian rice exporters duty-free access to the EU market, the IFC project was timely. The project provided important resources to an SME-based processing sector that needed to expand rapidly as Cambodia's farmers began producing rice surplus to domestic requirements. From an estimated 20,000 metric tons (MT) of rice exports milled in Cambodia in 2009, exports of Cambodian rice increased dramatically to over 500,000 MT by 2015. The expansion of SME agro-processing is an excellent example of industry revitalization and competitiveness in global commodity markets achieved through technological modernization coupled with trade incentives.¹

1 Agro-processing activities **create a demand-pull** for upstream raw materials, input provision, veterinary services, production and harvest equipment, and aggregation, wholesale, sorters, and graders, as well as for professional support services, such as financial services, third-party certifications, packaging, storage and warehousing, and logistics services. In turn, opportunities for income growth and greater value generation are created for every actor in the value chain, from production to distribution and sales. (See literature review, page 4.)

Background

To appreciate the significance of the sector's transformation, it is important to understand the recent history of the Cambodian rice sector. After the first general election in 1993, the government prepared and implemented a comprehensive macroeconomic policy and structural reform program in an effort to integrate Cambodia's economy into the region and the world.² The Cambodian rice sector was recovering from decades of civil unrest, political upheaval, and bad economic policy. Under the new policy, rural producers could resume rice production under more normal conditions. The country reached self-sufficiency in rice again in the mid-1990s. Farmers began to grow marketable surpluses of rice. In 2000, the country produced 4.026 million metric tons (MT) of paddy rice. By 2008, the country produced 7.175 million MT of paddy rice, a dramatic average increase of over 9.7 percent per annum.

Cambodia had become the fourteenth-largest rice producer in the world. At issue was how to market the emerging surplus. Historically, a significant portion of the paddy rice crop was purchased and milled by companies with modern milling facilities in neighboring Vietnam and Thailand. The economic and political uncertainties in Cambodia had restricted interest in investing in modern rice mills. Rice producers and millers suffered low prices and yields due to limited markets for their product, particularly during the harvest period.

Rice Market Conditions, Challenges, and Opportunities

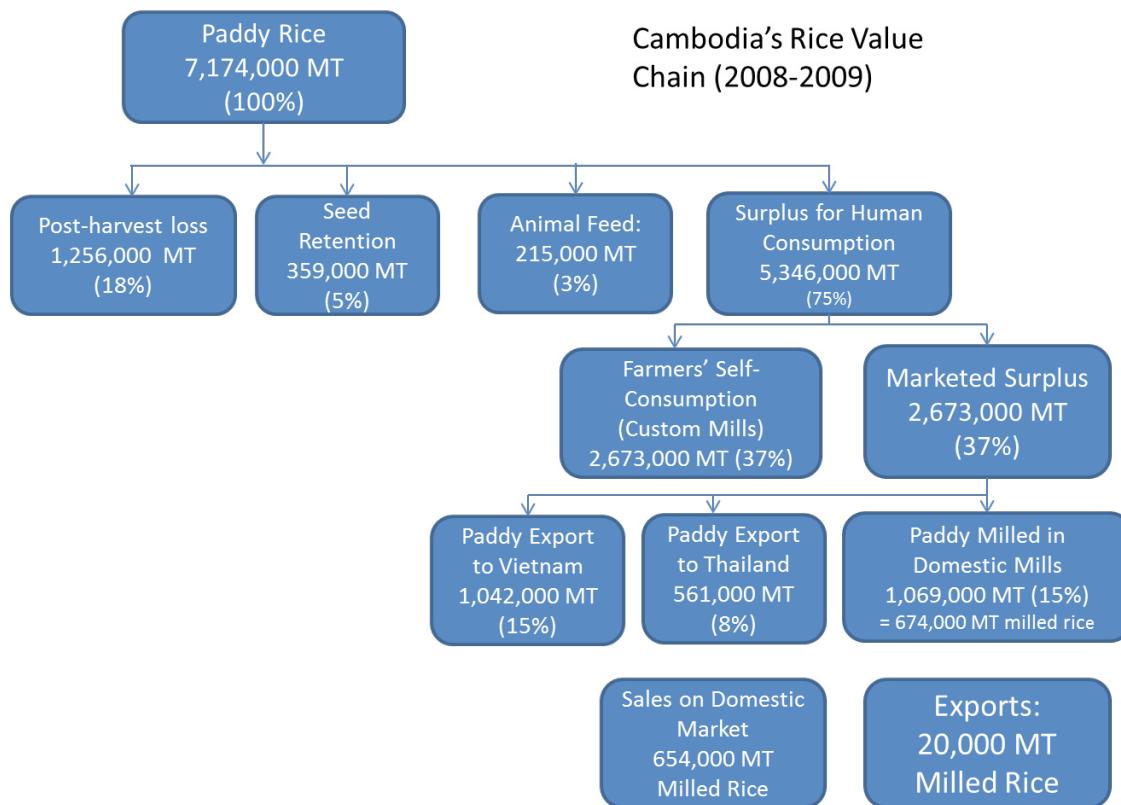
While farmers were producing more rice, the quantity of milled rice exported between 2008 and 2009 totaled only 20,000 MT, a small amount compared to the neighboring rice-producing countries of Thailand and Vietnam.³ Figure 1 illustrates Cambodia's rice value chain from 2008 to 2009. In those years, approximately 18 percent of the crop, and probably more, represented post-harvest losses; 5 percent was for seed retention; and 3 percent was used for animal feed. This left 75 percent of the crop to be processed for human

2 Chhair, Sokty and Luyna Ung, "Economic History of Industrialization in Cambodia" (working paper, UNU-WIDER, Helsinki, 2013).

