

Green Management Sustainability and its Economic Impact

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ABSTRACT

The topic of doing business in a socially responsible manner now means doing business in a sustainable manner in order to minimize risks to the environment and the community at large. Many firms are now integrating green management concepts into their firms and operations. This case study investigates green management sustainability in Thailand. The authors selected several companies that have successfully initiated or have already undergone their transformation toward going green and long-term sustainability. The authors provide an overview of green management, sustainability and best practices from these firms. Finally, discussion questions are offered for reflection and group exploration exercises.

Keywords: Green management, Sustainable, Global Economy

1. INTRODUCTION

In the past, industrialists, innovators and entrepreneurs have created many products without fully knowing their long-term impact on people or society. Nowadays, people are expected to responsibly use modern technology to create value for people around the globe without causing undue negative externalities such as air pollution. After major disasters caused by atmospheric problems and pollution, many professionals have changed their ways of thinking in an attempt to save the world by taking part in “green management” and conducting business in the green way using the 5Rs (reduce, reuse, recycle, renew, and respect) to manage the organization.

These days, to stay competitive, many organizations have shifted their focus to becoming socially and environmentally responsible as more and more consumers demand and support only environmentally friendly products and services (Mujtaba, 2014; Mujtaba, McClelland, Cavico, and Williamson, 2013).). Thus, many companies have started to go green with everything in the company’s value chain from their ground level manufacturing to their top management, for example use less packaging, reduce pollution and waste output and/or minimize energy consumption. Besides from consumers, pressure for businesses to improve their environmental performance also stem from trading partners (Mujtaba and Cavico, 2013). To work with an eco-friendly partner, for example, a company might need to comply to partner’s environmental standard and guideline, such as environmental management systems (EMS)ISO 14001which is the cornerstone standard of the ISO 14000 series (iso.org, 2010). The ISO 14000 environment management standards exist to help organizations (a) minimize how their operations (processes etc.) negatively affect the environment (i.e. cause adverse changes to air, water, or land); (b) comply with applicable laws, regulations, and other environmentally oriented requirements, and (c) continually improve.

Green management is one way for organizations to become green. Green management is management of those activities of a firm that have or can have an impact on the environment (Starkey, 1998: 12). It is also imperative that such a practice is sustainable. Sustainable management is an important part of successfully maintaining the quality of life on the planet. Sustainable management can be applied to all aspects of our lives. For example, the practices of a business should be sustainable if they wish to stay in businesses, because if the business is unsustainable, then by the definition of sustainability they will cease to be able to be in competition (Seong Kook Kim, 2010).

This research focuses on several Thai companies that implement sustainable green management and its impact on the company. The selected companies are considered pioneers in green management, which include the following firms:

1. Petroleum Authority of Thailand (PTT),

2. The Siam Cement Group (SCG),
3. The Bangchak Petroleum Public Company Limited (Bangchak),
4. Mitr Phol Sugar Corp., Ltd.,
5. Siam Food Products Public Company Limited, and
6. Charoen Pokphand Group (CP).

The findings of this study will not only contribute to the green management (GM) theory but also provide a guideline for companies that want to go green. Furthermore, the paper can be used as a reference source for green planning, green learning, green management, and other such topics.

II. WHAT IS GREEN MANAGEMENT?

Green management (GM) is a process of planning, organizing, leading, and controlling organizational activities to ensure minimal impact on global or local environment, community, society, science, politics, and economy.

GM in corporations entails optimizing internal and external activities to achieve the betterment of environmental protection and create a sustainable environmentally friendly organization. In term of operation, GM can be applied to inbound logistics, outbound logistics, sales and marketing (accounting, finance, strategic planning, etc.), human resource management (recruiting, training, developing, compensating, etc.), technological development (product and process improvement), procurement of materials, etc. In terms of human resources, organizations should encourage the 7Rs way of thinking, which include 1) Rethink, 2) Reduce, 3) Reuse, 4) Recycle, 5) Refuse (rejection of hazardous raw materials), 6) Recondition, and 7) Return (giving back to society).

Commonly, it is believed that environmentally friendly activities are more expensive than those that are not, which is why many organizations try to avoid it. However, this is not necessarily true! Evidence from the printing industry show that making an environmental investment or changing to a less-polluting production process can actually save money in the long run, e.g. lower energy cost, lower materials consumption, less wastes, and lower waste fees. Moreover, as working conditions improve, employees become more satisfied and thus yield better results. Going green can also bring in new customers, especially those that support environmental protection. Moreover, since customers are normally willing to pay more for eco-friendly products, companies will gain higher profit margin. Essentially, green management is about having sustainability and long-term value creation in our business operations.

