Yara International Entry Strategy for Cambodia

Bachelor of International Marketing

BI Norwegian Business School in partnership with Nanyang Technological University

April 24th 2014

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This paper is done as a part of the undergraduate program at BI Norwegian Business School. This does not entail that BI Norwegian Business School has cleared the methods applied, the results presented, or the conclusions drawn.
ACKNOWLEDGEMENTS

We would like to express our appreciation to everyone involved in the making of this thesis project.

First of all, we would like to thank Yara Asia Ltd for offering the opportunity to work with them on this thesis. We would especially like to show our gratitude towards CFO Alt Tangvald, for the time and information he provided.

We would also like to thank our thesis supervisor, Professor Wan Chew Yoong, for sharing his experience and insight. We appreciate the support and guidance throughout this exciting project.

In addition, we would like to give a special thanks to Professors Kang Kroesna, Hin Lyhoir and Chuong Sophal, for taking the time to meet with us and give us a better understanding of the needs and trends within the market.

Lastly, we would also like to thank all of the participants at the Royal University of Agriculture in Cambodia, for answering our survey, and helping us gain a deeper understanding of the Cambodian fertilizer market.

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EXECUTIVE SUMMARY

We wrote our thesis for Yara International ASA, a global firm specializing in agricultural products and environmental protection agents. The company has established operations in 54 countries within six continents, and is currently the largest fertilizer company in the world. Although Yara is already well-established in several countries, they are still looking take advantage of new international opportunities.

The goal of this thesis has therefore been to take a deeper look at the Cambodian agricultural market, in order to identify opportunities for Yara’s expansion, as well as develop a plan for entry.

As information on the Cambodian market was both limited and difficult to find, a combination of both primary and secondary sources was essential in order to acquire sufficient information. We gathered secondary data in order to develop general knowledge about the industry, as well as our target market. Secondly, we conducted primary data through both qualitative and quantitative methods. The primary data was conducted through the use of in-depth interviews, as well as surveys, both taking place at the Royal University of Agriculture in Cambodia.

Our research indicated a growing need for both improved knowledge, as well as higher quality fertilizers within the Cambodian market. Yara’s competitive advantage lies in their human resources as well as their high quality and range of products. Although there is not a very high level of competition among international companies, there are several local producers. From our primary research, we found preference for international brands, but a low level of awareness among foreign brands.
Based on our research and analysis, we developed a recommended strategy which can be divided into two categories: global strategy and business strategy. Regarding the global strategy, we recommended overseas sales office, with highlighted importance of choice of retailer and employees. On the topic of business strategy, we recommended a differentiation strategy, targeting high-end customers, and offering the existing product portfolio.
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1. INTRODUCTION & MOTIVATION

Yara International is a recognized brand throughout several parts of the world. The company has become one of the largest Norwegian companies with international success, and is continuously looking for opportunities to grow. Although Yara International is the largest fertilizer company in the world, it only holds an 8% market share on a worldwide basis. In a world where the word “globalization” is a hot topic, we wanted to evaluate how Yara can continue to work towards a more globalized fertilizer market.

Entrance strategies are not only the first step, but also one of the most crucial when it comes to international expansion. Cambodia is a developing country where Yara does not yet operate. The country already has a agricultural industry, with room for improvement. We therefore saw Cambodia as an interesting choice, with lots of opportunities when it came to finding a new market for Yara.

2. PROBLEM DEFINITION & METHODOLOGY:

2.1 PROBLEM DEFINITION

International agricultural investments in Cambodia have grown significantly since 2005 when the government encouraged investment in the agricultural sector by providing favorable conditions and tax incentives. Yara has not yet entered the Cambodian market; is this growth a potential opportunity for Yara, and if so, which entry-strategy should they use?

2.2 RESEARCH METHODOLOGY:

In order to collect sufficient information and data to answer our problem definition, we chose a combination of research designs. As we knew very little about the topic, we needed to start with
an explorative design. This is a qualitative approach suited for either exploring a topic closely, or finding Information surrounding areas where the decision-market has limited information (Gripsrud, Olsson and Silkoset 2010, p.39). The types of data collection methods used here was a combination of relevant secondary data, as well as primary data through the use of individual in-depth interviews.

2.2.1 Secondary Data
Our secondary data is based on articles, online webpages and professional literature, leading us to a number of assumptions. In order to test these assumptions, we conducted primary research, which took place in Cambodia. The secondary data was mainly used in order to conduct an analysis of the external and internal environment.

2.2.2 Qualitative Research
We continued with the explorative design using in-depth interviews. In order to get in-depth information about the Cambodian market (See Appendix A for a complete list of sections we wanted further insight into), we visited the Royal University of Agriculture in Cambodia on the 3rd of April to interview three representatives from The Royal University of Agriculture: Prof. Dr. Kang Kroesna, dean of the Faculty of Agricultural Technology and Management, Hin Lyhour, head of Planning and International Cooperation Office and Prof. Chuong Sophal, dean of Agronomy Faculty. All three interviews lasted between 45min. to one hour (See Appendix B for interview guide and Appendix C for answers). This approach was necessary in order to fulfill our objectives, as the access to secondary data was extremely limited.

2.2.3 Quantitative Research
Based on our survey at the Royal University of Agriculture in Cambodia (RUA) we wanted to get a better overview about the general knowledge among the people considered “the future of
the industry”. We therefore used a descriptive design by conducting a structured, quantitative survey. This design is used when there is a basic understanding of concerning problems, with a purpose of describing the situation within a given area (Gripsrud, Olsson and Silkoset 2010:41). We surveyed 100 students at the Royal University of Agriculture in Cambodia. Of the 100 respondents, we were able to use 88 for further analysis due to the high number of missing values in the rest of them. We designed the survey to examine consumer perceptions and knowledge within the Cambodian agricultural market, as well as the application of NPK and Urea. We used JMP to analyze the data. The questions used to form this questionnaire are based on information from both secondary resources, as well as the in-depth interviews. The complete survey with answers can be found in Appendix D, and the JMP analyses can be found in Appendices G through M.

2.3 LIMITATIONS
We have taken into consideration the following limitations of our conducted studies.

- All respondents who participated in our survey were students
- The amount of responses is not big enough to generalize responses
- Limitations have a slight affect reliability and validity of research findings

3. LITERATURE REVIEW

Cambodian Agriculture: Adaptation to Climate Change Impact: This research paper explained the current climatic trends and how climate changes has affected the agricultural industry as a whole, and farmers in different areas. This paper also covered how these changes alters the effects of fertilizers and crop results. This research gave us an early indication of the farmers
lack of agricultural knowledge in terms of not adapting to weather conditions and misuse of fertilizers. (Thomas, Ponlok, et al, 2013)

*Foreign Investment in Cambodia: A study of recent trends*, provided a clear overview of the agricultural opportunities and challenges in Cambodia and linked it to trends in social, environmental and economic factors. The Cambodian government’s investment in the sector and the growing export of agricultural products was some of the key findings in that research paper. (Socheth, 2012).

*Review of Agricultural Policy and Policy Research: A Policy Discussion Paper*, Informs about how Cambodia uses its agricultural industry as a key driver for their entire economy, and suggests improvements for the government when looking at strategic policy and knowledge. This text does not give any in-depth analysis, but rather a general overview of how to improve the current situation. This paper confirmed our initial beliefs about the agriculture in Cambodia being one of the biggest industries in the country. (Vuthy, Ra, 2011).

4. COMPANY INTRODUCTION:

4.1 HISTORY OF YARA

Yara International is a global firm specializing in agricultural products and environmental protection agents. The company’s overall vision is to be an industry shaper, with the core values of ambition, trust, accountability and teamwork.

Dating back to 1905, Yara started as a division of Norsk Hydro, a Norwegian industrial firm. During this time, the company produced the first nitrogen fertilizer in the world, and started to grow internationally. Yara demerged from Norsk Hydro and debuted on the Oslo Stock
Exchange in 2004. Since then the company has gone through a series of joint ventures, acquisitions, and expansions worldwide.

Today Yara International has become one of the world’s leading fertilizer producers. The company delivers solutions for agriculture, the environment, and industry operations, while focusing on global challenges, accountability and sustainable growth.

4.2 ABOUT THE COMPANY

Yara International offers a range of specialized products within agricultural and industrial products, as well as environmental solutions. They operate through three different segments; upstream, downstream and industrial. All three segments are managed as separate units with the segment management located in Oslo, Norway.

Yara is already well established throughout the world. As of 2011, Yara International has production on six continents, operations in 54 countries and sales to about 150 countries. In order to reach their goal of increasing sales volumes by 8 million tons from 2010 to 2016, they will have a focus on both productivity and growth.

The company has a lean structure with 8,052 employees worldwide, with Jørgen Ole Haslestad as CEO and president as of 2008. Throughout this thesis, our focus will be relating to the downstream segment, which consists of worldwide sales and marketing organization, as well as Yara’s global distribution network.

4.3 PRODUCT LINE

Yara International offers products and services within fertilizers, animal nutrition, and industrial solutions. Their portfolio within the fertilizer industry ranges from single-nutrient fertilizers to complex compounds and micronutrients for a variety of crops. Of these, our thesis will focus
mainly on the complex compound NPK that consists of Nitrogen (N), Phosphorus (P) and Potassium (K).

5. EXTERNAL ENVIRONMENT

5.1 MACRO ENVIRONMENTAL FACTORS IN CAMBODIA:

The PESTE analysis is used to find the macro environmental factors a company must take into consideration before entering a new market (Hitt et al., 2012, p.35-44).

Political:
Cambodia has been a member of both AFTA and the WTO since 2003. The country operates in a free-market, has no protection policy to favor local fertilizer production plants, and has eliminated quantitative restrictions on the import of fertilizer as of June 2005.