3 Thailand was exporting some 8.8 million MT in 2009 and Vietnam was exporting 5.2 million MT in the same year. See also Annex Table I-1 for the comparative size of Cambodian rice production.



FIGURE 1 – CAMBODIA’S RICE VALUE CHAIN (2008)



Source: Slayton, Tom. *A Road Map for Cambodian Rice Export*, World Bank Working Paper, May 2009.

consumption, of which 37 percent of the rice was consumed by the rural population, after processing in many small and antiquated “custom” mills. An estimated 23 percent of the unprocessed paddy crop for human consumption was exported to Thailand and Vietnam. It should also be noted that processing rice using outdated equipment resulted in losses of both yield and quality (i.e., broken kernels). With rice production increasing, it became important for the Cambodian rice industry to increase capacity up the value chain.

In 2008, the rice processing sector in Cambodia was a serious bottleneck. Surveys showed there were 12,198 SME custom rice mills (defined as those with 0.2 to 0.3 MT/hour of milling capacity) and 518 SME commercial mills (defined as those with 0.3 to 1 MT/hour of milling capacity).⁴ The custom mills were small operations that milled primarily for the farmers’ own consumption.

4 Sophea, Kean, “The Rice Situation in Cambodia” (technical assistance consultant’s report, Asian Development Bank, Project Number TA 7495-REG, 2012).

These small mills processed almost 50 percent of the farm paddy output in 2013 to 2014 (see Annex Table I-2). These mills were constrained by low levels of milling technology, a lack of working capital, low-quality paddy, and a lack of drying and storage facilities.⁵ Local estimates of grain losses from harvest to storage range from 20 to 50 percent, and losses as high as 30 percent during the milling process. The commercial mills varied greatly in size, with the smallest processing facilities processing less than 1 MT/hour, and the largest processing up to 30 MT/hour (see Annex I, Table I.3 for a listing of large rice mills in 2009 and 2016). In 2009, there was a total hourly processing capacity in the existing large commercial mills of some 93.5 MT/hour, with an addition 106 MT/hour being installed in 2009. The size of commercial mills was small and inefficient compared to neighboring Thailand and Vietnam, and the level of the equipment was inadequate to compete in exacting export markets.

5 Ibid., 11.

TABLE 1 – PRODUCTION OF PADDY RICE AND EXPORT OF MILLED RICE ('000 MT) – 2008-2015

	2008	2009	2010	2011	2012	2013	2014	2015
Production Paddy ('000 T)	7,175	7,585	8,245	8,779	9,290	9,390	9,324	9,200
Exports - Milled ('000 T)	5	20	52	202	205	378	387	538

Source: FAOSTAT⁶ for production figures and Cambodian Rice Federation for export figures.

Cambodia's Competitive Advantage

In December 2009, the European Union made an important decision to include milled rice under its Everything But Arms (EBA) system of preferential duties for least developed countries, expanding Cambodia's access to EU markets. This policy provided Cambodian rice exporters with duty-free access to the EU market, a significant 30 to 40 percent tariff advantage over neighboring Vietnam and Thailand.⁷ The importance of this decision can hardly be overstated. It encouraged investors from Cambodia, the European Union, and Asia to invest in the rice processing sector in Cambodia, and to provide the capital necessary to upgrade and increase the capacity of Cambodian mills to international standards.

Additionally, on July 25, 2010, the Cambodian government adopted a policy paper on the promotion of paddy production and rice export.⁸ The objectives laid out in the policy paper were to increase paddy production, in particular by raising output per hectare; to increase the milling of rice to international standards; and to seek out markets abroad for Cambodian milled rice. The specific targets were to attain, by 2015, an annual paddy rice surplus of more than 4 million tons, and milled rice exports of one million tons.⁹ Since 2009, production of paddy rice has increased by 4 percent per annum during the period from 2008 to 2015. The

investment in improved milling capacity also led to a rapid increase in exports, fueled by the duty-free entrance of rice into the European Union. In the four-year period from 2011 to 2015, rice exports increased by an annual average rate of 41.2 percent.

China and Malaysia were among Cambodia's top export markets in Asia. France, Poland, the Netherlands, Belgium, and the United Kingdom were among the largest export markets in the European Union (see Annex I-4).

Despite the rapid growth in milling capacity in Cambodia, the milling sector faced a number of serious obstacles. The quality and quantity of rice production needed to improve and grow, largely through government investment in training and the creation of a more robust seed sector. Cambodian millers were also saddled with high electricity prices compared to competing countries, as well as lower output efficiency and high logistical costs (e.g., port costs, transport costs). Thus, there was a need for government and private investment in improved logistics and better storage for paddy rice. To create new investment opportunities, improved access to finance through warehouse receipts (among other options) was also needed, along with stronger food safety regulations.