III. BUSINESS SUSTAINABILITY

The companies highlighted in this study are examples of firms that are aiming to go above and beyond the economic and legal requirements by also focusing on the ethical and socially responsible obligations of businesses in each community. Such initiatives demonstrate long-term value creation and sustainability of business and society.

Mujtaba and Cavico (2013) argue that the term “sustainability” also has emerged, along with social responsibility and corporate governance, as important subject matter for business today. Sustainability encompasses legal, ethical, moral, and social responsibility values, and also is related in to corporate governance. In order to better illustrate as well as explicate the values of practicality, legality, morality, and social responsibility and their relationship to sustainability, Mujtaba and Cavico explore the Business Sustainability Continuum (BSC) model which has four components (Mujtaba, 2014, p. 126).

This Business Sustainability Continuum (BSC) model presents a continuum where start-up businesses often focus on meeting their bottom-line break-even points and legal requirements in order to stay in business. As these firms grow in terms of their market share and revenue, these businesses begin to see the importance of their actions being seen as ethical and socially responsible for all relevant stakeholders in the community. Furthermore, intense local and global competition forces firms of all sizes to strategically act in an economic, legal, ethical, and socially responsible manner.

Mujtaba and Cavico’s (2013) BSC illustrates that the continual success and “sustainability” of the business can only be achieved by an adherence to four core values (Mujtaba, 2014, p. 127):

Economic dimension indicates that a business obviously must have a viable business model which fulfills a need and enables the business to make a profit.

Legal, indicating that this profit must be achieved in legal manner by aligning the conduct of the business with all applicable local, national, and international law.

Ethical, indicating that since there may be no law or “gaps” in the law; nonetheless the business must act in a moral manner and also must act in conformity with its values, promises, and obligations.

Social Responsibility, indicating that the business must focus on the community and engage in civic, philanthropic, and charitable endeavors as part of the business’ overall strategic plan.

Figure 1 - The Business Sustainability Continuum
 (Mujtaba and Cavico, 2013)



The BSC model can be used to assess and evaluate business decisions and viable alternatives prior to implementation in order to determine which options are sustainable over time and more likely to lead to long-term value maximization for all relevant stakeholders. Besides business decisions, organizational rules and norms can also be assessed using the BSC model to make sure the stated policies and guidelines are economical, legal, ethical, and that they lead to socially responsible conducts over time. Moreover, business leaders are expected to lead by values – legal values, moral values, and now socially responsible values. Corporate social responsibility, along with the values of legality and morality, are “smart” business and “good” business and “sustainable” business – for business, business stakeholders, and society.

IV. RESEARCH METHODOLOGY

In this qualitative research, qualitative data is gathered from local libraries in Bangkok, literatures from book and journal articles available online and field studies.

The selected companies used in this study consisted of Petroleum Authority of Thailand (PTT), The Siam Cement Group (SCG), The Bangchak Petroleum Public Company Limited (Bangchak), Mitr Phol Sugar Corp., Ltd., Siam Food Products Public Company Limited, and Charoen Pokphand Group (CP). These companies were selected because, by some standards, they are considered to be pioneers in green management. Additionally, the authors have access to these companies’ information. The information will outline such element as:

- Organization characteristics such as size, industry, and number of employees.
- Adoption of advance environment and management practices as environment management system (EMS), pollution, and quality management (example: ISO 14000).
- Community environmental activities, modes of information and community input on green priority setting.
- Community environment impact such as waste and emission streams, noise, odor, and employment.

The semi-structured surveys with open-ended questions used for data collection were pretested and some modifications were made to improve consistency and clarity.

1. PETROLEUM AUTHORITY OF THAILAND (PTT)

Main Site: Thailand and Asian region.

Main Product: Energy and petrochemicals.

Number of employees: 13,377 people.

Success: Developed GM standard manual and conducted pilot projects in selective business-line. PTT continued to offer environmentally friendly products and services, such as cleaner energy. The company also heavily invested in R&D on bringing greener products.

Vision: To become Thai Premier Multinational Energy Company.

Values: “SPIRIT” S (Synergy), P (Performance Excellence), I (Innovation), R (Responsibility for Society), I (Integrity & Ethics), and T (Trust & Respect).

Business principle: The business chain of synergy of common growth under good corporate governance principles, with due regard for social, community and environmental responsibility to ensure their sustainable growth. The corporate structure is divided into upstream petroleum and gas business group, and downstream petroleum business group.