In 2010, the Cambodian government decided to provide tax incentives and conditions supporting investments in agriculture. This applies to both local and local foreign firms, and indicates that Cambodia has become more open to external investors. This includes zero tariffs on the import of agricultural materials including fertilizers, equipment, pesticide and seeds. However, the majority of farmers in Cambodia only manage small areas of land, and most of these farmers lack capital investment for more technological advanced agricultural materials.

The Agriculture Technology Services Association (ATSA) was established and registered with the Ministry of Interior of the Royal Government of Cambodia and the local authorities on March 6 2007. The ATSA team is composed of a small team of professionals dedicated to the development of Cambodian farmers by providing high quality training, research, marketing, and management services.
According to Transparency International, Cambodia is ranked the most corrupt country in Southeast Asia, which could cause complications in the early stages of entry. On top of this, there is a low level of transparency in the licensing process of fertilizer, along with poor quality control and inspection.

Economic:
According to CIA’s World Factbook was the GDP growth in Cambodia slowed during the global economic downturn in 2008-2009, but picked up again to reach a four-year high of 7.3% in 2012. Overall Cambodia’s economy has grown rapidly, at more than 8 percent per year, between 2004 and 2012. The economy continued to grow at around 7 percent in 2013. This growth was driven by private investment, strong exports, and underpinned by a solid macroeconomic position. Economic growth also broadened over the past few years thanks to sustained growth in the agricultural sector, driven by increases in rice prices in global markets.

The International Institute for Sustainable Development reports that in order to further development, 13.19% of public investment was allocated to agriculture in the time period 2009 to 2012 by the Cambodian government. The Cambodian government also put 21.57% of public investment into further development of infrastructure, which includes water supply and transportation.

The rice export has appreciated due to heavy competition from countries like Thailand, Myanmar and Vietnam. Prime Minister Hu Sen set a target to export 1 million tons by 2015, and requested further investments to expand their shipments (Suwannakij, 2013).
Finally, according to the Asian Development Outlook, growth for 2014 is expected to pick up from 7.2% to 7.5% as recovery gains traction in Europe and the United States. So far, most sectors have performed as projected.

Sociocultural:
Poverty in Cambodia has fallen sharply during recent years. The World Bank estimates suggest that Cambodia achieved the Millennium Development Goal (MDG) of halving poverty in 2009. However, a vast majority of families who were lifted out of poverty were only able to do so by a small margin. Therefore, despite the fall in poverty, Cambodia remains one of the poorest countries in Asia. Long-term economic development remains a daunting challenge, inhibited by endemic corruption, limited educational opportunities, high-income inequality, and poor job prospects.

The World Bank also reports that, as of today, the poverty rate is 20.5 percent. Still about 2.8 million people are poor and about 90% of them live in the countryside. As much as 81.7% of the country's population lives in rural areas, which could explain why as much as 70% of the population works within the agricultural industry. According to Index Mundi, the birth rate in Cambodia is relatively high, being 24.88 births/1000 population per year, sustaining the future workforce of the country.

The National Population Census for Cambodia in 2008 reported an adult illiteracy rate of 77.6%, with a high correlation between poverty and illiteracy. Education is a crucial element for further development of the country and poverty reduction. The constitution offers 9 years of compensatory education for everyone; however, this law is not widely enforced.
There are also several challenges connected to the educational system. The attendance among students in the rural areas is poor and there are not enough qualified teachers. For upper levels, students pay bribes in order to pass exams or ensure admission to schools offering higher education. According to our quantitative and qualitative survey, the lack of education and general knowledge is a huge problem among the farmers in Cambodia as they misuse the fertilizers.

Technological:
Technological growth in the agricultural sector, such as the Green Revolution of recent decades, along with some expansion of agricultural land, has generally managed to supply the world’s population with sufficient food despite explosive population growth in the last century.

According to the Environmental Protection Agency, monitoring and information technology, biotechnology, and a variety of other technologies are converging in agriculture to fundamentally change the way crops are grown. Biotechnology applications has shortened the time of development for new hybrids with high yield potential and given them stronger durability to pests and environmental hard conditions. One could therefore say that agriculture is transforming into a biological manufacturing industry through the combination of biotechnology and mechanical technology that defends the growth environment from moisture, pest and potential diseases.

In addition, land capability assessment is being developed to support the expansion of cropping in uplands of Cambodia. DSSAT (The Decision Support System for Agrotechnology Transfer),
an agroecosystem model, was used to determine potential yields of field crops in Cambodia to assist in the rating land capability.

**Environmental:**

Cambodia has two distinct seasons - wet and dry - and is subject to monsoon seasons, resulting in problems with both droughts and floods. From looking at data between 1950-2000, there exists a large variation across the country with less than 1,150 mm. annual rainfall in the north and over 3,000 mm. along the coast. Temperatures also vary from a low of about 27 degrees in the western region, to over 36 celsius in the northern region (Thomas, Ponlok, and et al).

According to the Ministry of Agriculture and The Signatures of Asia, the 12 provinces most fertile for agricultural production are Kampong Thom, Kampong Cham, Thong Khmum, Svay Rieng, Prey Veng, Takeo, Kampot, Kamponh Chhnang, Pursat, Battambang, Siem Reap and Banteay Meanchey.

The environmental factors indicate a need for helping farmers deal with floods and draughts. This includes both helping with information and tips, as well as specialized fertilizer to meet specific needs depending on weather conditions.

**Key Findings of Macro Environmental Factors**

The Cambodian government has tax incentives and conditions supporting investments in agriculture and also provides subsidies for companies willing to invest in its industry. The government also got no requirements for foreign investors to team up in joint ventures with Cambodian firms when establishing companies. The economic growth has been great after the recession in 2008.
Some of the challenges in Cambodia is the endemic corruption which makes it inefficient and hard for foreign investors to do ethical business. The infrastructure makes it hard to ship products around the country, and makes it harder for farmers to export their products. The farmers in Cambodia are lacking in terms of knowledge and education in the agricultural industry and this might be the biggest threat.

### 5.2 INDUSTRIAL ENVIRONMENT: The Fertilizer Production/Distribution Industry

Porters five forces is used in order to evaluate the attractiveness of the industry. (Hitt et al., 2012, p.47-55)

**Threat of New Entrants:**

Cambodia’s governmental policy towards foreign business startups is generally positive and there is no requirement for foreign companies to team up with a Cambodian partner (Carty, 2014). This means that startups in Cambodia can be fully owned by foreign investors. If an investment of 1,000,000 USD or more is made into the agricultural industry through SEZ (special economic zones), the government will provide incentives for zone developers. (See Appendix E for list of incentives)

The high number of already established fertilizer companies (86 according to Cambodia Yellow pages, 2014) indicates that the market is somewhat saturated or that there is many SMEs operating within the fertilizer industry. The general openness to foreign investment and even the incentives provided by the Cambodian government makes the market more attractive for new entrants. We consider the threat of new entrants as medium.
Threat of Substitutes:

According to Yara, organic fertilizer such as crop residues and animal manures contain low nutrient concentration is one of the main substitutes for Yara’s NPK fertilizer. Although organic fertilizer has high availability, and often an inconsistent quality, it is generally more supported by the government as a result of overuse of chemicals in the past.

A substantial potential for grain/oilseed is for producers to recycle and utilize efficiently livestock waste nutrients for crop production. However, there are crop producers that don’t have access to these alternatives or lack knowledge about recycling. “Free fertilizer” alternatives such as coffee grounds, eggshells, compost and wood ash are viable options, but do not pose as a real threat.

Although the threat of organic fertilizers can be seen as high, mineral fertilizers are necessary to replace nutrients that have been removed from the field. The threat of substitutes is therefore seen as medium.

Bargaining Power of Customers:

Due to fertilizer being a less differentiated product, the switching costs are low. However, it is possible for companies within the field to differentiate themselves through value adding services. Creating familiarity towards the most efficient product application methods and obtaining loyalty will in turn create a higher switching-cost for the customers.

Using mineral fertilizer will result in lower production costs, and more production per unit of land. In order for the fertilizer to reach its full potential, farmers should apply the recommended amount per hectare. However, due to the high fertilizer prices and the limited resources of
Cambodian farmers, the amount of fertilizer used is significantly lower than the recommended quantity of fertilizer per hectare (Blair and Blair, 2010). This makes Cambodian farmers price sensitive and more likely to choose products of lower quality in order to afford larger quantities at a lower price. The farmers might not see the value of investing in mineral fertilizer of higher quality.

According to CBRE is the total NPK fertilizer market estimated to be 700,000 tons in Cambodia. Customers in agricultural industry mainly consist of farmers, distributors and cooperatives. A single customer does not purchase a large enough portion of the industry’s total output to account for a significant portion of Yara’s annual revenues, which reduces their bargaining power. The overall customer bargaining power in Cambodia is moderate.

**Bargaining Power of Suppliers:**

Due to price appreciation of raw materials, the fertilizer industry has paid more attention to consolidations within the industry. Especially the potassium market contains rather few suppliers of raw materials (Duong CHHV, 2011).

There are fewer large suppliers of phosphate and potash fertilizers but the fertilizers of Nitrogen is made in a vast selection of countries, showing the big availability of raw materials, such as gasses and air, which industrial scale production needs. The market consists of huge companies, which means they often have economies of scale. Based on this we see the bargain power of suppliers as low.

**Rivalry Among Existing Competitors:**

Cambodia gets most of its fertilizers from Thailand and Vietnam. Much of the fertilizer being
imported from Vietnam has below acceptable quality, which bring us to one of the key issues. In addition to imports, there are about 86 enlisted fertilizer companies in the Cambodian yellow pages.

The main competitors in the Cambodian market are foreign companies mainly from Vietnam, Thailand, and Japan. This would include companies such as Mosaic, PetroVietnam and Buffalo head, as well as Agrosol which is an Austrian company still in it’s trial period.

Among local competitors the rivalry is high, as the products are usually of lower quality and differentiation. For the global agricultural companies the rivalry countered to the local companies will be lowered due to the higher quality and differentiation they offer but will be driven higher being affected by the high prices. The overall rivalry among existing competitors is therefore seen as medium.