IFC Advisory Service Intervention

It was against this backdrop in 2008 to 2009 of increasing rice production, along with relatively little rice being milled for export in the country, that the International Finance Corporation (IFC) identified a need for assistance in the agricultural sector and initiated the SCL-Cambodia AgriSector Support

6 Food and Agriculture Organization of the United Nations, "Cambodia Rice Production Statistics." <http://faostat3.fao.org/home/E>

7 The EU duty on rice can vary, but it is significant and close to €175/MT on rice valued at €500 to 600/MT.

8 Royal Government, *Policy Paper on The Promotion of Paddy Production and Rice Export* (2010), Council of Ministers.

9 World Trade Organization, *Trade Policy Review: Report by Cambodia*, WT/TPR/G/253 27, September 2011, 23.



Project.¹⁰ The overall objectives were broad: improving the operational efficiency of agricultural processors in Cambodia by investing in new technology; developing product standards; developing improved infrastructure, such as storage facilities; working with farmers on product quality; and linking the supply chain to sources of debt finance. This project worked with a variety of crops and processors that included 19 rice mills¹¹ in northwest Cambodia. The IFC budget was \$2,276,180 and the first project ended in June 2013. By project closure, the objectives of the program had expanded to include linking to the supply chain of larger buyers.

The success of the original 19 client mills who upgraded their processing equipment encouraged many more mills to join the project. At the end of the first project, the IFC had provided advisory services to more than one hundred mills and exporters, representing 70 percent of Cambodia's milled rice exports. Equipment upgrades also made it possible for mills to pursue Good Management Practice (GMP), Hazard Analysis, Critical Control Point (HACCP), and ISO 22000 food safety certification. With many export markets now requiring food safety and quality certifications, advice and support in this area became one of the most requested services under the IFC's second project with the Cambodian rice sector (RSSP).

In 2013, the success of the AgriSector project with rice mills, coupled with expanding rice production and exports, led to a similar engagement with the Cambodian rice sector known as the Rice Sector Support Project. This second project involved more SME rice millers and covered many more elements within the rice sector, such as food safety, rice export promotion programs, and seed multiplication. The new project budget was approximately twice the size of the initial project's figure.

Given the continuation of support for the rice sector, the primary elements and results of the two projects are discussed together in the section below.

¹⁰ The original agricultural project design was much broader than rice, and included other crops such as cashew, fruit and vegetables, maize, soybeans, mung beans, and cassava. It also included the development of new products, such as animal feed, cooking oils, and biomass. The implementation team realized that this was too ambitious with the resources available and concentrated principally on the rice and cashew sectors. This report will only discuss the work done by the project in the rice sector. The project began pre-implementation activities in April 2008 and ended implementation activities in June 2013.

¹¹ Selected from the most progressive mills in the Battambang Rice Miller Association and the Banteay Meanchey Rice Miller Association.

Project Implementation and Results

SCL-Cambodia AgriSector Support Project: **SME Supplier Linkage Initiatives**

The project's scope and design identified five key weak elements within the SME rice milling and export sector:

- Mill Management and Software Development
- Product Specifications
- Rice Markets and Export Promotion
- Clean Technologies
- Finance and Investment

Mill Management Development

To improve the operational efficiency of processors, the IFC team began work with 19 rice mills, mainly members of the Rice Millers Associations in Battambang and Banteay Meanchey provinces. The IFC hired a local technical assistance company with expertise in milling technology—SME Cambodia—to carry out an assessment of the milling equipment and mill management practices at these milling companies. The local technical assistance company also sampled and catalogued the quality of rice produced in the various mills as a baseline assessment to serve as specifications in rice trade deals and eventually for developing national rice standards.¹² This work resulted in mill-level recommendations to upgrade operations and replace milling equipment.

As a result of the IFC-funded assessments and guidance, **all 19 rice mills pursued upgrading and modernization of their facilities**. Based on thorough diagnostics of their existing equipment, as well as advisory services on opportunities for value-added technological improvements, millers purchased paddy drying

¹² In addition, Vietnamese milling technology experts visited the 19 mills in November 2009, taking stock of the existing equipment and assessing the need for technology upgrading and equipment replacement.



equipment, weighing scales, paddy separators, huskers, polishers, color sorters, and packing equipment. From these early activities through the scale-up under RSSP, the IFC charged fees to project clients for these advisory consulting services.

After the mills implemented the recommended upgrades, SME Cambodia also collected samples and measured the quality of milled rice. It was determined that head rice¹³ recovery (a key milling efficiency measure) increased by 2.1 percent. Based on milling volumes over three years and prevailing rice prices, this increased efficiency for the 19 mills was equivalent to \$5,375,160 in private sector savings, according to IFC evaluations.

Software Development for Mill Management

The software consultant team also reviewed the current management practices at the 19 mills, and examined the systems in place for buying and storing paddy, selling milled rice, and maintaining records on milling-related expenses, among other tasks. None of the 19 mills were using computers to assist in mill management. Based on the survey results, the project developed basic management software and provided training for the millers in its use. Sixteen mills readily accepted the computer-assisted systems, which helped the companies better manage their paddy flows, stock control, and overall accounting of business practices. The latter led to a critical enhancement of computer and financial literacy among mill managers and personnel.

