

Collaborative Governance Of Marine Plastic Waste Of Local Administrative Organizations In Thailand Case Study: Phuket City Municipality

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Abstract

This article aims to study the collaborative role of Phuket City Municipality in marine plastic waste management among public, private and social sector. Selection of key informants was done by a theoretical sampling method through Collaborative Governance theory. The sample group was divided into 3 groups: government, private and social sector. Since it was a case study, key informants were selected by purposive sampling. The tool used was semi-structured interview and analyzed data by content analysis and triangulation validation.

The findings showed that Phuket City Municipality has created cooperation among government, private and social sector according to the legal authority, clear goals system to drive in every dimension as follows: 1. Government sector: Phuket City Municipality collects, transports, and disposes the waste according to its duty. Phuket Provincial Committee was established to be a driver and integrator in the cluster of local administrative organizations , local government agencies , international organizations and ministerial level. 2. Private sector creates cooperation with large waste sources to participate in the management of source waste through social networks. 3. Social sector by building cooperation through community leaders and the community of Phuket City Municipality, promoting the

processing of recycled products, creating a provincial environmental foundation to reduce bureaucratic constraints, educating on waste management through municipal schools, creation of communication channels to solve problems with the people, and building cooperation with educational institutions to educate and build cooperation with the public. The cooperation of these 3 sectors is in line with the concept of Collaborative Governance

Keywords: Collaboration, Marine Plastic Waste, Local Administrative Organization.

1. Background and Statement of Problems

Marine waste is human waste that is directly or indirectly dumped into the sea intentionally and unintentionally from small to large such waste is plastic waste that is lightweight and cannot be decomposed in a short period of time, therefore being carried to distant places by waves, wind, currents and tide (UNEP and NOAA, 2011). A global problem that affects a wide ecosystem every year. The origin of marine waste comes from two important sources, namely the origin of marine waste on land and in the ocean: 1) The origin of Marine waste on land is community landfills, garbage collection and transport system (land and waterways), runoff during heavy rains can carry waste into the sea, industrial and manufacturing sectors, inappropriate solid waste management and natural phenomena. 2) The origin of marine waste in the ocean come from the sea and the coast, such as ship transportation, cruise ships and tourist boats, marine and coastal fisheries, oil and natural gas drilling, coastal tourism and aquaculture activities. According to the data, most marine waste originates from land, up to 80%, and the remaining 20% originates from the ocean. (Department of Marine Resources and Coastal, 2016) which countries with the highest 10 "plastic waste" in the sea found that there is another interesting information about "plastic waste", which the Euronews Green website published statistics in 2021 indicating countries with maximum plastic waste overflow , data is as follows: No. 1 India with 126.5 million kilograms of plastic waste in the sea, second place China with 70.7 million kilograms of plastic waste in the sea, third place Indonesia with 56.3 million kilograms of plastic waste in the sea, fourth place Brazil with 38 million kilograms of plastic

waste in the sea, fifth place Thailand with 22.8 million kilograms of plastic waste in the sea, sixth place Mexico with 3.5 million kilograms of plastic waste in the sea, seventh place Egypt with 2.5 million kilograms of plastic waste in the sea. Thailand is the fifth of the world (Bangkokbiznews, 2022).

Thailand has measures to reduce the marine waste problem, namely the National Solid Waste Management Master Plan 2016-2021, therefore establishing a sub-committee on plastic waste management under the National Environment Board and the Working Group on Plastic Management Mechanism Development under the Plastic Waste Management Subcommittee. The Pollution Control Department therefore has prepared a Roadmap on Plastic Waste Management 2018 - 2030 (Thailand's Roadmap on Plastic Waste Management 2018 - 2030). Plastic waste management action plan Phase 1 (2020 - 2022) to be used as a framework and direction for preventing and solving plastic waste management problems of the country. The Action Plan on Plastic Waste Management Phase 1 (2020 - 2022) places emphasis on building partnerships at the city and local government levels, in order to prevent and solve the problem of plastic waste according to the measures listed in the plan requires cooperation from the city sector and local government organizations both in the process of operation and monitoring of performance, such as campaigns against the use of plastic bags in department stores and fresh markets, reduction and separation of plastic waste at households, prevention of waste dumping into the sea. It is therefore necessary to urgently raise awareness to avoid the consumption of single-use plastics and develop the potential of local agencies and personnel including the development of structures and systems for integrated waste collection and sorting determining rules/regulations/practices for tourism business operators and maritime transport in the area to prevent the dumping of waste into the sea, supporting local authoritative organizations to set rules, local regulations for solid waste sorting especially to increase the efficiency of waste management of local administrative organizations. Waste management system is an important factor in formulating policies to prevent and solve plastic waste problems. At present, Thailand does not have a waste separation system at origin that is clear and concrete enough to reuse uncontaminated plastic waste, including the

management system at the destination, most of them are landfills, both correct and not technically correct which takes long time to decompose. There are only some areas that have efficient furnace systems and pollution management systems that meet international standards. Local administrative organizations and agencies at the area level need to cooperate in waste management at the destination, especially in the 24 seaside provinces to develop a waste management system with the principle of 3R (Reduce, Reuse, Recycle) to be more efficient. This will affect the prevention of land waste entering the sea. (Pollution Control Department, 2021).