**Key Finding of the Industrial Environment:**

The governmental subsidization of Agricultural investments and the general openness of foreign investment makes the Cambodian market attractive. There is no well-established International companies in Cambodia, in other words a low competition. Pricing however seems to be an issue since the farmers and distributors seems to be buying large quantities of low quality fertilizers. The neighbor countries, Thailand and Vietnam have large influence and better conditions for logistics, which is hard for competitors to compete with. Based on these observations the market attractiveness is considered moderate.
6. INTERNAL ENVIRONMENT

6.1 VALUE CHAIN

The Value Chain Analysis is used to identify the primary and support activities in order to add value to the product and find out where costs can be reduced. After this it will be easier to identify the core competencies of the company.

6.1.1 Support

*Firms Infrastructure:*

For the administrative functions, the President and the CEO have the responsibility of the day to day management. In addition Yara has a board of Directors of seven members, that consists of 4 independent “shareholder-elected” and 3 that are “employee-elected”. The management follows Norwegian corporate law and the board is responsible for the company’s overall management, by overseeing the company's activities and ensuring the appropriate steering. (Yara, 2014, “Board of Directors”).

Yara follows its written set of directives to help them regulate the performance of the management and the overall business processes. All of the companys activities strictly follow the Code of Conduct, their Ethics Program and the principles stated in the Ethics Handbook.

“*Yara is constantly developing its performance culture based on the core values of Ambition, Trust, Accountability and Teamwork – which recognizes and promotes high performance and high ethical standards among leaders and employees, globally and at all levels*”

*Human Resources:*

Yara wants to optimize the management of their employees to make sure they continue to have
engaged and skilled workers for all the challenges they may meet in the future. Human Resource (from now on referred to as “HR”) operations in the company have throughout times been decentralized and disaggregated, but a new HR strategy was approved by the Management Team in 2012. This strategy contains restructuring of the HR delivery model with the purpose of improving both effectiveness and efficiency within the company’s HR operations. This global HR strategy has led to more standardized practices and policies. The industry is dominated by men with only about 20% females in today’s workforce, but Yara is working to attract more women to the company (Yara, 2009).

According to Yara’s CFO in Singapore, Alf Tangvald, Yara’s Human Resources is a huge strength for the company. Yara operates in over 50 countries with a talented workforce from different backgrounds, cultures and nationalities. They have highly qualified people to find new recruitment, as well as train them effectively so they can manage to do their job as fast as possible without any problems.

Technology Development:

Yara’s main goal within Technology Development is to be the “Industry Shaper”, in other words they want to forefront new technology and products. The company has a technology center based in Norway and a research center based in Germany, with experts that continuously works to improve the existing products to create more value to the customer. In 2012, Yara spent 18.5 million USD on research and development. According to Tangvald, the key to compete internationally is research and development.
**Procurement:**

Yara's Central Procurement Department is conducting the overall Procurement strategy, administration and processes while coordinating the procurement network among all operating countries. In order to build local market expertise and be close to customers, the department conducts strategies that aim for the understanding and adaption to the local needs finding optimal solutions and guarantees the quality of supply. In addition to the local centralized focus, Procurement is organized in categories across the operating countries, in order to ensure that potential synergies will be identified and captured. (Yara, 2014, “Suppliers”)

6.1.2 Primary Activities:

**Inbound Logistics:**

Receiving raw materials: 90% of Yara’s operational cash costs are raw materials, energy and freight (Yara International 2014 “Yara Fertilizer Industry Handbook”), meaning it is crucial to keep the costs of these down. Their suppliers range from local service providers to global producers, and the company focuses on larger, long term contracts with suppliers. Yara uses Infor Advanced planning module to analyze raw material sourcing options, among other operations. This allows them to more accurately predict the amount of raw materials needed for production.

Transportation and storage: To improve reliability and security during transportation, Yara used a tracking system. Raw materials for the production of NPK are kept at the Porsgrunn plant, where they have large storage facilities as well as loading facilities for bulk deliveries. Yara has, along with other producers, an industry code for the storage of their raw materials.
Being the largest fertilizer companies in the world, the distribution of raw materials and in-process goods is made between the vast selection of Yara’s factories around the world. They can stay profitable as a result of the ability to buy large quantities at low cost, creating an economy of scale throughout the firm. Yara’s management of raw and in-process materials at their ammonia production facilities contributes in adding value to the inbound logistics activities.

*Operations:*

In short, Yara’s operations consist of converting energy, minerals and nitrogen into essential high quality agricultural products, and delivering them to their industrial customers. For this to happen, they have to perform in three operating segments: Upstream, Downstream and Industrial. The Supply and Trade is responsible for the global optimization that keeps all functions connected.

Within Supply and Trade there is a global network of suppliers, logistics experts, terminals and maritime storage facilities. Yara manages to deliver competitive products worldwide within specified time frames, having an efficient response to the continuous changing market conditions. (Yara, 2014, “Supply and Trade”).

The Upstream operation segment refers to the total production system that includes the large-scale worldwide ammonia and fertilizer plants and the phosphate mines. The high operational efficiency and competitive raw material sourcing has given Upstream a significant edge by providing a unique world-class manufacturing base for Yara’s production. This makes Yara International the world’s largest producer of ammonia, nitrate and NPK. (Yara, 2014, “Upstream”).
Following the Upstream operations, the finalized products are then sold and distributed by Downstream. The Downstream operation consists of Yara’s global sales and marketing organization as well as the worldwide distribution network for their fertilizer products. Their total sales offices are spread worldwide in more than fifty countries selling to more than 120 countries. (Yara, 2014, “Downstream”).

The last segment, the Industrial segment, develops applications and sells products and technology to firms in non-fertilizer industries such as chemicals, civil explosives, food and beverages. It consists of five business units that covers technical nitrates, CO2, nitrogen chemicals and environmental solutions units. (Yara, 2014, “Industrial”).

*Outbound Logistics:*

Yara uses two forms of logistics: “Bulk in container” (BIC), as well as “bagged and palletized in container”. The first is the most cost efficient in large quantities brought close to the end consumer by freight ships. “Bagged and palletized” in trucks is more costly but is easier to bring directly to the desired destination. This method of transportation is more convenient for transporting the goods to rural areas far from sea ports, or to countries with poor infrastructure.

Yara’s biggest NPK production site is located in Porsgrunn, Norway, a location quite distant from their end-consumers in the Asian markets. This has often proven to be cost inefficient in terms of production costs (due to the high labour costs in Norway), but also for logistics costs in a long term perspective. Their Asian headquarters is located in Singapore due to tax benefits and its strategic position for logistics and being within the proximity of other major Asian and European companies. The Asian sales offices present their reports to the Singapore Regional Office. Along with the Head of Operations they develop targets, business plans, critical success
factors and set up budgets. Freighting 40,000 million tons of fertilizers from Porsgrunn to the Asian markets, costs per ton is, according to CEO Alf Tangvald, about 40 USD. The high outbound logistics costs are seen as one of Yara’s biggest disadvantage compared to some of their competitors that have an established production site in Asia. These companies are not only closer to the customers, but also require lower payments for delivery, not to mention better local experience and knowledge.

*Marketing (Including Sales):*

Analytical services are one of Yara’s biggest strengths as they use their unique experience and knowledge to improve the value and service for the customer. By testing and analyzing soil, water and tissue samples they ensures accurate decisions and product recommendations that are responsible, cost effective and efficient. In addition, Yara is able to process the samples within three business days.

Interpretation and making sure the consumer understand the results is crucial. Therefore, the advisory team also presents the results in a straightforward manner so that the customers have a full understanding of the analytical data. This is where Yara’s Megalab software becomes essential. The software provides information about nutrient guidelines, and uses cropping information to convert analytical data into easily understandable information.

Through their sales managers, Yara has acquired leading country and industry specific market knowledge. They are able to identify the needs of the customers, as well as communicating Yara’s differentiated value, value-adding services and Yara’s way of thinking. Due to their wide range of services and products, the company is also able to offer all the products, chemicals and consultation needed to develop the right solution for their specific needs. By being a “one-stop-
shop” the customers do not need to go to different suppliers/distributors to find the right
fertilizers, which saves the customers for valuable resources and time. By working closely
together with the customers, Yara is able to create long-term customer relationships and increase
customer loyalty.

**Services:**

Yara has incorporated the Customer Relationship Management system “my SAPTM”. This
system enables them to be more efficient when it comes to customer follow-up, and share
knowledge and information across departments in order to make correct and rapid decisions
(SAP AG, 2004).

6.1.3 Core competencies

**Human Resources:**

Yara’s main core competency is HR management. The company operates in several countries
throughout the world, and has a highly skilled workforce from diverse cultural and academic
backgrounds. Highly talented employees recruit new people to the company and train them
effectively in order to understand how they operate and implement the “Yara way of thinking”.

**Technology:**

The R&D experts in the technology centers in Norway and Germany are key in becoming an
“Industry Shaper” within technology and products. Their products have been carefully tested
under different conditions to meet their end-consumers needs. As a result of this competency,
Yara’s product portfolio has become one of the most wide and differentiated in the world.

**Operations:**

Yara’s well established global network of suppliers and logistics experts in addition to with their
unique manufacturing base has proven to be essential for the companies success. Yara’s
Operations is allowing them to produce high quality fertilizers in huge volumes and distribute them safe and in time to customers all over the world.

Marketing

The marketing and services fit to suit the existing level of knowledge in each market and through analytical services and long-term experience educate and constantly add value towards their customers.

6.1.4 Competitive Advantage

Managing the marketing and sales services through their highly skilled and experienced Human Resources is creating a competitive advantage for Yara. This has been critical during the establishing process in a new market in order to educate the potential customers about their unique brand portfolio and the advantages it offers and give the company an edge in the market.