The participating mills appreciated the new mill management software. According to Yi Van Mao, head of the Banteay Meanchey Rice Millers Association, “We now have better, computerized recording in place thanks to IFC, and we never want to go back to the old way of manual recordkeeping.”

The software initially provided to the mills served its purpose by introducing Cambodian managers to computerized mill management. Yet Kann Kunthy, chief executive officer (CEO) of Battambang Rice Investment Corporation (BRICO), suggested that the software had become inadequate because it did not integrate all mill management functions, such as finance, human resources, and inventory. As a result, BRICO considered trying to obtain more integrated software from

13 Head rice is the full grain, which sells for a higher price than broken grains.

Microsoft, Oracle, or SAP. Similarly, Song Saran, CEO of Amru, said there had been little updating or training for the original software, so his firm began looking for more integrated alternatives, as well.

Rice Product Specifications

At the start of the project, there were no trading specifications or grading standards for milled rice in Cambodia. Beginning with the aforementioned survey of rice output from different mills, IFC consultants, in close partnership with the government through the Institute of Standards of Cambodia (ISC), conducted workshops and meetings with Cambodian millers to develop these standards. Developing a consensus proved challenging, however, and the partners only came to an agreement at the end of the second project. The final result was the first Cambodian rice standards since the 1950s.

Both the rice industry and government adopted the standards. The development of the standards fostered greater collaboration in the sector, with several improvements and modifications implemented since initial adoption. The standards have led to improved quality in the rice processing sector, and they are an important contributor to the success in increasing exports from Cambodia to international markets.

Rice Market Access and Export Promotion

Quality improvement was the foundation for the expanded export rice marketing efforts of the follow-on project. The project surveyed the international rice market and explored opportunities for Cambodian rice. The EU’s zero-tariff EBA agreement and regional shortfalls in production provoked increased demand for Cambodian milled rice. Project consultants facilitated a number of export deals with rice and commodity traders identified early in the project. The objective was to test the export capacity of the millers, while learning about the costs, procedures, and potential pitfalls of the export process for millers. Recommendations would then be made for future rice export targets, and the project would develop rice export guidelines for the millers and exporters.



Visits to Other Countries

The IFC organized a visit for five millers to a milling equipment and technology trade fair in Thailand in July 2009. Another trip visited equipment suppliers in China and Malaysia. The project also organized a study tour to Saraburi, Thailand, where a selected group of eight Cambodian rice millers visited a large Thai rice reprocessing plant and discussed selling Cambodian rice with Thai and French traders.

Interview feedback from participating millers was positive. Song Hong, president of the Battambang Rice Millers Association, led the delegation to China. He was impressed by what his delegation saw and the contacts they made: “We took home many new experiences, knowledge, and ideas, and also learned that for Cambodia to increase its capacity to export, it needs to purchase modern drying equipment.”

As a strategy for facilitating rice exports, the project pioneered the participation of Cambodian rice exporters at international commodity conferences and trade exhibitions. In 2010, the AgriSector project supported the participation of 10 rice mills in the World Rice Conference. This marked the first time Cambodian rice exporters had attended an international trade event. In 2011, a larger delegation attended the conference in Vietnam. Under the IFC’s second project, known as RSSP, one of the IFC’s Cambodian mill clients won the conference’s award for “World’s Best Rice” in 2012. The following year, more than 40 members of the industry attended the World Rice Conference in Hong Kong.

The “World’s Best Rice” award was an excellent promotional tool for Cambodian rice, with traders around the world taking notice of Cambodia. RSSP emphasized continued international promotion of Cambodian rice; laid the groundwork for a Cambodian mark of certification similar to Thai Hom Mali, the mark used by Thai jasmine rice; and conducted export studies in a number of European, Asian, American, and African rice markets.

Another direct consequence of the project was the newfound enthusiasm of Cambodian exporters for industry promotional materials and initiatives, such as matchmaking events and buyer visits to Cambodian rice mills. In 2012, 15 Cambodian rice exporting companies participated in the THAIFEX

Trade Fair in Bangkok, Asia’s largest food fair. At the event, Cambodia had a national booth for the first time manned by exporters and project consultants promoting Cambodian rice, which resulted in huge interest in its rice products.

The original visits organized by the project to Vietnam, Thailand, China, and other regions were instrumental in helping Cambodian rice millers and exporters make contacts that led to export contracts. Additional trips to the EU and United States, organized under the follow-on RSSP project, continued to help Cambodian millers successfully export to new markets and increase exports to more traditional markets.

The two projects’ export interventions led to facilitated rice exports valued at \$10,558,066. When the IFC began supporting the Cambodian rice industry in 2008, few mills could produce export-quality rice, and hardly any rice traders would consider sourcing from Cambodia.

According to one of the largest exporters, Song Saran of AMRU, “One visible result from IFC work was the arrival of new buyers, purchasing directly from us [Cambodian millers and exporters].”

Industry Trade Organization

The IFC supported the creation of the Cambodian Rice Federation, an industry association that advocates for millers, exporters, and other rice value chain actors. The association also serves as a focal point for coordinating promotional efforts for the rice sector. They have a website and training materials, and have made it easy to access information on the Cambodian rice sector.