As a company, PTT emphasize on the processes, products and services, operation and equipment, and people, while taken into consideration security, safety, health and green management.

Process:

- Maintain PTT group security, safety, health, and environment (Green) management standard that are effective, measurable, and aligned with international standards.
- Set pollution reduction targets and strive toward continual improvement.
- Maintain a reliable system to analyze impacts on health and environment in compliance with relevant regulation.

Products and services:

- Become a leader in R&D on environmentally friendly products and services as well as in green procurement.

Operation and Equipment:

- Continuously strive to minimize environmental impacts from operation.
- Factors company values in their product design and equipment selection.

People:

- Maintain safety and green mind at all times, both on and off the job.

In sum, PTT entrenched GM practice as the code of conduct for all business units. PTT continuously tried to promote acceptance among its staffs and contractors, and to expand the implementation of GM to enhance safety, business performance, as well as promoting an environmentally friendly organization. For example, PTT set up an environmental parameter to monitor the usage of natural resource, e.g. water in term of volume consumption, water recycling, quality and quantity of water discharge.

2. THE SIAM CEMENT GROUP (SCG)

Main Site: Thailand and Asian region.

Main Product: Chemicals, paper, cement, building material and distribution.

Number of employees: 30,000 people.

Vision: “Our People...Drawing the Future”. By 2015, SCG aims to be recognized as an innovative workplace of choice, and a role model in corporate governance and sustainable development.

All SCG employees need to acknowledge, understand, believe, think, and act in accordance with the company green value and policy. SCG strived for sustainable development of green policy, whether it is in creating new businesses, developing environmentally friendly products and services, and technology processes that make optimum use of resources and reduce environmental impacts. SCG undertakes evaluation on risks and effects from green and climate change as follows:

- Potential loss in market opportunity and competitive advantage if suitable resource allocation plan is not applied resulting in higher environment management costs.
- Potential loss of revenue from sales of products containing carbon. In the future, the demand for products with high carbon content may fall and raw material costs may rise for industries using fuel oil as they have high carbon content.

3. THE BANGCHAK PETROLEUM PUBLIC COMPANY LIMITED (BANGCHAK)

Main Site: Phra Khanong District, Bangkok (Thailand)

Main Product: Thai Petroleum Company

Number of employees: 994 people.

Vision: “Greenergy Excellence”, creating green energy business that is environmentally friendly and sustainable

Mission of the firm is as follows:

- Shareholders/business partners/customers/creditors: Conduct business to steadily increase its returns on investment in a fair manner.
- Society/communities/environment: Promote a business culture that is responsible to the environment and society.
- Employees: Develop employees into professionals.

Value: the BCP model: B – Beyond Expectation, C – Continuing Development, and P – Pursuing Sustainability.

The Bangchak Petroleum Public Company Limited (BCP) aims to reduce the CO₂ emission, a major cause of global warming, and sets a target to be a “Zero Global Warming Impact Company or Carbon Neutral Company” by the following measures:

1. Increase efficiency and energy conservation: replace low-efficiency boilers, which consume the very low sulfur fuel oil, with Co-Generation power plant providing electricity and steam with much higher efficiency; as well as, replace the light bulbs and florescent lamps with the CFL and new T5 lamps for energy conservation.
2. Decarbonizes Fuel: switch from high-carbon-content fuel, i.e. fuel oil to Natural Gas, which is more environmentally friendly and yields less CO₂ emission.
3. Develop Renewable Energy Business: to produce and distribute biofuel (biodiesel and ethanol), electricity from a solar-cell power plant and other renewable energy, as the company’s growth direction.
4. Continue other social and environmental activities: produce biodiesel from used cooking oil, or promote reforestation and other such initiatives.

Furthermore, BCP encourages Thai people to play a part in reducing greenhouse gas, the cause of global warming. For example, BCP has campaigned for communities around the refinery including houses and schools to switch light bulbs to the new T5 lamps and CFL. Moreover, BCP set up “Bangchak Gasohol Club Reduce Global Warming project” which aims to encourage Thai people to minimize the CO₂ emission by using gasohol.

BCP also adopted and implemented His Majesty the King’s philosophy of a sufficiency economy, into its operations. BCP formed partnership with Mongkol Chaipattana Co., Ltd., to establish Lemon Farm shops, which sells natural agricultural products from rural communities. BCP encouraged local communities to sell their products at the service stations. The partnership eventually grew into Lemon Farm Pattana Cooperatives, Ltd. Furthermore, BCP promoted a self-sufficient economy philosophy to local communities so they become self-sufficient and encouraged the use of Thai products.