7. PRIMARY RESEARCH

7.1 RESEARCH PURPOSE

The purpose of our primary research was to get a better understanding of the challenges and opportunities in the Cambodian market. We have completed both quantitative and qualitative research at the Royal University of Agriculture in Cambodia.
7.2 RESEARCH FINDINGS

7.2.1 Qualitative Research Findings:

1. Current economic situation

- There are three important sectors for contribution of GDP: industry, service and agriculture. Agriculture is definitely important in order to sustain the economic growth. Rice remains the main crop that is being produced and exported, followed up by cassava and corn.

2. Trends and common methods

- The sizes of farms are increasing, and the production frequency period is transforming from traditional to intensive. There is an increase in the use of agricultural machines, but most local farmers still prefer using traditional equipment.

- Despite the governmental policies that are trying to support the use of organic fertilizers, the farmers still tend to prefer the use of chemicals.

- Urea does not have all the important nutrition for crops, and is usually applied to the soil only during the first phase. When the crops reach a certain level of growth it is necessary to apply NPK in order to secure faster and higher growth of the products, including rice that is the broadest product in the industry.

- A new characteristic of the Cambodian market in the past years has been that in some prominences the farmers can get the fertilizers in advance in order to test-use them over one season, and pay back their suppliers after the production is sold. This is most popular among Vietnamese companies, and most other international companies don’t follow this policy.
3. Weaknesses and challenges

- There is a possible challenge of labor shortage, especially from the younger ages who prefer working in factories than in the fields. The elderly farmers remaining are getting weaker and are not familiar with the new machinery or techniques.

- Lack of knowledge surrounding the correct use and timing for applying fertilizers has been proven to be harmful. Normally the production would start in April, but as a result of the climate changes it has being delayed; this often results to a too broad use of chemical fertilizer instead of organic (due to lack of knowledge), this overuse of chemicals, often destroying the crops.

- In order to promote the Cambodian economy the farmers should consider taking part of their focus off the rice production over to other, more expensive and thus profitable products as fresh vegetables and fruits. The challenge again here will be the lack of storage facilities so this kind of production may become riskier as the farmers will have to have an effective value chain that will allow them to sell out their products in a shorter time period than rice that can easily be stored and held in inventory.

4. Needs in the industry

- The living standard in Cambodia is increasing. As a result the consumers demand higher quality products, but local farmers don’t have enough knowledge to adapt to these needs. It would therefore be sufficient for an international company that wants to establish its business in Cambodia to offer education to the farmers. This should help the overall understanding of how to use high-quality fertilizers effectively. Higher quality of products will give an advantage to the industry.
5. Competitiveness in Cambodia

-Although there are some local factories in Cambodia, most of the fertilizers are imported from Vietnam, Thailand and Japan. There are more and more Vietnamese companies that offer trial periods for their products and crave the payment only after the harvest is over. If at this time the farmers don’t have enough to pay back, they have to sell the land in order to pay off their debt.
-Despite the fact that rice products have become better and better over the past years, there is still room for improvement in order to compete with the neighbor countries (Thailand, Vietnam)

6. Expert’s recommendations

Cambodia is in need of higher quality fertilizers alongside with education about how to efficiently apply them both in terms of timing and method. The farmers in Cambodia has to be sure they have a full understanding and knowledge of how and when to apply those specific fertilizers. By approaching and hiring staff in collaboration with NGOs or the Ministry of Agriculture this process may become easier and succeed. The international products are perceived to be of higher quality, and their entrance in Cambodia would lead to producing in higher volumes. This would make it easier for Cambodia to compete with the other countries in the region. (See Appendix F for the complete quotation on the experts recommendations)

7.2.2 Quantitative Research findings:

1. Rice production has traditionally been the primary choice of crop among Cambodian farmers. When the respondents were asked what they would prefer to focus on if they owned their own agricultural company, 81% of the respondents chose rice to be among their main-focus products, and 50% of these respondents wanted to focus on rice exclusively (Appendix G). This supports Prof. Chuong Sophal’s statement that that rice may remain the main crop that is being produced and exported, as the local farmers are
still skeptical to turning their focus over to high end products like fresh fruits and vegetables since they is still lack the necessary knowledge and about the higher potential return of investment.

2. Even though the majority of the respondents would choose rice as their primary product if they owned an agricultural company, 83% of the respondents agreed that Cambodians agriculture would rise if there was a higher focus on high-end products like vegetables and fruits (Appendix H).

3. 77% of the respondents believed that Urea was not good enough for their products (Appendix I), and 68% of the respondents would choose NPK over Urea if they owned their own agricultural company (Appendix J).

4. When asked about the efficiency, 62% of the respondents believed NPK was significantly more effective than Urea for most high-end farmers. However, over 70% of the same respondents that agreed that NPK was more effective than urea felt that NPK is too expensive for most high-end farmers in Cambodia (Appendix K).

5. As for the perception about international fertilizer companies and their potential willingness to cooperate with foreign investors in the future, 67% of the respondents were preferable to buying products from a foreign distributor (Appendix L). This is an indication of their openness to higher quality fertilizers that are produced abroad.

6. Based on the feedback in optional “comment” section we have found that a majority of the respondents believe that lack of education is a huge problem for the farmers. This summarizes the main findings; that Cambodian farmers need more knowledge (Appendix M).
8. STRATEGY

The findings of the above analyses are summarized in a strengths, weaknesses, opportunities and threats (SWOT) analysis in order to give a clear basis for conducting the Global and Business strategy the company has to follow.

8.1 SWOT

![SWOT Analysis Diagram]

8.2 STRATEGIC PROBLEM DEFINITION

*How can Yara leverage on their high quality physical products along with their expertise in the field in order to effectively communicate with the intention of resolving the lack-of-knowledge barrier within the Cambodian market, while simultaneously granting the needed market intelligence and control that will secure long term operational success in Cambodia?*
8.3 GOALS

Short term (5 first years of operations)

- Hire Sales agronomists with expertise that cover 4 of the 12 most fertile provinces during the establishing process.
- Reach a 4% market share in the Cambodia fertilizer market within the first 4 years of operations.
- Reach the investments breakeven point within 3 years.

Long term (5-15 years of operations)

- Create a network of retailers in every province with a total amount of 80-120 within 10 years of operations.
- Expand the amount of hired sales agronomists in order to cover all 12 highly productive provinces in Cambodia within 15 years.

8.4 CRITICAL SUCCESS FACTORS

- Increase Yara’s market intelligence and familiarity in the Cambodian Market.
- Allocate and hire the suitable staff for managing the operation.
- Identify and educate key direct customers (retailers).

8.5 NINE STRATEGIC WINDOWS

Evaluating the company's preparedness for internationalisation and the globality of the industry according to “Solbergs 9 strategic windows” (Solberg, 2009, p.149, 151-152) will give an indication about the global strategy the firm should follow at that certain point (See Appendix N for figure of this model).
**Preparedness for Internationalisation:**

Yara has highly evolved international culture and capability, with a substantial amount of international experience. They have reached a dominant position in some export markets, with established operations in 54 countries within six continents: North America, South America, Europe, Africa, Asia and Australia.

In addition, Yara has a solid position in their established main markets sustaining their growth in Europe and has worked actively to develop further markets outside of Europe executing major acquisitions in Brazil and Columbia in 2013.

**Industry Globality:**

The fertilizer industry is seen as a “multi country” industry. Although Yara is the world's largest fertilizer company, it only hold a 8% market share worldwide. Most countries have local fertilizer plants, and there is therefore still a high amount of fertilizer being locally produced and distributed.

**Enter New Business Areas**

As Yara has a high level of preparedness for internationalization, and the industry is identified as “multi country”, they are positioned in the 3rd window of Solbergs nine strategic windows, “Enter new business areas”.

Based on this position, they should seek growth through developing new international business areas by seeking new markets. Yara should thereby take advantage of the experience and position they have already acquired through previous and current international operations.
8.6 GLOBAL STRATEGY - ENTRY MODE

8.6.1 Overseas Sales Office:
Yara has both the experience and financial strength to approach a new country through an entry mode that requires a high amount of investment. Cambodia is a developing country with a constant market growth, low entry barriers, and increased governmental focus on enhancing the industry. In addition to this, the competition level from foreign fertilizers is extremely low. We therefore believe that the most efficient way to approach the market is to set up an overseas sales office.

This mode of entry will enable them to reach out to the market with good control, as well as reaching the desired sales volume faster (Solberg, 2009, p.259-261). Yara´s pricing strategy is, as we will see later in the recommended business strategy, to position themselves higher than the market prices, so it is therefore crucial to maximize the control during the start-up phase. Also, in terms of effective marketing and creating higher brand awareness, it will allow them to efficiently adjust their marketing measures accordingly to the market drivers.

Finally, based on our primary data research analysis, it is critical for Yara to reach the customers and educate them about the applications, advantages and range of their product portfolio. This is important as the wrong application can result in reduced performance (see Appendix O for example of this). Setting up a sales office is definitely the alternative that will enhance those actions and contribute in overcoming the lack-of-knowledge barrier in the market effectively both in terms of time and efficiency.
8.6.2 Establishing Process

There is no standardized process of setting up an overseas sales office when entering a new market. The appropriate actions will depend on the existing entrance barriers and regulations in each area, as well as the company’s existing market familiarity and resources.

Yara’s first step in this process will be to create a corresponding database desktop for Cambodia. The database will be completed through research, and will include all the critical information. This should include the current market drivers, trends, product volumes and price indexes that should give a conclusion about how big potential lies within it. These studies can be bought from an external research company with high expertise.

After identifying an existence of market potential in Cambodia, Yara has to create a primary database through experiments and observations. This should be carried out by an internal expert within agronomy with high knowledge and critical thinking. His objectives will be to conduct an in-depth analysis of the market, visit the locations of interest, evaluate the infrastructure and search for potential retailers. This person will, in the final stage of the research, decide whether the outcome has been positive and give the “green light” for establishment.