Promotion of Clean Technologies for Waste Reduction and Energy Efficiency

The project worked with the local Millers Association to develop an assessment of the waste management and energy efficiency practices followed by the different mills. The analysis led to the development of training manuals in four areas: energy efficiency, rice hull gasification, waste management, and equipment operation and maintenance for improved energy efficiency and waste minimization. The project also offered training in these areas through various workshops for interested milling operations. In addition, the team developed a rice mill equipment handbook, and published a study on the rice husk gasification industry in Cambodia.



Two mills that participated in the AgriSector project installed gasifiers to produce energy from waste rice husk. SME Cambodia offered recommendations on the advantages of gasifiers and the best model to install under the same \$120,197 contract. The two mills reduced the amount of diesel fuel and electricity they purchased by \$252,000 over three years. Building on this success, SME Cambodia launched a sister firm called SME Renewable. That firm has gone on to install 38 gasifiers at rice mills across Cambodia.

It is difficult to judge the impact of the clean technology training manuals prepared within the IFC project. The mills have placed a greater emphasis on gaining HAACP certification, rather than installing or maintaining clean technology. Many of the gasifiers that were installed are no longer in operation, victims of lower energy prices that changed the economics of cogeneration and other clean technologies.

Finance and Investment

The project was originally linked to a proposed IFC investment in ANZ Royal (ANZ), a banking joint venture between major Australian and New Zealand banking interests and a local business conglomerate, to provide risk sharing to borrowers in the agribusiness sector. As a major financial institution, ANZ's role was to provide a link to other potential lead firms through their existing loan book. New clients were to be brought to ANZ by reaching out to members of agribusiness associations.

The project was not able to create successful access to finance for the 19 rice processing firms through the planned risk share facility (RSF). Rice mills were able to access lower-cost financing from China and other sources, reducing demand for the RSF. In addition, firms wanted to borrow smaller amounts than the RSF minimums. The project, however, did support the investment of an IFC-financed SME fund (CAMLAO fund) for one mill client.

Publicly Sponsored and Lead Firm Linkage

This project is an example of a publicly sponsored bottom-up (or SME-focused) linkage initiative.¹⁴ Given

the economic incentive of duty-free access to the European Union, as well as the Cambodian government's interest in the rice sector, the IFC interventions were well timed to improve the quality and quantity of Cambodian milled rice, and to stimulate exports.

Investors were encouraged by the opportunities offered by the Cambodian rice sector, which was becoming more organized and more professional. Foreign importers and distributors, which became essentially lead firms, began to invest in Cambodia. For example, Haudecoeur, a major rice processor in France, and E. Leclerc, a large French supermarket, made investments or formed special relationships with Cambodian processors and exporters (for example, Golden Rice), leading the SMEs to improved milling practices, better food safety standards (HAACP), improved export capabilities, and stronger financing. The same is true of BRICO, which was able to attract a group of Asian investors, according to CEO Kann Kunthy. They now have a HAACP certification and are growing rapidly as a firm.

Value Chain Approach

The original AgriSector project focused on several agricultural subsectors, but was organized along lines of technical engagement (e.g., finance, inputs). This structure made the project less efficient and more difficult to administer. The evolution of the project in 2013 clearly placed the focus on the rice value chain, allowing the project to intervene in new and important areas. For example, the original AgriSector project's surveys of rice mills revealed that farmers were using poor-quality seed and supplying a mixture of varieties. This insight led directly to a seed multiplication activity in the RSSP project, which improved access to high-quality seed, with consequences down the supply chain for milling yields and quality.

Rice Export Industry in 2016

According to interviews with rice mill officials in 2016, there is a great deal of work left to do in improving

¹⁴ See pages 25-29 of the literature review. On page 29, the review states: "For 'bottom up' [SME-focused] linkage initiatives, activities are customized to the business needs of agro-processing SMEs... and organized around reducing key constraints to growth and seizing market opportunity."



many elements of the value chain. Kann Kunthy of BRICO has introduced contract farming with a few farmers and cooperatives, but contracts are not always respected. Ny Lyheng, deputy general manager at Baitang (Kampuchea) Plc, stated that contract farming was not working for his company, though they planned to roll out contracts in the future. In the meantime, they were carefully testing rice brought to the mill and buying stations, and negotiating a price based on the test's results.

Storage is another important issue in the rice value chain. There are few good storage facilities in Cambodia, resulting in considerable losses. Song Saran, CEO of Amru Rice, stated that he would be interested in collaborating on a public-private partnership to increase the size of his storage facilities. Eventually, Baitang would like to build bulk storage in the form of silos. At the moment, that mill is storing rice in jumbo, one-ton bags stored in a section of the processing plant.

Song Saran of Amru Rice also mentioned the lack of a testing laboratory in Cambodia. Currently, they send their rice to be tested at laboratories in Vietnam or Thailand, which is expensive and time consuming. Members also raised the issue of developing an accredited laboratory in Cambodia at the Cambodian Rice Federation.

Finally, both David Sok, vice president of Golden Rice, and Oknha Kim Savuth, CEO of Khmer Foods, mentioned the financial difficulties faced by the rice processing sector. Despite the achievements of these two projects, a number of challenges remain, such as the higher logistical costs (e.g., port costs, transport costs, energy costs) and lower average milling efficiency compared to neighboring countries. These challenges threaten the ability of Cambodian millers to remain competitive internationally. There is still a need for the government of Cambodia to invest in these areas to lower logistics costs and stimulate mill growth.