BCP will continue to follow the principle of “developing a sustainable business, environment, and society” by coordinating community networks, in order to provide a “community platform network for community businesses.” This will lead to the development of organizational or business networks at all levels from local to provincial; and induce business organizations at the national level to belong to the people. .

Business Operation

BCP is a leading Thai petroleum company that imports crude oil from the Middle East, the Far East and indigenous sources and refines it into products with a maximum crude-processing capacity of 120,000 barrels per day. To use energy efficiently, be more environmentally friendly and enhance power reliability, the company has entered into a contract with PTT Plc, which builds, owns and operates a co-generation power plant, with electricity and water sold to the company. In addition, the company has introduced natural gas as processing fuel in favor of low-sulfur fuel oil to lower its production cost and be even more environmentally friendly. This forms part of the effort to lower pollution and aligns with the company’s business philosophy of ‘developing a sustainable business together with the environment and society’. The company conforms to the EURO IV specifications laid down by the public sector, which requires gasoline to have up to, but not exceeding 1% of benzene to as much as 3.5% by volume, effective from January 1, 2012. Further, it invested in a USD 50-million gasoline quality improvement project, which consists of a benzene removal unit, a reformer splitter unit and offsite, utilities and related equipment. Currently under construction, the project is due for completion by the fourth quarter of 2011. The company started its sale of EURO IV diesel in April 2008.

Most refined products are sold directly to other oil traders via several transportation modes, such as pipeline, marine or roads while the rest is exported. More than 70% of the refined products are sold directly to consumers through the company’s own nationwide network of service stations. In terms of green management, the

following are relevant for this firm:

1. BCP has complied with international standards like ISO 14001 and OHSAS/TIS 18001.
2. With proper environmental-risk assessment and strong emphasis on safety as well as occupational health, BCP has applied its environmental concerns to every procedure in its operations. BCP's products, services and work plans come from environmentally-conscious thinking processes to ensure that environmental impact, if any, is minimal.
3. BCP has arranged training for its employees so that they can work safely without causing any damage to the environment. Aside, BCP has informed its contractors of its policy on safety, occupational health, environment and energy before they start their works.
4. There are channels for BCP to communicate key information on environment, safety and occupational health to its employees at all levels. BCP has also provided a channel for anyone to lodge a complaint relating to the issues.
5. BCP has prepared emergency plans, accident-prevention plans as well as rescue plans to efficiently respond to any emergency.
6. BCP has laid down environmental and safety conditions for its contractors to follow. The conditions are specified clearly in contracts or term of reference.
7. BCP has required that all work procedure and maintenance jobs have pollution control and accident-prevention mechanisms in place.
8. BCP has disposed waste and scrap materials in line with academic principles. Waste and scrap materials are properly categorized, collected and transported to disposal units.
9. BCP has evaluated its environmental works on a regular basis for further improvement.

The Company's Corporate Social Responsibility has been integrated to its manufacturing process. Known as the CSR in process, it is about using clean manufacturing technology, choosing eco-friendly raw materials and energy, as well as producing quality products that are good not just to vehicles but also to the environment.

1. *Use of Efficient Technology or Devices.* In a bid to manufacture quality products with minimal environmental impacts, BCP has installed Isomerization Unit. Thanks to this unit, octane in Light Straight Run Naphtha is higher while carcinogenic benzene is lower. The installation of Fuel Gas Treating Unit and Sulfur Recovery Unit, meanwhile, has successfully retrieved sulfur from fuel gas for the production of liquid sulfur. The retrieval is a means to reduce waste from manufacturing line and to minimize environmental impacts.
2. *Natural-Resources Management in the Manufacturing Process.* BCP has improved work procedures and made investments to ensure that its utilization of natural resources is efficient. Use clean energy, cut energy consumption and boost manufacturing efficiency. BCP's refinery has mainly used sulfur-free fuel gas, a form of clean energy, for its manufacturing process (over 90% of energy used is fuel gas). Very low-sulfur fuel oil plays much less significant role here (less than five percent). When there is not enough fuel gas, electricity is also used for distillation at the refinery thus reducing the level of air pollution. Moreover, BCP has minimized air pollution by taking the following steps:

- 2.1 Reducing excess oxygen inside distillation tower and steam boiler.
- 2.2 Properly controlling steam system in its refinery.
- 2.3 Reducing energy consumption at the Sulfur Disposal Unit.
- 2.4 Boosting heat-sharing system.
- 2.5 Reducing excess low-pressure steam.