In order to continue forward, there are some legal procedures that will have to be taken care of. By hiring attorneys Yara must find the legal path they will have to follow throughout the process. The next step will be, through lobbying, to create goodwill among the authorities. Yara must assure the ministry of agriculture and other politicians or ambassadors of their interest in creating value for both parties in a safe, lawful and ethical way.
After finding a convenient location for the sales office, it is time to allocate the staff that will operate in Cambodia. The staff has to consist of the Head of Operations along with marketing and finance managers. The primary objective of the Head of Operations will be to seek, target and reach out to highly qualified local agronomy experts and hire them into the position of sales agronomists. These agronomists can be identified and located through the Ministry of Agriculture or in collaboration with Non Governmental Organisations. They will have a vital role in the success of the company during the training process, ensuring Yara overcomes the lack-of-knowledge barrier. Finding the suitable persons for these positions will therefore be critical. This will be the final stage of establishing the sales office and Yara will from this point on be ready to proceed with further actions and strategies with the purpose of gaining brand awareness, sales volume and loyalty among customers. The entire establishing process should be estimated to take from two to three years to complete. (See Appendix P for graphic illustration of the Establishing Process)

8.6.3 Risk

In general there are some risks underlying the use of an overseas sales office taking when into account establishing new routines, leadership-policy and customs. Firstly, local competitors may press the government to introduce new laws and restrictions in order to reduce Yara´s movement in the market. When following each step as described, this overall risk will be significantly reduced. Through lobbying and by conducting the in depth analysis of the market, the risk of entering a non-profitable market or being obstructed by the authorities will be minimized.
Personnel risk will also be reduced after screening out the allocated staff and hired sales agronomists. Despite this, there are still some risk factors that Yara has to acknowledge when picking their retailers. Each retailer may evolve opportunistic behaviors by hiding information about the sales volumes, the demand in the market, and the balance between the retail price and the actual selling price. The retailers are well aware of Yara’s dependence on them as they are their only way of reaching the final users. One of the main reasons behind this type of behavior is the retailer wanting to maximize his own profit margin. This is the most challenging risk to overcome, but it can be reduced through monitoring and formal contracts that protects against opportunism.

8.7 BUSINESS STRATEGY

Differentiation Strategy

Yara should approach the Cambodian market through a differentiation strategy by broadly targeting retailers and differentiate themselves through high-end agricultural products of unique quality as well as offering expert advice. By implementing Porter’s Generic Strategies into the company’s business strategy, they will have a basis for developing sustainable competitive advantages in Cambodia. (Hitt et al., 2012, p.102, 105-106)

Through their differentiation strategy, they can leverage on their innovation capabilities, quality of Yara’s NPK product, and their unique agronomy expertise and industry knowledge offered through their extended product, in order to grant a strong position in the Cambodian fertilizer market. This will be elaborated on in the product strategy. (See Appendix Q for figure of Michael Porter’s Generic Business Strategies)
8.7.1 Customers

Yara’s direct customers are agricultural retailers within the specific country. They must have a high level of knowledge surrounding agronomy and farming in general, as well as having a solid economy. In addition, the retailer should have a wide network, be well known and trusted by the farmers in his region. Yara should have a retailer in every region of the country in order to reach as many end-customers as possible. The ideal amount in Cambodia is estimated to be 80-120 retailers and would be enough to cover all the regions.

These retailers are those who will provide Yara’s products to the final users. The final users are Cambodian farmers, and are seen as the company’s indirect customers.

8.7.2 The knowledge-transmitting chain

As mentioned earlier, Human Resource management is both an existing core competency, and will also be a critical success factor for Yara in Cambodia. During the establishment process we mentioned that finding the right people and allocating them to sales agronomist positions would be crucial for the training process.

The knowledge-transmitting process starts during the agronomist hiring process, which is lead by the Head of Operations. Already from the first interaction, Yara’s staff has to explain in depth how their products are differentiated, and display the advantages and higher yield they provide in contrast to the existing products in the market. By the end of the hiring process, the sales agronomists must have total understanding and complete knowledge about Yara’s brand portfolio, as well as be able to convey their knowledge to others.
The Sales Agronomist’s main objective is not only to locate the suitable retailers in order to turn them into direct customers, but the most essential part is to effectively educate them. The retailers will obtain a high level of knowledge about Yara’s high quality physical product, including the benefits their fertilizers provides to the crops throughout the entire growing stage. They will from this point become Yara’s communication channel with the final users, by giving the farmers a holistic understanding about their products, their efficiency, the most effective way and timing for applying them. This will constitute the last link of Yara’s knowledge-transmitting chain. (See Appendix R for graphic illustration of the chain)

8.7.3 Product Strategy

Ethnocentric Product Extension Strategy:

Based on customer needs within the Cambodian market, Yara should use an ethnocentric product extension strategy (Solberg, 2009, p.342-343). Following this strategy, they will continue to offer a standardized product portfolio on a global basis. However, they need to adapt to local conditions when it comes to customizing their extended product. This includes payment policy, as well as special crop nutrition programs and fertilizer combinations that are developed specifically to fit the most highly produced crops in the Cambodian agricultural industry.

Physical Product - NPK:

As stated in the business strategy, Yara’s has to differentiate themselves by producing and selling high-end products. The company’s main focus is on the NPK brand “YaraMila”, which consists of the three major nutrients nitrogen (N), phosphorus (P) and potassium (K) (See Appendix S for illustration of NPK nutrients). Based on our research and analysis, “YaraMila”
should continue to be their primary brand when entering Cambodia seeing as there is a need for complex NPK fertilizers in the early stages of growth. In addition, YaraMila has the broadest range of use out of the company’s product portfolio. This brand targets farmers focusing on the production of high-end products, that are in need of a higher level of nutrition in order to reach their full growth-potential. In Cambodia, this applies to products like cassava, maize, soybeans, bananas and fresh vegetables. In addition to “YaraMila”, Yara should also offer the brands “YaraBela” (nitrogen fertilizers), “YaraLiva” (calcium nitrate fertilizers), “YaraVera” (nitrogen fertilizers, including Urea) and “YaraVita” (micronutrients) in order to give access to their complete product portfolio. These products will be necessary for different crops in the varying stages of growth.

**Value-adding services:**

Another part of Yara’s differentiation- and product strategy is to continue focusing on their value-adding services, such as providing fertilizer management tools and expert advice from sales agronomists. This ensures that the fertilizers and application methods suit the local production, as well as the geographical- and environmental conditions. This will most likely affect the customers perceived value of the product, and in turn make the customers more willing to pay a price premium.

**8.7.4 Logistics**

Yara has to allocate the supply to the demand for each operating country, order the right volume, and make sure that the delivery will be conducted safe and in time. As described in the Value Chain analysis, the Singapore office operates as headquarters for Yara Asia. Also for Cambodia,
Yara Singapore will be placing the orders and coordinate the distribution to the retailers. The fertilizers should be shipped in containers directly to Cambodia, and thereafter in trucks to a packing factory. From that point and on they will be delivered in Yaras branded 50kg packages to the retailers. (See Appendix T for illustration of Supply and Demand Logistics).

Since the firm does not own the needed packaging and transporting facilities in Cambodia, they must find local partners that can perform this procedure. Those partners are external packaging and logistic companies that are established locally. This is a strategy Yara has successfully followed over years of operation in other Asian similar markets with poor infrastructure like the Philippines. The transfer cost according to Yara Singapore’s CFO, Alf Tangvald, is estimated to be 40 USD per ton of fertilizers. In addition, Trading economics reports that the cost to import per 20ft container (24 tons of NPK fertilizers) in Cambodia is 872 USD and will therefore give an additional import cost of 30.5 USD per ton to Yara.

8.7.5 Payment Policy

The payment policy heavily depends on their analysis of each country’s terms for payment and credit systems. Based on the strategy, timing, goodwill and findings they adjust their terms to the markets norm, but have a tendency to be more strict than most competitors.

During the introduction phase, the first 2-3 years of operation, having in mind the low brand awareness and the generally low capital strength in Cambodia, Yara should apply a long term credit payment policy. Yara should grant a short term discount credit spread across a variety of customers to reduce the commercial risk, and provide the credit in NOK while buying and selling in the same currency to limit the economical risk. After reaching a certain amount of sales and
market share, the policy should become stricter and in shorter terms in order to increase sales volume efficiently.

8.8 MARKETING STRATEGY: Brand Awareness

A vital part of Yara’s Marketing strategy is to create brand awareness among both farmers and retailers. As stated earlier, the general knowledge surrounding foreign fertilizer companies is low, and it is therefore something Yara must pay extra attention to. Activities leading to higher brand awareness will be important to implement continuously, and will be especially important during the early stages of entry.

As Yara will be selling to retailers, their beginning efforts towards brand awareness should start there. They want to find retailers that have the best contact with the customers, the greatest ability to influence, as well as a deep understanding of their customers. It will be important for not only Yara to be aware of these retailers, but also for the retailers to be aware of them. Before entry Yara should let it be known that they are coming. One way to do this is through multi-media activities (such as radio and television).

After securing retailers, another important factor that can affect brand awareness is the presentation and placement of Yara’s products in the physical stores. In less developed countries, such as Cambodia, it is highly likely to come across more cluttered and unorganized layouts and displays. It will therefore be extra important to have control over the display solutions used for Yara’s products.
Moving on to creating brand awareness among end users, there are several measures Yara should continue to implement in Cambodia. Using multi-media is an option (Yara has previously invested 4 million dollars in a range of successful TV-commercials in Thailand) but this may not necessarily be the case in Cambodia. Looking into more personal, face-to-face options, there are two main activities that have shown to be very successful: farmers meetings and brand ambassadors.

