

## ASSIGNMENT #1: CASE STUDY ANALYSIS

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### **Introduction:**

Krabi is located on the west coast of southern Thailand, adjacent to the Andaman Sea and, about 814 kilometers from Bangkok. There are two seasons, the summer and the rainy season. The area, covers an area of 4,708.512 square kilometers. (Krabi province, 2018). The region consists of eight districts with 470,643 people. (Krabi province, 2018). Krabi is the tourist destination of the country and there are many natural attractions, both by sea and land. Krabi is a city that blends the lives of people from different nationalities, religions and beliefs including Buddhists, Muslims, and Chinese. In terms of tourism, Krabi has the highest tourism income (96,972 million baht) of, the four tourism regions in country, (Krabi is followed by Bangkok, Phuket and Chonburi) with an estimated 6,000,000 tourists per year. (Krabi Province, 2018). The first point that travelers arriving through Krabi airport come to is Krabi town, where the municipality of Krabi is located. Krabi Town has an area of 19 square kilometers. The number of people registered in the municipality of Krabi totals 30,313 people. The total number of households in the area is 15,551 households. The population is increasing every year and, in all probability, there are 20,000-30,000 more people not in the population register. (Krabi Municipality, 2018). Krabi's tourism has grown from 2002 to the present. As a result, many people have moved to live in Krabi town, marking a change in direction due to the economic growth from the tourism economy. But at the same time, growing populations trends have affected the lives of urban residents. The area has many buildings, so as to accommodate tourists, and residents, including shopping malls, restaurants, and accommodation. All of this infrastructure produces a substantial amount of solid waste in daily operations. Solid waste in the municipality has become a serious problem and if good management practices are not applied in the future, the problem will worsen, similar to situation seen in large cities with high population density but low waste management capacity. (Dhokhikah, Trihadiningrum and Sunaryo, 2015). Problems will include when heavy rain comes, there will be floods because of garbage clogs, caused by household garbage.

So, it is essential for the city to plan and prevent problems related to waste management. The mayor of Krabi must have a vision for sustainable development in the areas of economic, social-cultural, and environmental sustainability in order to create a sustainable and low carbon city.

### **Initiative 1**

Krabi municipality has a city policy to implement waste management in urban areas with household waste management:

1. The city government has performed duties in accordance with the public health law, and has asked for cooperation from community health volunteers.
2. Destination waste management by landfill started in 2007 till now, with a 251 rai (401,600 square meters) landfill. The first year there were 40 tons of waste per day; now there are 150-170 tons of waste per day.
3. Krabi municipality has a project to build a waste power plant, but this project has been opposed by the local people. There is now a study underway about informing the public of the impact of the power plant on the environment and health of people in the community.

### **Evaluation:**

Krabi municipality has a waste management law but law enforcement is not strict. The management system is not effective. In addition:

1. Waste disposal in the landfill damages the local ecosystems.
2. The waste management system is non-standard garbage collection, with no plan to recycle any of the waste.
3. Local public relations for the collaboration and increasing awareness of waste problem is not successful - many people think of waste management as the duty of government agencies.

### **Initiative 2**

An initiative to encourage participation of the local people in order to solve the source garbage problem. This would include education on, how to sort waste and to use the Krabi municipality waste collection services, making efforts to cooperate in the separation of household waste. However, it is a small group made up almost entirely from municipal health volunteers.

**Evaluation:** There are very few households participating in the initiative to reduce household waste. For example, of the 14 communities, there were only 2 communities' representatives who applied to reduce waste through the program, by converting processed garbage into compost and generating income by social enterprise initiatives with the compost to support crab and his farming.

### **Initiative 3**

Other actions to communicate to and educate the local people, in order to change the public's behaviors for a low carbon society. This would include specific education programs on, absorption and emission of greenhouse gases (GHGs).

- Absorption: Krabi municipality is located in an area of mangroves, accounting for 11.23% of the Krabi municipality area. Programs to protect and propagate mangroves could help absorb GHGs emitted by waste and other sources.
- Emission: Emissions can be lowered by using education on waste management, energy efficiency and sustainable consumption.
- Current waste management law is not effective. Regarding energy efficiency, there needs to be a plan on how to manage and reduce GHGs emitted through transportation, and electricity by education and increasing awareness, so local people to change their behaviors in relation to consumptions.

## **Conclusion**

Waste management problems are always a challenge for the growing city. However, there must be a solution to the problem if the city will plan to be visionary and look toward the future. The city leader is a key factor, and she/he needs a clear city policy with goals, such as being a low carbon city or a green city.

Krabi municipality must have a form of participation from sectors/stakeholders. There have been numerous case studies in developing countries that have proven that community participation in waste management plays a vital role in contributing to the success of the services provided. (Ahmad, Mohamed and Kamali, 2016). Participation needs to be more hands-on in the private sector, especially from tourism businesses such as hotels, restaurants and public transportation services account for such a large portion of waste generated. One more very important factor public communication in all forms to create awareness, educating the local people and leading to behavior change, which will lead to a low carbon society. The concept of low carbon cities is a good way of life. Catlyne Haddaoui (2018), a researcher of Coalition for Urban Transitions, has provided an answer to the low carbon economy: It is a city that can provide people living in the city a good quality of life and will be available in three main ideas: Safer Transport, Better Buildings and Seizing the Health Opportunities.

Krabi municipality must have a public relations style and public media that is adapted to public awareness in the era, and a communication strategy to reach all age groups with two-way communication is essential to facilitate this.

There is suggestion that Krabi municipality must set clear policy on the subject of waste management law.

Creating a participatory process across all sectors in doing this is crucial. In particular, the opportunity and motivation for the private sector to participate in the city's waste management is critical. (The Guardian, 2016)

Local media can be the mechanisms to bring the communities' the activities and follow up, and can then combine with social media to further support in sustainable development. (UNESCO, 2015). Communication plays a fundamental role in the social process of environmental education, as without this tool, people have no access to information for change attitudes or behavior (International Solid Waste Association, 2015).

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