BCP has solely relied on tap water from the Metropolitan Waterworks Authority in its manufacturing process since 2004. Keeping in mind that water is vital to life; BCP has striven to achieve highest efficiency in its water use by improving its work procedures and manufacturing techniques. Raw-water treatment at BCP has now adopted the reverse osmosis system to minimize the use of water and chemicals. BCP has also cut service loops to the minimum to avoid wasting water. Where possible, water is reused.

With responsibility for the environment, communities and its employees, BCP has chosen eco-friendly chemicals for its operations. Its fire-extinguishing chemicals, through careful selection, do not destroy ozone. BCP has tried to minimize water pollution from its operations. To do so, BCP has installed wastewater-treatment systems that are better than what are required by laws. The treated wastewater is discharged to Bang or Canal, which has accommodated wastewater in Bangkok's Phra Khanong district before it flows into the Chao Phraya River. BCP has assessed the quality of its discharged wastewater and has reported it to the Phra Khanong District Office once every three months.

To prevent pollution from petrol transport, BCP has oil-spill booms and related devices in place. If an oil spillage occurs, BCP is ready to take immediate action. Currently, BCP has been a member of the Oil Industry Environment Safety Group Association (IESG), which has long played an active role in operations to remove oil spillage from water.

BCP has used clean energy in its manufacturing process, using fuel gas and very-low-sulfur fuel oil (less than 0.5 per cent). As a result, BCP's emission easily passes the standard limit prescribed by the Industry Ministry as well as the Office of Natural Resources and Environment Policy and Planning. BCP has also tested emissions from its smokestacks along with air quality around its office space and refinery. The tests show that the air inside the refinery is better than what is required by the Pollution Control Department. The test results are displayed in front of BCP's headquarters at all times.

Hazardous waste that can be used as fuel/substitution materials are treated and reused to reduce the amount of waste. For non-hazardous waste, it is either used or recycled for maximum efficiency. For non-reusable and non-recyclable waste, BCP has buried them in a landfill. For general waste, it is separated into proper categories. For example, paper used on both sides are packed and sent to schools for the blind because they can still be used for Braille characters. Some waste is sent to Bangkok Metropolitan Administration for proper disposal. To ensure that its waste does not spoil the environment, BCP has required its contractors to honor its environmental standards. BCP has hired only contractors certified by the Department of Industrial Works.

Growing Trees at its Refinery

Growing trees is a very effective way to increase green areas and also to enhance air quality at BCP's refinery. The trees also provide shade and a relaxing environment. Thanks to lush green trees, there are over 70 indigenous and migratory bird species around the refinery. That is why the refinery now ranks alongside public parks as a birdwatching destination in Bangkok's Phra Khanong district. BCP has also organized "birdwatching activities" as part of its "One Same Family" project. Bangchak volunteers serve as birdwatching guides for interested children, who will very likely acquire the love for nature from such activities.

Indeed, BCP has proceeded in line with occupational health, safety, environment and energy principles. BCP's works in this area include environment and safety training center. BCP has passed ISO 14001 environmental management standard, as well as occupational health and safety standard OHSAS 18001. Moreover, the Labor Protection and Welfare Department has certified BCP as a qualified provider of fire-extinguisher and fire-drill courses. BCP, therefore, has established the Environment and Safety Training Center at its Bang-Pa-In Oil Distribution Center in Ayutthaya to conduct useful courses for interested people and enterprises. The Center is in charge of environment and safety courses and Bangchak Cares for Community Safety Project. Communications about and promotion of safety, health, environment and energy (SHEE) are as follows:

- Social and SHEE Day Project: It features exhibitions about SHEE activities.
- Social and SHEE Channel Project: It is an in-house radio program about SHEE and social issues.
- Social and SHEE Movie Project: It screens movies and documentaries that are useful in raising awareness of safety and environment issues, such as "An Inconvenient Truth."
- Social and SHEE Talk Project: It has invited speakers to give useful lecture to BCP's employees.
- Other activities such as a contest about safety knowledge.

BCP has prepared both accident-prevention and emergency-response plans. Every year, there are both major and minor evacuation drills. BCP has compiled Environment Health and Safety (EHS) information in a Web-Based Application to ensure that its employees can check out related information in a quick and convenient manner. This is an important tool for environmental-management investment, which considers environmental performance in relations to economic performance. BCP has conducted the environmental-management accounting under the International Federation Accountants (IFAC) principles.