Farmers meetings are educational/promotional meetings/presentations held by Yara for end-users of their product. The meetings are set up when a retailer has, for example, 100 customers focusing on a certain product. Farmers will be given information, as well as have the chance to talk to an agronomist over some coffee. This helps not only build stronger brand awareness, but also trust between the company and end-users. The second measure, brand ambassador, is a competition held among retailers, where the one with the best display solutions for Yara wins prizes such as the title of “Yara Ambassador”, as well as a sponsored trip to Norway.

The last measure we want to mention is trial periods. This is likely to be the most important, as other companies are offering both trial periods, as well as “after-season payment” (see finding #5 p.25). A “trial period” entails that the retailer, or end-user, applies Yara’s products to half of their crops. This will allow potential customers to see the difference between Yara and the competing product first-hand. As many have little knowledge of the brand, allowing customers to see the results is important in order to increase positive brand awareness.
8.9 Pricing Strategy

Yara should approach Cambodia with a hybrid pricing strategy of market-oriented pricing that will include elements of premium pricing. Through this strategy they will figure out the market prices according to competitor research and set their price slightly higher in order to get favorable perceptions and signify the high quality of their premium product.

Production cost for Yara is 450 USD per ton. According to Prof. Chuong Sophal, dean of Agronomy Faculty of the Royal University of Agriculture in Cambodia, the typical retail price of NPK in the Cambodian market is 660 USD per ton. Therefore, their recommended retail price should range among 700-800 USD per ton, with a selling price to B2B customers (retailers) starting at 600 USD.

The risk of this pricing strategy is that the customers might feel that the price gap between Yara´s products and the cost leader´s products is too wide. In this instance, there may be occasions where the retailers have not transmitted their knowledge efficiently enough the customers who therefore feel that the differentiated features that Yara offers exceed their needs.

9. FINANCIAL OVERVIEW

According to Alf Tangvald, the cost of investing and establishing is relatively small. Based on the recent actions in establishing in in Myanmar, their initial investment was only 50,000 USD. Despite this, there are other cost drivers that affect the investment to increase significantly. Allocating personnel, like setting someone internally from Yara to be the Head of Operations in the certain area of interest is proven increase the cost, as he has to move often with both kids and wife, Adding on the facilities, hiring and research costs they estimate the total investment to have
risen to around 800,000 USD at the year of establishing the sales office in Myanmar, a country with similar regulations and market costs as Cambodia.

Alf Tangvald assumes that the investment costs, market share and break-even point will approximately be the same in Cambodia as in Myanmar. Yara’s estimations for the first three to five years of operation is achieving a market share of 3-4% because of their focus on high-end products and low brand awareness. With a total NPK fertilizer market estimated to be 700,000 tons in Cambodia, Yara will reach a sales total volume of 27,000 tons in the first 4 years (3.8% of total market). Based on the previously stated operational, logistic and production costs, Yara will reach a breakeven point within the third year of operations. For the full financial calculation table, please refer to Appendix U.

10. CONCLUSION

After examining both the external Cambodian environment and the internal operating environment of Yara through secondary and primary research, we have identified a potential for the company to invest in entering this market. The proposed strategy is to establish an overseas sales office which will, through its process, manage to transmit the needed education surrounding Yara’s differentiated products to the final users. Through Yara’s core competencies, the company will exploit its competitive advantage in order to overcome the risks, and manage to reach the set goals increase the revenues over time and break even within the first three years of operations.
BOOKS:


WEBSITES/PDF FILES:


<http://www.epa.gov/oppbppd1/bi OPCesticides/reg tools/biotech-reg-prod.htm>


<http://www.seasite.niu.edu/khmer/ledgerwood/education.htm>

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APPENDIX

Appendix A: Main sections we wanted get a better insight into

1. Economic situation
   How do the local experts view the current economic situation in Cambodia, and which factors have contributed to the growth in the Cambodian economy over the past years?

2. Trends and common methods
   What are the current main trends and most common practices in the agricultural land use?

3. Weaknesses, challenges and needs in the industry
   Which have been the main challenges in the industry in terms of infrastructure, workforce and competitiveness?

4. Needs in the industry
   What does the industry need in order to overcome the above-mentioned challenges?

5. Competitiveness in Cambodia
   What have been the main driving forces for competitiveness in the agricultural industry?

6. Expert’s recommendations
   As experts in the industry, what are their personal views, advice and recommendations concerning measures and actions that would inject positivity and further growth in the Cambodian agriculture?
Appendix B: Qualitative Interview Guide

Professors:

Introduction:
Introduce ourselves; thank them for taking the time out of their schedule to meet us.
Talk about the main focus for the interview: The main focus of this interview is to talk about the Cambodian agricultural industry with specific focus on use of fertilizer. Our goal is to find new and relevant information on the industry, as well as understand your personal views on a variety of topics from economic situations to the pro’s and con’s of fertilizers.
Then we will give them a brief presentation of Yara and the NPK fertilizer, and also mention Yara’s extended product/services such as meeting with farmers and give tips as well as analyzing their soil in order to meet their specific individual needs.

Demographics:
Background Information:
- Age
- Occupation (current and past if worked within agriculture
- Location
- Education level

Decision problem/purpose #1: Is the Cambodian market strong and modern enough for high-end fertilizer products?

- Economic situation in Cambodia: How do you view the current economic situation in Cambodia, do you see it as rising? If so, what do see the agricultural industry as a contributing factor to this/to what degree?

- Fruits/vegetables: What are some of the main agricultural products being produced in Cambodia concerning both fruits and vegetables? What (within both areas) are the largest contributors when it comes to exports and production for the home market?

- Most common agricultural practices (traditional, modern, machines etc): What are some of the most common agricultural practices as of today? (f.ex done by hand, machines). Is the focus mainly of quality or quantity? Are there any practices you see as special to Cambodia?

- Market evolution/trends: From the secondary sources we have found there seems to be a positive development with regard to the economy, the openness of the country to foreign companies and agriculture in general. Would you agree with this, and are there any other trends within the industry?
- **Weaknesses in farming:** What do you feel are some of the biggest weaknesses or threats within the industry? This can be in regards to economic factors, political, or export/import from surrounding countries. (How about infrastructure?)

- **Fertilizer usage (current and future trends):** What do you see as the most commonly used fertilizer? Why do you believe this is? Do you believe this will remain the most commonly used, why/why not?

- **Needs:** What would you say are some of the most important needs when it comes to fertilizer and the extended product? Are farmers in need of more information and help, a different kind of fertilizer more suitable for their crops? Cheaper products?

- **Pricing:** What is the average price for fertilizer (name different types), high or low pricing? What are Cambodian farmers able to afford?

- **Subsidization, government** (agriculture, are they helping/in what ways?): Do you see the government’s efforts to support agriculture as sufficient? Can you name any specific government activities/incentives?

**Decision problem/purpose #2:** Will the Cambodian market be accepting of NPK fertilizer? What are some potential problems regarding perception of this fertilizer? How high is the level of competition?

- **Knowledge of fertilizer companies currently in Cambodia & imports:** Could you name the fertilizer companies you are most familiar with that either operate in or export to Cambodia? Do you see these as strong players in the industry? What makes these companies stand out?

  - We have come across some agricultures warning against the use of chemical fertilizer that also stated that the government promoted the use of natural fertilizer, why do you believe they have this perception of chemical fertilizer/do you agree with this?

  - What are your personal views on organic fertilizer (effectiveness, environmental friendliness, best fit for Cambodian industry, chemical/mineral and organic)

  - What are your personal views on chemical/mineral fertilizer in general?

  - What are your personal views on NPK fertilizer?

- **Advertising:** have you noticed any advertising efforts by fertilizer companies, if so what kind? (B2B, social media, radio, television, visiting farms)
Appendix C: Answers to in-depth interviews

#1 Professor Dr. Kang Kroesna, dean of the Faculty of Agricultural Technology and Management

Economic situation:
Rising because of the increase in exports (rice)

Trends agricultural land use:
Size of farms increase and production frequency period (2-3 times production per season) from traditional to intensive
Increasing use of NPK
Most common practices: Increasing use of agricultural machines but still most prefer using traditional equipment (hand, animals)
Urea (at the beginning of production of crops) and NPK (during maturity period)

Weaknesses/Challenges
Technology is low in comparison to neighbors
Too broad use of chemical fertilizer instead of organic (lack of supply of organic) so they overuse chemicals, destroying the crops.
The climate changes have caused problems: normally the production would start in April, but because of the dry season and the climate changes they will have to wait and adapt.

Competitiveness: Agrosol (Austria) (not widely available- trial period) Vietnamese, Thailand, Japanese fertilizer companies

Needs in Agriculture
Human Resource even though the farmers are productive they still lack the technology and education
Improve quality of products through higher technical resource
Higher quality of fertilizers and machines
Education of how, when to produce and increase quality
Low market information, someone has to inform the farmers about what kind of products they need and how to apply them and the standard of the quality
The youth is less interested in agriculture, (do not see a bright future)
Government: Positive and supportive to agriculture working closely to the farmers

International investors perception
We believe that the international products are of higher quality but still it will be hard to them to compete with the low-price fertilizers that are imported from Thailand and Vietnam
Although the Cambodian agriculture needs higher quality products from international companies, still they will struggle to afford those.
A characteristic of the Cambodian market is that in some prominences the farmers can get the fertilizers in advance in order to test-use them over one season, and after the production is made
and sold, they can be able to pay back their suppliers, but many international companies don’t follow that policy. Provide fertilizers for free in order to witness the efficiency and increase the price over the years

**Take away point:**
The living standard in Cambodia is increasing so the consumers need higher quality of products but the local farmers don’t have enough knowledge to adapt to those needs. Therefore, it would be sufficient if an international company that wants to establish its business in Cambodia, offered to educate the farmers in order to use the high-quality fertilizers effectively, in the right way and at the right time. Higher quality of products will give an advantage to the industry.

We have to find the way to produce with lower inputs but with higher quality. If we compare the products that are being sold in Cambodia, they are more expensive than those being sold in Thailand and Vietnam, despite the lower average salaries.