In addition, the liquidation of Thai rice stocks has depressed world rice prices since 2013 from the average range achieved after 2008. The lower rice prices from late 2013 through early 2016 have placed considerable financial pressure on mills. The Loran Group, one of the original participants in the IFC project, closed down its milling operations in 2016 due to low profitability.

Despite these challenges, Cambodia's exports for 2015 reached a record high of 538,396 MT, and the first four

months of 2016 totaled 201,770 MT, beating the total for the first four months of the previous year.¹⁵ The AgriSector project alone reached 169 micro, small, and medium enterprises (MSMEs), which mainly consisted of rice millers, traders, and exporters. The support provided included in-depth technical assistance on equipment upgrades, mill management, and clean technology; rice standards development; and export promotion.

Future of the Rice Industry

There are still over 12,000 custom mills (defined as 0.2 to 0.3 MT/hour of milling capacity) and over 518 commercial mills (defined as 0.3 to 1 MT/hour of milling capacity) in Cambodia that are relatively inefficient and could use equipment upgrades. Not surprisingly, the IFC targeted larger mills and exporters with the willingness and capacity to invest in improvements for assistance. This focus allowed the IFC to maximize its influence on the economic contribution of the rice sector. However, there are still many midsize and small mills that would benefit from technical assistance to improve efficiency.

Within the Cambodian rice sector, there are still considerable quantities of rice being exported to Vietnam (especially from southeastern Cambodia) and Thailand as paddy. These exports reflect established trading patterns between Cambodian farmers and Vietnamese and Thai traders who buy paddy with cash. Increased milling capacity in Cambodia has increased in-country processing, but further improvements in procurement, contracting, logistics, and other aspects of the value chain will be required before Cambodia is able to reach its million-ton export goal.

When the IFC's AgriSector project began, it was the only project funded by a development organization that was working with the rice milling sector in Cambodia. Since then, a number of development groups have initiated projects in the rice sector, including the Asian Development Bank, the French Development Agency, and the World Trade Organization. This expanded engagement is important for addressing the remaining inefficiencies in the Cambodian rice value chain.

¹⁵ Cambodian Rice Federation and Secretariat of One Window Service for Rice Export Formality (SOWS-REF), "Annex: Report on Cambodian Rice Export Status in April 2016, 4 month."

Lessons Learned

The following lessons focus on the bottom-up (or SME-focused), publicly sponsored initiative to evaluate and address the needs of SME rice millers and exporters. For a variety of political and economic reasons, the sector had fallen behind industry norms in adjoining countries, and so was a prime candidate for a bottom-up initiative. This approach addressed targeted efficiency bottlenecks to kick-start interest and investments by global lead importers and marketers in the Cambodian rice sector. Developing economies often have weak SME agro-processing sectors, and many of the lessons learned can be applied to other situations and crops.

Lesson 1: Public Sponsorship. Public sponsorship for basic modernization of the SME agro-processors in the rice sector, coupled with trade incentives in the form of duty-free access to the EU market, provided an ideal combination to illustrate the business opportunity in the Cambodian rice sector. Illustrating the sector's capacity and possibilities accelerated private sector investment and the expansion of the rice milling sector, leading to increased rice exports and industry profitability.

Lesson 2: Rice Value Chain Focus. The project, initially conceived along technical specialties and numerous crop categories, was modified to focus on the rice value chain, by far the most important Cambodian crop. The project followed a bottom-up approach of first modernizing and improving the capacity of SME mills to produce export-quality rice, and then focusing on market development. The case reveals how successfully meeting export market standards allowed the development of close relationships between lead importers and SME millers and exporters in the second project phase.

Lesson 3: Technical vs. Market-Driven Approach. In the technology-focused stage of IFC engagement, the project enhanced mill efficiency and output quality through improved technology and management. Based on the results of the first project phase and considerable appetite for additional mill upgrading, the second phase focused on rice marketing, quality improvement, and supply chain linkages, particularly linking the SME rice milling sector to lead firms in significant rice-importing countries. The investment in improved efficiency and

quality in order to meet international standards was essential for successfully connecting Cambodian millers to international lead buyers.

Lesson 4: Importance of Grades and Standards.

For an export program to be successful, it was clear that established grades and standards were needed in order to compete with the larger and more well-established rice exporters in neighboring countries.

Lesson 5: Management and Software Utilization.

The replacement of manual systems with mill management software, as well as the delivery of software training programs, proved invaluable to exporters for driving efficient mill management and building relationships with importers. Such support also provided the information and structures for mills to develop clearer financial reporting and financeable business plans.

Lesson 6: Demonstration Impact.

The success of the original 19 participating SME rice millers attracted other rice millers and actors within the supply chain to participate in training events, conferences, and marketing trips. The project provided support to establish a rice sector association. While the Cambodian Rice Federation has served as a focal point for value chain activities, some value chain actors, principally the millers, have continued to organize their own associations in order to defend their specific interests. Balancing the varied, and occasionally conflicting, interests of its members is often a challenge when an association's mandate encompasses an entire value chain.