With its commitment to sustainable development, BCP has assessed its operations based on eco-efficiency. This principle has focused on economic output in relation to environmental impacts. Product output reflects economic output. Amount of energy used reflects environmental impacts.

$$\text{Eco Efficiency} = \frac{\text{Product Output (Kiloliter)}}{\text{Amount of Energy Used (Kiloliter)}}$$

BCP has adopted the green-purchasing system as a means for Corporate Social Responsibility. The golden rule is to save the environment and also to help local communities. Green Purchasing generally means procurement of products or services that are friendly to the environment or have less environmental impacts when compared with others in the same category. All elements in the products or services are considered right from their raw materials,

manufacturing process, packaging, transportation, and utilization to disposal. But at BCP, the green purchasing is also about strengthening local communities. Under this concept, BCP has prioritized eco-friendliness and community benefits when making any procurement. In environmental aspect, BCP has procured products or services that are:

1. Energy-saving
2. Resource-saving
3. Raw Material-saving
4. Causing less waste
5. Free from compounds or hazardous chemical, or have less of them
6. Not emitting pollutants
7. Easily decompose

In the community aspect, BCP has made procurements that are good to local community's economy. Some of the clear examples are discussed next. BCP has joined the Electricity Generating Authority of Thailand in its campaign against global warming. As part of this campaign, BCP has replaced all existing light bulbs at its offices and service stations with the 28W (T5) designs. Because of its new 85,000 slim bulbs, BCP has successfully lowered its electricity consumption by 5.2 million units each year. This also means BCP has reduced the emission of CO₂ by 2,600 million tons over the same period.

After finding that "Turning on an incandescent tube for an hour emits half a kilo of CO₂," BCP has promoted the use of slim tubes among its neighboring communities. The promotion comes in the form of "Family of Leaf Uses Slim Bulbs to Save Electricity Project". Under this project, Bangchak volunteers reach out to the neighboring communities and explain the benefits of the slim bulbs. Interested locals can exchange their old incandescent tubes with the new slim energy-saving bulbs. Throughout its age, a slim energy-saving bulb is 4.5 times brighter than the incandescent tube. Slim blubs have also reduced the electricity charges by five folds.

BCP has chosen photocopiers that have passed the Hazardous Substance Process Management System Requirements, which control lead, cadmium and mercury, as well as ozone-generating control standard. The chosen photocopiers are also efficient in saving electricity, paper and time. For example, it receives fax in electronic form and can automatically send the information as an attached file to intended recipients' email address.

On oil production, BCP has paid due attention to raw materials, emissions of pollutants and impacts on climate change. BCP, therefore, has taken the following steps:

- In its production of renewable energy, BCP has replaced methyl tertiary butyl ether (MTBE) with ethanol. Made of crops, the ethanol is friendlier to the environment.
- BCP has chosen the used vegetable oil in its production of biodiesel.
- BCP has a plan to replace fuel gas and fuel oil in its distillation tower with natural gas.

When choosing suppliers, BCP has considered their social-responsibility records too.

- For engine oil, BCP has chosen the supplier who has held the ISO9000 certification.
- For waste-disposal suppliers, BCP has chosen only the certified operators with expertise for each category of waste. The right procedure can significantly reduce environmental impacts.
- For employees' outfit to mark His Majesty the King's 80th birthday anniversary, BCP hired housewives and locals in the three southernmost provinces to make the special T-shirts so that they can earn extra income.

BCP has also made many moves to generate income for people at community level. Through these moves, capable communities are given opportunities to be a part of BCP's business because BCP has intended to support Thai intellect and local community's economy in line with His Majesty's Sufficiency Economy philosophy. BCP purchased agriculture produce or items from locals in the three southernmost provinces for use as premiums at its service stations. These premiums are thus in the form of lemons, mangosteen soap, garlic, Luk Yi candies, and more. Furthermore, BCP hired locals at its offices and service stations, which reduces locals' need to migrate to big cities for jobs. Aside, BCP also procured products and services from communities around its refinery.

4. MITR PHOL SUGAR CORP., LTD.

Main Site: Thailand and Asian region

Main Product: Sugar and sugar cane.

Number of employees: 30,000

Vision: To be world renowned company in the sugar and bio-energy business, via innovative technologies and

management talent.

Mission: To improve efficiency to increase productivity of cane, sugar, and by-products, through innovative R&D and technology to enhance competitiveness in the world market.

Value: "Living Together...Growing Together."