Marine waste management requires cooperation from all sectors. Since government agencies will operate unilaterally, it will be difficult to succeed. It is necessary to seek cooperation and support from all sectors in society, that is, the important social structure consists of the public, private sector and social sector. The social sector is a structure that unites people in the area through community culture. (Robert Agranoff & Michael McGuire, 2003) in public administration and is considered an important strategy for public organizations, especially governments, local authoritative organization which has the main concept of creating cooperation with all sectors to strengthen common goals leading to joint missions in the form of partnerships with common commitments and provide assistance and support to each other in both formal and informal forms in order to solve problems together.

Phuket is an area with 722 tons of solid waste generated/day, 105 tons/day of recycled solid waste, and 910.00 tons/day of properly disposed solid waste with proper waste management resulting in zero residual waste, which Phuket Municipality's solid waste management found to be a "pilot city" as a model of Thailand in integrated waste management among local administrative organizations throughout the province, which Phuket City Municipality is the main host for Phuket's solid waste disposal operations from all local administrative organizations and from the private sector. In this regard, cooperation has been undertaken to solve the problem of marine waste. The highlight of Phuket City Municipality is that it is an important tourist city of Thailand and is a model municipality in Thailand in integrated waste management among local administrative organizations throughout the province and manages marine plastic waste by emphasizing on cooperation with the government sector,

international organization and various social sectors. This is in line with the concept of cooperative management between government, private and social sectors.

2. Research Objectives

To study the collaborative role of Phuket City Municipality in marine plastic waste management among public, private and social sector.

3. Research Methodology

This research is a qualitative research using a paradigm guided research in constructivism, which is a study of the experiences of local administrators and practitioners related to the problem of cooperative management of marine plastic waste of Phuket City Municipality according to actual conditions.

In selecting key informants, a theoretical sampling method was used using a collaborative management theory, Collaborative Governance determines the sample group into 3 groups, which are government, private sector and social groups. This is a case study in the area. Key informants were selected using purposive sampling. There were criteria for selecting key informants from the case study areas as follows:

1. Criteria for key informants to be local residents or workers or work related to the area under study.
2. Key informants must have at least 1 year of experience in cooperative management of marine plastic waste because if the time for cooperative management of marine plastic waste is too short, it will not be able to analyze the process and results from the experience that occurs.
3. Key informants were willing and consent to participate in the study.

From the preliminary key informant criteria in the study of developing a collaborative management approach to managing marine plastic waste between the public, private and social sectors in a case-by-case study. The key informants were divided into 3 groups:

Group 1: The government sector consisted of 7 people. These representatives involved in collaborative marine plastic waste, using word-of-mouth sampling (Snowball Sampling) recommended from Phuket City Municipality representatives.

Group 2: The private sector consisted of 3 people.

Group 3 Social sector groups consisted of 5 people

This study used content analysis by descriptive analysis based on reality, interpretation and meaning in accordance with the objectives of the research, analyzing the information obtained from the opinion interviews and facts about the joint management of marine plastic waste by local authoritative organizations including suggestions for ways to develop a collaborative marine plastic waste management of local authoritative organizations from all 3 groups of key informants from direct interviews and analyzed together with secondary data. In analytics, data is important to provide data analysis results to be consistent with the research objectives.

The researcher used the triangular data validation principle. In addition, the researcher used a data assessment method based on Chasmaz's (2014, p33) approach to assess the integrity of the data, whether background, person, process and place information is available for retrieval and understanding of the context under study.

4. Research Conclusion and Discussion

4.1 Conclusion

Phuket is the World-famous province. Each year, many Thai and foreign tourists visit Phuket, each year Phuket receives more than 12 million tourists, thus creating a lot of employment as well. The population in the province is only about 400,000, but there are more than 1,500,000 latent populations. When there are numbers of population, as a result, the amount of solid waste increases as well. There used to be a problem with overflowing garbage in Phuket. This results in waste water and garbage flowing into the canals and into the sea.