Lesson 7: Availability of Finance.

Though availability of financing for SMEs is often a problem that restricts expansion, publicly supported funds may not be preferable lenders. Rice millers found that equipment suppliers were often the lowest-cost source of financing, while Cambodia's attractive export prices under the EBA agreement provided operating profit margins that attracted investors from the neighboring rice industry and marketers. Furthermore, attendance at international rice sector events was helpful for making marketing contacts and exchanging information about the modern, efficient equipment and financing available.



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Interview List

Organization	Interviewee Name(s)	Date of Interview
Cambodia Rice Federation	Sok Puthyvuth	4/11/2016
Baitang (Kampuchea) Plc.	Ny Lyheng	4/13/2016
Battambang Rice Investment Co. Ltd. (BRICo)	Kann Kunthy	4/9/2016
Golden Rice (Cambodia) Co. Ltd.	David Sok	4/10/2016
Amru Rice (Cambodia) Co. Ltd.	Song Saran	4/11/2016
Yamm Loeung Rice Mill	Yamm Loeung	4/14/2016
Khmer Foods Group	Sreyroth Kim	4/9/2016
Cambodia Rice Federation	Oknha Kim Savuth	4/11/2016
Cambodia Rice Federation	Moul Sarith	4/11/2016
Cambodia Rice Federation	Poeuv Bunrith	4/11/2016
International Finance Corporation	Sarak Duong	4/9/2016

Annex I

Statistics

TABLE I-1 WORLD RICE SUPPLY, DEMAND, AND TRADE BALANCE

World Rice Supply, Demand and Trade Balance -2007/8 to 2013/14

'000 metric tonnes (milled)

	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14
Production							
China	130,224	134,330	136,570	137,000	140,700	143,300	141,500
Indian Sub-continen	131,290	136,180	126,290	130,400	145,210	144,020	143,800
Peninsular SEA	53,413	55,763	58,033	59,986	64,091	63,941	64,900
<i>Of which Cambodia</i>	3,305	3,992	4,056	4,223	4,268	4,600	4,900
Indonesia	37,000	38,310	36,370	36,900	36,500	36,550	37,700
<i>Other</i>	80,727	82,915	82,798	85,723	115,815	118,239	120,947
Total	432,654	447,498	440,061	450,009	465,816	469,500	471,147
Consumption							
China	127,450	133,000	134,320	135,000	137,700	144,000	146,000
Indian Sub-continen	123,213	124,090	119,290	126,700	130,182	131,669	132,400
Indonesia	36,350	37,100	38,000	38,850	39,140	39,550	39,800
Africa - 6 Major	12,000	12,600	12,978	13,627	13,539	14,060	14,860
North America	4,430	4,411	4,377	4,657	3,844	4,100	4,040
EU-27	3,000	3,100	3,200	3,250	3,300	3,350	3,400
<i>Other</i>	121,343	121,635	125,552	125,313	128,495	130,171	149,745
Total	427,786	435,936	437,717	447,397	456,200	466,900	490,245
Trade (Exports)							
	2007	2008	2009	2010	2011	2012	2013 est.
India	5,809	3,498	2,127	2,490	4,759	9,330	10,000
Thailand	7,408	8,672	6,902	7,590	9,185	5,772	5,000
Vietnam	4,523	4,536	5,726	6,694	6,833	7,477	8,000
<i>Cambodia</i>	3	5	13	48	168	194	379
Pakistan	2,580	2,829	2,898	3,573	3,063	2,823	2,900
<i>Other</i>	11,565	9,611	8,283	9,379	10,996	15,801	18,721
Total	26,080	25,652	23,823	27,284	30,245	32,067	35,000
End stocks	79,966	91,528	93,872	96,484	105,500	103,300	N/A
Source:	USDA-ERS	Jan-14					



TABLE I-2 STRUCTURE OF PADDY AND MILLED RICE PRODUCTION AND TRADE IN CAMBODIA

Market Supply Chain		Tons
Farm production of wet paddy		9,389,961
<i>Less</i>		
Farm retained seed		469,498
Animal feed on farm		281,699
Loss (after harvest)		1,643,243
Farm Paddy Output		6,995,521
 Informal, small mills use paddy (<10t/hr)		 3,497,760
<i>Produce @ 60%</i>		
Milled rice for local consumption		2,098,656
 Larger mills (>10t/hr) use paddy:		 1,399,104
<i>Produce @ 65%</i>		
Milled rice		909,418
<i>of which they</i>		
Export		418,332
Domestic Sales		491,086
 Traders/ Buyers		
<i>Buy and export</i>		
Paddy		2,098,656
<i>to</i>		
Vietnam		1,364,127
Thailand		734,530
<i>a paddy balance is sold back to local millers</i>		524,664

Source: Rice-SDP estimates based on industry interviews and 2013-14 crop year statistics from MAFF