At Mitr Phol, employees are committed to strive for leadership, believe in the Value of human dignity, stand tall in fairness, responsibility for society, and sustainable ways forward. Mitr Phol has always been committed to developing the community that it has businesses with. Mitr Phol Group took it as its mission to facilitate local workers and generate income for the community. Approximately 30,000-40,000 households benefited from Mitr Phol projects and at least ten billion baht has been circulated in the local community each year. Mitr Phol Group has invested in many forms of community development projects, not only knowledge and technology transfer to increase productivity, but also efficiency management, e.g. youth leadership, water resource development, cultural and religious conservation and environmental preservation. Such projects helped cane farmers earn more income and thus an improvement in living standard. The same practice also applied to staff development where individuals are taught to think of others rather than self-focused group

Apart from the dedication to initiate new products of choice for their customers, Mitr Phol Group has continued to work closely with every step of production to ensure a consistently high quality of every product under "Mitr Phol" brand. Mitr Phol sugar mill is the first mill in Thailand certified by ISO 9002:1994 and it has been continuously recognized over the years.

The food production systems are also certified by Halal and Kosher standards. Thus, it can be said that Mitr Phol sugar is the sugar of choice for consumers of any ethnicity and religion. The certification of these international management standards can be regarded as evidence of the company's dedication to every process of production and intention to deliver value-based products to customers. More importantly, it reflects their strong passion towards the clean environment.

Environmental Protection

The Mitr Phol Sugar group takes special care in looking after the environment, with installation of modern waste water treatment system and the reuse of the treated water in the farms, together with planting of trees and installation of nets to keep the dust in check. One example is the installation of wind break net to protect the nearby communities from the dust and dirt from the storage of bagasse.

The Mitr Phol Sugar group takes special care in looking after the environment, with installation of modern waste water treatment system and the reuse of the treated water in the farms, together with planting of trees and installation of nets to keep the dust in check.

Water is treated up to the required standard before channeling to the sugarcane farms and water reservoir of Mitr Kalasin Sugar Mill which has become a "natural" breeding pond of various species of fishes. It also serves as alternative habitat for a number of bird species including migratory birds during the cold season.

5. SIAM FOOD PRODUCTS PUBLIC COMPANY LIMITED

Main Site: Sathorn, Bangkok (Thailand)

Main Product: A producer and distributor of processed agricultural products such as pineapple and seasoning fruits.

Number of employees: 2,379 people.

Success: Support social and environmental activities around the factory such as increase green area, reduce global warming and employee volunteerism, waste and water protection and management.

Challenge: Developing good and sustainable relations between the firm and local communities.

Vision: To be world renowned Thai Food Processor with efficiency and sustainable business that commits to satisfy all concerns.

Mission: The common values of the firm as follows:

1. *Quality.* The Company is committed to produce safe food and quality products to meet customer's specification and requirements, regulation of customer's country, international regulations in accordance with food security and established international standards together with continuous quality improvement implementation and effective cost control.

2. *Customers.* The Company is dedicated to high business ethics standards in marketing products with innovations while ensuring quality consistency and food safety. The company products are accredited according to the following standard: GMP, HACCP, BRC, ISO 9001, ISO 14001, OHSAS 18001 and TLS 8001-2553 to provide good quality and satisfaction to customers forever.

3. *Suppliers and Farmers.* The Company cooperates with farmers to support and to develop yield per rai while improving quality and maintaining competitive cost.

4. *Employees.* The Company promotes education and training to employees at all levels, to encourage participation in thinking and creativity in order to achieve continuous improvements while applying systematic working procedures with safety and professionalism.

5. *Shareholders.* The Management team is dedicated to efficiency to ensure that shareholders will receive reasonable and steady return on investment.

6. *Community and Society.* The Company promotes and establishes a good reputation by participation in environment conservation activities and supporting the community and the public.

Environmental Occupational Health and Safety Policy

Siam Food Products Public Company Limited is a world renowned manufacturer of premium quality food with high safety standards, meeting international requirement of environmental, occupational, health and safety management system with employees' participation for customer satisfaction and the society as a whole. The firm is committed to the following:

1. To the continuous prevention and improvements in the environmental management system by reduced and recycled resources.
2. To promote good health, prevent dangerous illnesses from medium risk of employees and subcontractors' activities, prevent accident and near-miss which will affect life, resources and processing.
3. To develop the environmental, occupational, health and safety management system in compliance with legal requirements, and other requirements that concern with environmental activities or products in the scope of environmental management system.
4. To establish, review objectives and target to fully comply with environmental aspects and medium risk.
5. To promote and support business partners, contractors to use raw material and services with high concern for environmental, occupational, health, and safety management systems.
6. To training and awareness on environmental, occupational, health and safety management system for all employees.
7. To support the human resources, timing, training, evaluation, improvements, occupational, health and safety management system continuously.