The role of Phuket City Municipality and cooperation with government agencies

Management of sewage and solid waste, such as collection, transportation, and disposal, is the responsibility of Phuket City Municipality according to Section 18 of the Public Health Act B.E. 2535 (1992). If there is a reasonable cause, it may be assigned to a person to act on their behalf under the control of Phuket City Municipality. or allow any person to operate. This will be implemented in 3 ways, namely, the first; the municipality operates by itself, the second: sub-contract work with the municipality, the performance will be reported to the municipality. Due to the problem of the municipality's

manpower being insufficient for operations and government regulations are unable to hire alien workers. Hiring a juristic person will report results to the municipality in operating expenses and wages, which must meet the specified conditions, such as having a car, having labor to carry out the route specified. The third type is a license issued by the municipality, operate as a business. There will be a fee for service, such as a hotel from a licensed person to collect. In collecting, there will be a separate collection vehicle, separated by day for storage, such as organic waste, hazardous waste. There will be a coordinated date and time in collecting. The marine waste will be collected from buoys intercepted along the canals by the private outsourcing and take it to the garbage disposal center.

From the problem of solid waste arising, Phuket City Municipality cooperated with local authoritative organizations in Phuket. Therefore, a solid waste management committee has been established, which has set a form of integrated waste management from the beginning and bring waste back to use as much as possible. By creating a network of participation among public, private and social sectors later in the year 1995, Department of Public Works and Town Planning, Ministry of Interior built the furnace incinerator in Phuket. It is the first large basket kiln in Thailand. Phuket City Municipality is the main host for Phuket's solid waste disposal operations from all local authoritative organizations and from the private sector, which accepts all waste disposal in Phuket to be managed at the Phuket Municipal Solid Waste Disposal Center, Muang District, Phuket Province. which is managed systematically and received cooperation from all sectors. The disposal fee has been set at the rate of 520 baht per ton in order to proceed according to the correct disposal process system. The management of waste at source in Phuket is operated by a solid waste management committee, which is now changed to Phuket Sewage and Solid Waste Management Committee which will have the main mission emphasis on granting, permitting, planning and commenting on management systems, recruitment, disposal, education and providing local policies to manage waste problems which is a space to participate in brainstorming ideas. The main policy is about reducing and separating waste, which plastic waste will go into the recycling process which plays an important role in building cooperation with network partners in Phuket

Marine Plastic Waste Management, in the beginning, Municipalities did not focus on marine waste. It was just to stop the garbage not to leak into the water source, which used management method by using local wisdom by bringing bamboo from the waste disposal center to tie together to trap waste and collect it according to the system, but in the year 2019 there was news about the death of Mariam whale from marine waste which the Phuket City Municipality took as an important issue in management by inventing a way to prevent waste from entering the sea is from bamboo to make a landfill and lead netting to be installed in 3 canals in the municipal area, namely Khlong Bang Yai, Khlong Saensuk, and Khlong Ruam Chai, and have them collected so that garbage does not go into the sea. In marine waste management, Ministry of Natural Resources and Environment plays an important role in making cooperation at the ministry level and foreign organizations such as the German International Cooperation Agency (GIZ) and ask for cooperation to local authoritative organizations that are in the sea as a pilot province in marine waste management, which the Phuket City Municipality is also involved in the form of cooperation among public, private and social sectors as a network to reduce the use of plastic. However, in integrating the network of government agencies at Phuket City Municipality, it is in the form of an integrated MOU in the province, consisting of local provinces, Phuket Province, Phuket Provincial Natural Resources and Environment Office, Regional Office of Natural Resources and Environment 15, universities and local administrative organizations in Phuket, such as coordinating the Foundation with Prince of Songkla University (Phuket) to help separate the elements of waste and the activities of collecting garbage on beaches of network partners within the province.

Roles of Phuket City Municipality and Cooperation with Private Sectors

Cooperation with local hotels, each hotel must be sorted first as a specified condition because it is a large source of waste. If it is a large hotel, the Environmental Impact Assessment (EIA) will perform functional waste separation. As for small hotels, there will be a reduction and separation project, which if sorting will reduce the weight and reduce the cost of waste disposal, and can bring the separated waste such as plastic bottles to be sold and will make income back to the hotel, which can be used to as welfare for employees and reduce

hotel expenses as well. The hotels in Phuket have cooperated with the municipality because government activities will help promote publicity. This will build credibility and elevate the brand of the hotel where tourists group from America and Europe pay attention to the environment.

Collaborating with shops within Phuket City Municipality join projects within the province through activities on the part of municipalities, provinces, foundations and other parts in many activities. by cooperating through local network groups.