**TABLE I-3 LARGE RICE MILLS IN CAMBODIA CAPACITY
IN 2009 AND 2016 (MT PADDY/HOUR)**

Existing Mill 2009	Capacity 2009	Location	Capacity 2016
Angkor Rice (AKK)	10	Near PP	30
Golden Rice	20	Near PP	55
Green Trade	10	4 of 6 near PP	
Lor Ngor Peng	8	K. Cham	15
Loran Import-Export	12.5	Battambang	30
Men Sarun	24	PP	24
Phou Poy Rice Mill	9	Battambang	20
Sub-Total	93.5		174
New Mills			
Baitang	20	Battambang	45
BVB	30	K. Thom	80
Chhun Thom	10	Prey Veng	
QQ Rice	12	Pursat	
Sour Keang QC Rice	12	K. Cham	
Yam Leoung	10	Battambang	
Vinh Cheang	12	K. Cham	
Sub-Total	106		125
Rice Polishing			
Baitang	30	Battambang	45
Int'l Rice Trade	10	PP	
Khmer Foods	10	PP	15
Loran Import-Export	30	Battambang	30
Sub-Total	80		90
Rice Upgrading			
Ying & Yang Rice	10	Sih' Gile Port	10
Total	289.5		399

Source: Overview of Rice Production in Cambodia, Romnea Pech, Deputy Director of Department of Rice Crop, General Directorate of Agriculture, March 2013



TABLE I-4:- IMPORTS OF CAMBODIAN RICE, ALL TYPES, 2003 TO 2013

Importers	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Malaysia	0	542	2,486	44	462	992	1,213	1,075	14,062	24,719	61,823
France	129	1,801	1,148	1,967	1,370	1,646	9,235	26,253	39,387	46,827	57,232
New markets since 2010 + small,low-price and occasional markets											
Poland	0	0	0	23	0	0	0	0	30,927	32,942	55,879
Netherlands	0	911	1,739	0	504	0	0	1,127	9,426	13,505	29,699
China+HK+Mc	120	645	1	0	43	0	0	0	1,662	7,500	28,302
Gabon	0	0	0	0	0	0	0	0	0	6,856	14,708
Spain	0	0	0	1,973	0	0	227	280	1,368	257	11,792
UK	0	0	0	0	0	0	0	200	4,049	8,315	11,373
Germany	0	0	0	0	0	0	0	741	3,628	2,918	10,564
Italy	0	0	0	0	0	0	0	688	4,195	2,027	9,874
Belgium	1778	0	0	0	0	0	0	544	4,367	3,019	9,852
Czech Rep.	0	0	0	0	0	0	0	0	0	4,374	9,503
Portugal	0	0	0	0	0	0	0	2,379	3,951	3,361	5,895
Russian Fed.	0	0	0	0	0	0	0	1,752	21,301	8,315	3,600
Romania	0	0	0	0	0	312	96	0	5,544	9,799	1,900
Singapore	0	0	0	0	245	548	73	0	567	3,592	2,453
USA	0	0	57	0	15	227	17	827	2,093	1,389	1,779
Ghana	0	0	0	0	0	0	0	0	120	1,914	1,406
Australia	22	149	22	0	0	0	0	0	1,093	1,270	594
Philippines	0	0	0	0	0	0	1,674	18	0	96	0
Other	234	1,507	2,486	639	1,186	1,836	2,079	13,394	33,892	36,090	50,628
World	2,283	5,013	5,453	4,601	3,363	4,568	13,401	48,202	167,570	194,366	378,856
Number Importers	5	8	6	8	12	9	13	34	41	60	66
Production ('000tons)	2968	2627	3,121	3296	3305	3992	4056	4233	4268	4600	4,900
Available for export ('000 tons)	235	-150	251	336	305	772	786	863	818	985	1,100
Official exports as % available	0.08%	0.00%	0.19%	0.16%	0.11%	0.14%	0.41%	1.43%	4.86%	5.38%	9.97%
Official exports as % Prod.	0.08%	0.19%	0.17%	0.14%	0.10%	0.11%	0.33%	1.14%	3.93%	4.23%	7.73%

Source: UN Comtrade

TABLE I-4-: IMPORTS OF CAMBODIAN RICE, ALL TYPES, 2003 TO 2013

Existing Mills 2016	Capacity 2016
Agri Biż Khmer	16
Amru Rice (CMB)	16
Angkor Kasekam Roongroeung	30
Apsara Rice Company	20
Baitang (Kampuchea)	45
Battambang Rice Investment	10
BVB Ag. Development Company	80
Boost Riche Company	18
CARMA Rice Limited	12
CHYN Rice Import Export	22
City Rice Import	12
Domnak Teuk Group	12
Eang Heang Import-Export	20
Fedrice Battambang Company	10
Golden Daun Keo Rice Mill	65
Golden Rice	55
Hak Se Modern Rice Mill	8
Inochina Rice Mill	12
Kampong Thom Rice Mill Ltd.	8
Khmer Foods	15
Khy Thay Corporation	10
Lor Eak Heng Sek Meas Rice	15
Loran Group	30
Mega Green Imex Cambodia	8
Mekong Oryza	10
Men Sarun Import Export	24
MK Agricultural Partnership	12
Nikoline Rice Mill	12
Phou Py Development Im/Export	20
QC Rice Company	6
Signatures of Asia	15
SMCG Rice Company	4
Sok Keo Import Export	10
Soma Group	30
Tauch Tepich Import Export	12
Vong Bun Heng Import Export	30
White Gold Import Export	14
Total	748

Source: Compiled from Cambodian Rice, White Gold, www.TheWorldsBestRice.com

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