We have to compete with the other countries in the region and the only way to do that is to produce more, with lower inputs, and for that we need people with technical knowledge to help us.

---

**#2 Hin Lyhour, Head of Planning and International Cooperation Office**

**Weaknesses:**
Farmers lack knowledge so they are still stuck in the traditional way of applying fertilizers and crops that has en result in low yield. They are overusing chemicals, often destroying the crops. If they knew a better way of application, they would be able to increase the yield and production. In order to promote the Cambodian economy the farmers should consider taking part of their focus off the rice production over to other, more expensive and thus profitable products as fresh vegetables and fruits. The challenge again here will be the lack of storage facilities so this kind of production may become riskier as the farmers will have to have an effective value chain that will allow them to sell out their products in a shorter time period than rice that can easily be stored and held in inventory. And let’s not forget that rice can be consumed inside the country or be exported. It’s not useless, it contributes a lot to the economy and can even been transformed into other forms like flavor.

Despite the fact that rice products has become better and better over the past years, there is still a room for improvement in order to compete with the neighbor countries (Thailand, Vietnam).

**Competitiveness in Cambodia:**
Although there are some local factories here, the most fertilizers are being imported from Vietnam (brand: Buffalo head), Thailand and Japan. More and more Vietnamese companies offer trial periods for their products and crave the money after the harvest is over. If then the farmers do not have enough to pay back, they have to sell the land in order to get enough money to pay off.
Urea vs NPK:
Urea does not have all the important nutrition for crops, it is mostly being applied to the soil at the first phase. When the crops reach a level of growing it is necessary to apply NPK in order to secure a faster and better growth of the products (including rice).
My personal advice to all the farmers in Cambodia would be to make sure they have a fully understanding and knowledge of how and when to apply the specific fertilizers. Its important to not overuse chemicals especially in the starting phase. I would also suggest them to invest in higher quality fertilizers as long as they can afford it.
A good idea for international companies who want to do business in Cambodia would be to approach and hire NGOs in collaboration with staff from the agricultural university in order to educate the farmers effectively. By getting support from abroad it would be easier to share their knowledge, overcome the culture and language barriers with the local farmers and educate them about the better use and prove the efficiency and profitability of high quality fertilizers.

#3 Professor Chuong Sophal, dean of Agronomy Faculty

Economic situation
Three important sectors for GDP: industry, service and agriculture. Agriculture is definitely important in order to sustain the economic growth.
Rice remains the main crop that is being produced and exported, followed up by cassava and corn.
As for fresh fruits and vegetables there is still lack of the necessary knowledge (growing technique), fields and production technology in compared with the surrounding countries is still low, that is why the majority of farmers prefer to focus on rice.

Trends
Machinery use is increasing
Despite the governmental policies that are trying to support the use of organic fertilizers, the farmers still use chemicals.

Challenges
Labor shortage especially from the younger ages that prefer working on factories than in the fields. The elderly that are remaining are getting weaker and are not familiar with the new machinery or techniques.
Lack of knowledge about the correct use and timing for applying fertilizers.

Typical prices of fertilizers: (approximately)
Urea 25 USD per 50kg
NPK 33 USD per 50kg
Conclusion
The “technology of growing” has a big room for improvement, the farmers has to be educated and become familiar with the new technologies. By that I mean seed quality, land preparation, water control, disease control as well as fertilizer use and timing.
**Appendix D: Complete Quantitative Survey**

### NPK in Cambodia

**Form Description**

| NPK | NPK is a fertilizer with three major components: Nitrogen, Phosphorus and Potassium. |

1. **Gender**
   - Male
   - Female

2. **Age**
   
3. **From**
   - City
   - Countryside

4. **Program Grade**
   - Bachelor
   - Master
   - PhD

5. **Does your family have a background in agriculture?**
   - Yes
   - No
General industry perception

6. How do you feel about the current local fertilizer quality in Cambodia?
   1 2 3 4 5
   Low quality  High quality

7. How easy would it be for new foreign distributor to enter the cambodian market?
   1 2 3 4 5
   Very easy  Very hard

8. Do you feel that the agricultural effectiveness has room for improvement in Cambodia?
   1 2 3 4 5
   No need for improvement  Definite need for improvement

9. How familiar are you with Urea products?
   1 2 3 4 5
   Not familiar at all  Very familiar

10. In which field do you believe that Urea is most effective?
    - Rice
    - Cassava
    - Fresh Vegetables
    - Bananas
    - Maize
    - Soybeans
11. How would you rank the current average quality of Urea products in Cambodia?
   1 2 3 4 5
   Very low 0 0 0 0 0  Very high

12. How would you rank the current availability of Urea products in Cambodia?
   1 2 3 4 5
   Very low 0 0 0 0 0  Very high

13. How familiar are you with NPK products?
   1 2 3 4 5
   Not familiar at all 0 0 0 0 0  Very familiar

14. In which field do you believe that NPK is most effective? (Rice, Cassava, Fresh Vegetables, Bananas, Maize, Soybeans)
   - Rice
   - Cassava
   - Fresh vegetables
   - Bananas
   - Maize
   - Soybeans

15. How would you rank the current average quality of NPK products in Cambodia?
   1 2 3 4 5
   Very low 0 0 0 0 0  Very high
16. How would you rank the current availability of NPK products in Cambodia?

   1  2  3  4  5

   Very low  ●  ●  ●  ●  Really high

17. Do you believe that a broader use of NPK would rise the efficiency of agriculture in Cambodia?

   1  2  3  4  5

   I really don’t agree  ●  ●  ●  ●  I really agree

21. I believe that Cambodia’s agriculture would rise if there was a higher focus on high-end products (vegetables, fruits etc)

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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</table>

22. I believe that NPK is significantly more effective than Urea for high-end products

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
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<td>●</td>
<td>●</td>
<td>●</td>
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<td>●</td>
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23. I feel that NPK is too expensive for the most local high-end farmers.

<table>
<thead>
<tr>
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<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
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<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

24. I believe that most local high-end farmers are not familiar with NPK

<table>
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<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
25. I believe that local high-end farmers would be willing to buy expensive NPK products

<table>
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<tr>
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<th>Strongly agree</th>
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<td>0</td>
<td>0</td>
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</table>

26. I believe that the agricultural industry would benefit from increased use of NPK

<table>
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<tr>
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<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
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</tbody>
</table>

If you owned your own agricultural company

27. Your main product focus would be:
- Rice
- Cassava
- Fresh vegetables
- Bananas
- Maize
- Soybeans

28. Would you prefer a local or a foreign distributor of fertilizers for your company?

<table>
<thead>
<tr>
<th>Local distributor</th>
<th>Foreign distributor</th>
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</tr>
</thead>
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<tr>
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29. Would you prefer using Urea or NPK?

<table>
<thead>
<tr>
<th>Urea</th>
<th>NPK</th>
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</thead>
<tbody>
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<td>0</td>
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</tbody>
</table>

30. I believe that Urea is efficient enough for my products

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0</td>
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</tbody>
</table>

31. I believe that investing in NPK would give me a higher long-term return

<table>
<thead>
<tr>
<th>Yes</th>
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</table>

32. Comments


Appendix E: List of incentives

- An exemption period for taxes on profit up to nine years.
- Exemption of import duties and certain other taxes on machineries and equipments required for improving infrastructure and production in the zone.
- The Zone Developer could enquire to get an AT, this deal will make the developer exempted from normally deducted taxes and duties for up to one year, in this case for transport and machineries with the purpose of bettering the infrastructure.
- Can receive a land concession for the SEZ along the border or regions distanced from it, conformed by the Land Law. The land can also be leased by the Zone Developers to the Zone Investors.

(Council for the Development of Cambodia, 2014)
Appendix F: Expert advice from qualitative research findings

- “We have to find the way to produce with lower inputs but with higher quality. If we compare the products that are sold in Cambodia, they are more expensive than those being sold in Thailand and Vietnam, despite the lower average salaries. We have to compete with the other countries in the region and the only way to do that is to produce more, with lower inputs, and for that we need people with technical knowledge to help us.”
  Prof. Dr. Kang Kroesna, dean of the Faculty of Agricultural Technology and Management

- “My personal advice to all the farmers in Cambodia would be to make sure they have a full understanding and knowledge of how and when to apply the specific fertilizers. It’s important to not overuse chemicals especially in the starting phase. I would also suggest them to invest in higher quality fertilizers as long as they can afford it.”
  Hin Lyhour, Head of Planning and International Cooperation Office

- “A good idea for international companies who want to do business in Cambodia would be to approach and hire NGOs in collaboration with staff from the agricultural university in order to educate the farmers effectively. By getting support from abroad it would be easier to share their knowledge, overcome the culture and language barriers with the local farmers and educate them about the better use and prove the efficiency and profitability of high quality fertilizers.”
  Hin Lyhour, Head of Planning and International Cooperation Office

- “We believe that the international products are of higher quality but still it will be hard to them to compete with the low-price fertilizers that are being imported from Thailand and Vietnam. Although the Cambodian agriculture needs higher quality products from international companies, still they will struggle to afford those. Those companies should provide fertilizers for free in order to witness the efficiency and increase the price over the years”
  Prof. Dr. Kang Kroesna, dean of the Faculty of Agricultural Technology and Management
Appendix G: Finding #1 – Product Focus

Your main product focus would be:

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</tr>
<tr>
<td>Cassava, Fresh vegetables, Maize, Soybeans</td>
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<tr>
<td>Fresh vegetables</td>
<td>8</td>
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</tr>
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<td>0.01176</td>
</tr>
<tr>
<td>Rice, Cassava, Fresh vegetables</td>
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<tr>
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<td>Rice, Cassava, Fresh vegetables, Maize, Soybeans</td>
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<td>0.01176</td>
</tr>
<tr>
<td>Rice, Cassava, Soybeans</td>
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<tr>
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N Missing: 4
Appendix H: Finding #2 – Focus on high-end products