6. CHAROEN POKPHAND FOOD PUBLIC COMPANY LIMITED (CPF)

Main Site: Bangrak, Bangkok (Thailand).

Main Product: Agro-industrial and food, crop integration, pet food manufacturing, seed fertilizers and plant.

Number of employees: 25,422 people.

Success: The firm transferred "know-how" to local communities in order to build good business relationships and sound finances, while also looking after the environment.

Challenge: Charoen Pokphand Foods Public Company Limited (CPF) has committed to integrating social and environmental concerns in everyday business whether it is locally or abroad. CPF continues to maintain their support for community development by seeking to create self-sustaining initiatives with an aim to improve overall quality of life.

Vision: To become "Kitchen of the world" that devotes in research and development to achieve more efficiency and effectiveness.

Mission: The firm is creating a better tomorrow for all and they are committed to employee and product development standards. CPF is committed to improve the competitiveness of the Thai Kitchen sustainability.

The firm has followed high ethical standards and has used careful discretion in conducting business with concern for consumers' safety, health and environmental conservation for the benefit of society as a whole. They have also focused on the development of new products and services with high quality standards through the use of advanced technology which will ultimately benefit their business partners and consumers. CPF realizes that human resource is the material factor for the success of the company. Having good and proper working values shall also support the company efficiently reach their target. The firm has set forth six principles which are incorporated into CPF Way: embrace change, master learning and sharing, innovation, integrity and honesty, result orientation, and dedication to achieve the targeted goals.

As for green management, the firm has a policy that every business unit is responsible to green management by giving priority to pollution prevention, natural resource conservation and reuse, and efficient operation to strictly conform to the environment quality laws. As such, they are committed to the following:

1. A monitoring system and continuous improvement of the effectiveness of green operation.
2. Green management inspection and assessment of business units to ensure that the firm conforms to environmental regulations and meet objectives and goals. At the same time the firm should be able to efficiently control risks.
3. The firm has investigation and evaluation of new technologies on pollution control, natural resource conservation, and regular support of sustainable business operation.
4. Focus on energy management. Increase of the ratio of alternative energy used in production processes as environmentally friendly policy, the firm has increased the usage of the alternative energy such as bio-gas in production line. The adjustment has substantially minimized greenhouse gas emission and was in line with the government's alternative energy development plan that required more growth in domestic renewable energy consumption.

V. SUMMARY

In 2011, Thailand faced the worst flood crisis in many decades. Many people were forced to abandon their homes for their own safety. People were short of food, shelter, and medicine. Moreover, the economic ramification was tremendous. Many manufacturing sites were forced to close down. Transportation routes were unusable. People were out of job. The whole economy was in a stalemate. At one point, it was estimated that the total damage of the crisis amounted to a trillion Thai bahts. It is still arguable today whether the disaster was man-caused or nature fury. Regardless of what the true cause is, people need to rethink and start taking a better care of their environment.

In the past, many companies more often than not ignored the environmental impact of their actions, whether it is cutting down trees, dumping waste in rivers, etc. Their main concern or only concern was to make money. The 2011 flood crisis should shine some light on businesses and their leaders to reconsider the environmental impacts of their previous actions, as some people believed the flood was man-caused thru years of destroying and abusing the environment. Thus, it is time to rethink and take prompt actions to protect the environment. Green management is one way to help companies protect their environment. The concept entailed utilizing resources in the most effective and efficient manners as well as rejuvenating the environment thru rebuilding and reducing wastes.

As can be seen from the case studies, selected companies have begun to implement green management concepts. Companies enthusiastically encourage and support its staff to think green, from the ground up, whether it be in terms of production, packaging, selecting raw materials, and other such activities. In doing so, these companies play an important role in protecting the environment. Not only will such actions benefit the society as a whole, but they also yield economic benefits for the companies themselves as many consumers nowadays prefer to consume and support environmentally friendly products and/or companies. Hopefully, one day, all companies will think alike and play their part in environmental protection.

VI. DISCUSSION QUESTIONS

1. What is green management? Discuss.
2. Why is sustainability an important aspect of success in the twenty-first century workplace?
3. What are some best practices for green management in Thailand and other countries? Provide some examples.
4. What can companies such as McDonalds, Wal-Mart, Tesco, 7-Eleven, and others that you are familiar with do to become green firms with sustainable operations?

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