21. I believe that Cambodia's agriculture would rise if there was a higher focus on high-end products (vegetables, fruits etc) []

<table>
<thead>
<tr>
<th>Level</th>
<th>Count</th>
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N Missing = 1
5 Levels
Appendix I: Finding #3 – Urea efficiency

30. I believe that Urea is efficient enough for my products [ ]

**Frequencies**

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</table>

2 Levels
Appendix J: Finding #3 – Urea vs. NPK preference

**29. Would you prefer using Urea or NPK?**

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<tr>
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<th>Count</th>
<th>Prob</th>
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</thead>
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2 Levels
### Appendix K: Finding #4 – NPK vs. Urea efficiency

#### Contingency Table

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22. I believe that NPK is significantly more effective than Urea for high-end products []

<table>
<thead>
<tr>
<th>Count</th>
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23. I feel that NPK is too expensive for the most local high-end farmers. []

<table>
<thead>
<tr>
<th>Count</th>
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<th>Disagree</th>
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<td>0,00</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Count</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total %</td>
<td>0,00</td>
<td>2,25</td>
<td>4,49</td>
<td>5,62</td>
<td>5,62</td>
</tr>
<tr>
<td>Col %</td>
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<td>4,49</td>
<td>5,62</td>
<td>5,62</td>
<td>17,98</td>
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<td>Row %</td>
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<td>18,18</td>
<td>21,05</td>
<td>10,87</td>
<td>55,56</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Count</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total %</td>
<td>0,00</td>
<td>12,50</td>
<td>31,25</td>
<td>31,25</td>
<td>0,00</td>
</tr>
<tr>
<td>Col %</td>
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<td>31,25</td>
<td>51,69</td>
<td>10,11</td>
<td>0,00</td>
</tr>
<tr>
<td>Row %</td>
<td>0,00</td>
<td>12,36</td>
<td>21,35</td>
<td>51,69</td>
<td>0,00</td>
</tr>
</tbody>
</table>
Appendix L: Finding #5 – Local vs. foreign distributors

28. Would you prefer a local or a foreign distributor of fertilizers for your company? []

<table>
<thead>
<tr>
<th>Level</th>
<th>Count</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Either</td>
<td>30</td>
<td>0.34483</td>
</tr>
<tr>
<td>Foreign distributor</td>
<td>29</td>
<td>0.33333</td>
</tr>
<tr>
<td>Local distributor</td>
<td>28</td>
<td>0.32184</td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>1.00000</td>
</tr>
</tbody>
</table>

N Missing 2
3 Levels
Appendix M: Additional comments from survey

- I think that using chemical fertilizer but we need to use the natural fertilizer nowadays, using chemical fertilizer can affect the soil, agricultural products if we use it not to fit to the amount that is required. Furthermore, I think that in Cambodia, the farmers should use chemical a lot but they do not think of the amount of using.

- To improve the agriculture we should make lots of technical agriculture and pricing.

- I would like to improve the agriculture products in Cambodia by using Cambodian fertilizer.

- I need a lot of companies to invest in fertilizer products in Cambodia.

- Cambodia is a country that depends on agriculture. Yet, when farmers grow rice or vegetables they get low products because farmers have low technique in agriculture.

- I prefer you to make a workshop about fertilizer because some students does not know about it. I think that it is good for fertilizer in my country.

- I need more explaining about NPK.

- In order to improve agriculture products we should method of using fertilizers, new technology, which fertilizer we should take.

- I want NPK to have a lot of benefits than before but it must be cheap.

- I think natural fertilizer is more important because it provide positive for people and our earth.

- I would kindly encourage Cambodia to be invested in by a foreign country in order to reduce the price of NPK to become cheap. However, when there are a lot of fertilizer companies in Cambodia, it would be easy for the Cambodian farmers If NPK can be better in Cambodia, please import them.

- I am strongly convinced that, after you're doing research already, you will provide the positive feedback from my country and the NPK using in my own country will be better because of studying in RUA.

- I would like to thank you for your questioners that provide tome, I think that NPK is good for farmers. We need scientists to help us with agriculture.

- I think that the Agriculture in Cambodia will be better than before, because now we are improving the agriculture sciences. I need high quality of NPK and low price. For farmer confident of farmer in Cambodia.

- To improve agriculture, we need more education, more practice and more NGO.
• I believe that Cambodia is the develop country because of rice product. But the Cambodian people that are farmers they need NPK to make their product get high yield. So they need the NPK to be not expensive!

• I want NPK to have a higher quality and minimum price for farmers in Cambodia. I need Cambodian farmers to use NPK more than Urea because NPK can support rice, but I want NPK cheaper than Urea and need more companies to invest in Cambodia.

• I also need companies to teach farmers how to use NPK. For agriculture, fertilizer is very good and in my country we have a lot of raw material to make it and i think it is very important.

• I think you will need to have workshops about NPK and Urea in my university. Cambodia should be get the expert from abroad, and should get good agriculture machines and cheap price.

• I think that agriculture is developing from year to year, but the poor farmer nearly poorer. Why the answer always solve but no result. They do farming every year, but their yield still lower. The many problems are still issues for them. Like: Lack of knowledge and information, low price of agricultural products, nobody wanting to buy their end product, lack of irrigation system, low quality of their product.

• I suggest you to show information of the fertilizer I think organic fertilizers are the best. The companies should produce organic fertilizers as much as they can.

• I need foreigner help Cambodia I suggest you make a training to farmers about fertilizer.

• I think that using mineral fertilizer can offer high yield, but if we use it a lot it will affect soil quality. We should use suitable chemical fertilizer and natural fertilizer as well. Cambodia needs agricultural specialize and some technique because we have poor techniques. I think the agriculture in Cambodia will be better than before, because now we are improving the sciences.
Appendix N: Solberg’s Nine Strategic Windows

<table>
<thead>
<tr>
<th>HI</th>
<th>Enter new Business</th>
<th>Prepare for Globalization</th>
<th>Strengthen your Global Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>ME</td>
<td>Consolidate your Export Markets</td>
<td>Expand in International Markets</td>
<td>Seek Global Alliances</td>
</tr>
<tr>
<td>LO</td>
<td>Stay at Home</td>
<td>Seek International Niches</td>
<td>Prepare for a Buyout</td>
</tr>
<tr>
<td>Multi Country</td>
<td>Potentially Global</td>
<td>Global</td>
<td></td>
</tr>
</tbody>
</table>
Appendix O: Implications of NPK application

Appendix P: Establishing Process
Appendix Q: Porter’s Generic Strategies

Appendix R: Knowledge transmitting chain
Appendix S: Illustration of NPK Nutrients

Appendix T: Supply and demand logistics
Appendix U: Financial Calculations

<table>
<thead>
<tr>
<th>ANNUAL SALES AND COSTS</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales volume (tons)</td>
<td>3000</td>
<td>5000</td>
<td>8000</td>
<td>11000</td>
</tr>
<tr>
<td>Unit price (per ton)* **</td>
<td>600</td>
<td>617.4</td>
<td>635,3046</td>
<td>653,7284334</td>
</tr>
<tr>
<td>Sales</td>
<td>180000</td>
<td>308700</td>
<td>5082436.8</td>
<td>7191012,767</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COSTS PER TON</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics*</td>
<td>70.5</td>
<td>72,5445</td>
<td>74,6482905</td>
<td>76,81309092</td>
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<tr>
<td>Production*</td>
<td>450</td>
<td>463,05</td>
<td>476,47845</td>
<td>490,2963251</td>
</tr>
<tr>
<td>Tot.</td>
<td>520.5</td>
<td>535,5945</td>
<td>551,1267405</td>
<td>567,109416</td>
</tr>
<tr>
<td>COGS</td>
<td>1561500</td>
<td>2677972,5</td>
<td>4409013,924</td>
<td>6238203,576</td>
</tr>
</tbody>
</table>

*The estimate is based on a 2,9% inflation rate. (http://www.worldbank.org/en/country/cambodia)
**Unit price (per ton) is the selling price to retailers.

<table>
<thead>
<tr>
<th>CASH FLOW****</th>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment***</td>
<td>-800000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales revenue</td>
<td>180000</td>
<td>308700</td>
<td>5082436.8</td>
<td>7191012,767</td>
<td></td>
</tr>
<tr>
<td>Operating Expenses***</td>
<td>611160</td>
<td>628883,64</td>
<td>647121,2656</td>
<td>665887,7823</td>
<td></td>
</tr>
<tr>
<td>COGS (production, logistics)</td>
<td>1561500</td>
<td>2677972,5</td>
<td>4409013,924</td>
<td>6238203,576</td>
<td></td>
</tr>
<tr>
<td>EBT</td>
<td>-372660</td>
<td>-219856,14</td>
<td>26301,61044</td>
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<tr>
<td>Tax (30%)</td>
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<td>7890,483132</td>
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<tr>
<td>NOPAT</td>
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<td>18411,12731</td>
<td>200844,9866</td>
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<tr>
<td>CF</td>
<td>-800000</td>
<td>-260862</td>
<td>-153899,298</td>
<td>18411,12731</td>
<td>200844,9866</td>
</tr>
</tbody>
</table>

***Advertising and office supplies (computers, phones, etc.) are included as a part of the initial investment.
****The cash flow analysis is based on a rough estimate.

<table>
<thead>
<tr>
<th>Year 0</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment</td>
<td>-800000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating CF</td>
<td>-260862</td>
<td>-153899,298</td>
<td>18411,12731</td>
<td>200844,9866</td>
</tr>
<tr>
<td>Cumulative CF</td>
<td>-800000</td>
<td>-1060862</td>
<td>1214761,298</td>
<td>1196350,171</td>
</tr>
</tbody>
</table>

| Tot. NPK demand in Cambodia (tons) | 700000 |
| Expected market share year 3 | 3,00 % |
| Expected sales volume (tons.) after 3 years | 21000 |