Roles of Phuket City Municipality and Cooperation with Social Sectors

Community Leadership Community of Phuket City Municipality, community leaders in the municipality participate in the community with the municipality on a monthly basis. The municipality has given the waste management policy by sorting and educating community leaders, which community leaders will work with community committees in waste management. This resulted in many community banks in Phuket City Municipality and promoting the use of recycled materials to make products such as brooms made from plastic bottles, the municipality has provided a market for those products.

Management of cooperation with the social sector with the establishment of the Phuket Environment Foundation under Phuket City Municipality. As a result of the statutory limitations, the municipality cannot act on matters outside the municipal area of responsibility. The municipality will be able to subsidize to the foundation to operate because the foundation is a juristic person, making it in accordance with government regulations, such as subsidizing, training, educating and other agencies can subsidize the foundation to operate both within and outside the area of responsibility due to marine waste comes from many areas. Relying on only one municipality to manage would not be effective. The structure of the foundation arises from the participation of the community. such as a group of vendors and stalls.

Educating and creating awareness for youth through Phuket Municipality's educational institutions with a policy Passed a course on waste management hidden in the activities of the schools under the jurisdiction, for example, allowing students to study at the municipal waste management learning

center to make students aware of the origin, middle, and destination cycles of waste generated and the consequences that follow.

Cooperation of the people, people in Phuket have high citizenship because it is a tourist town. Image is an important factor. The municipality has communication channels through websites, applications, and executive phone numbers and the telephone number of the person responsible for waste management. The Phuket City Municipality has received a large number of complaints through channels that are open. Phuket City Municipality will coordinate the responsibility to the private sector that contracts the operation into practice.

Collaborating with universities to educate and create awareness among the people. There is a collaboration with Prince of Songkla University in providing knowledge and helping to create awareness among the people through cooperation. This builds credibility with the community especially if community leaders agree to drive policies and programs on waste management can be easily put into practice.

4.2 Discussion

Role of Phuket City Municipality has created cooperation between the public, private and social sector according to legal authority have clear goals, there is a system to drive accordingly. Concept of Collaborative Governance that brings many groups of stakeholders, both private, public and social sectors join government organizations in creating cooperation as follows:

1. Public Sector

Phuket City Municipality collects, removes, and disposes. It is the duty of Phuket City Municipality, according to the Public Health Act which is the operation itself according to traditional public administration The local government plays a major role in waste management both coordinating facilities, supervising and regulating waste management activities in the city. The key strategy is planning and providing waste management infrastructure (Shuo Seah, Dominic Addo-Fordwuor, 2021). Because of the lack of a clear legal framework, it leads to errors in management roles and responsibilities (M.Caniato, T.Tudor, and M.Vaccari, 2015). Therefore, it is necessary to rely on actors from various sectors involved, consistent with R.A.W. Rhodes. (2000) that must integrate the characteristics of

government affairs in the dimension of public administration. Administrative Governance Successful public performance of the state, especially waste management, requires the role of multisectoral actors which Phuket City Municipality shares with others or takes action by managing tasks together (co-operative management) which operates, collects, transports and disposes according to the model of Osborn (2010). Contracting that entrusts other waste management operators that are more effective to perform instead and according to Donald F. Kettle (2000), the contract system is used in waste management in laying out the pattern and stipulate conditions to guarantee performance, a contract out arrangement between the public and private sectors in management must also be taken into account (Jinxin Zhu and Gordon Huang, 2017), which if done in large municipalities, will result in more budget savings than smaller municipalities (Jana Soukopová, Gabriela Vaceková, and Daniel Klimovský, 2017). Collect and transport solid waste, these service providers employ local residents (Aminatha Kirama and Aloyce W. Mayo, 2016).

In addition, Phuket Waste and Waste Management Committee has been established consisting of representatives from various sectors with the responsibilities to suggest, recommend, and help local governments to prepare sewage and solid waste management plan as well as drive it into practice, make clustering areas for sewage and solid waste management plans of local administrative organizations and waste disposal sites, consider and scrutinize projects for requesting budgets for sewage and solid waste management, consider and scrutinize solid waste management projects assigned to the private sector or in conjunction with the private sector or other local authorities invite individuals or government agencies involved in sewage and solid waste management to participate in monitoring and evaluating solid waste management projects appointing a working group to assist and perform tasks as assigned by the governor, consistent with Stephen P. Osborn (2010). Public policy governance consists of actors from many sectors to drive political direction in public policy processes. The main agency for waste management is government agencies, both at the central level local level and has a committee that oversees waste management as well (M.Caniato, T.Tudor, and M.Vaccari, 2015), which is a process carried out by the role of diverse interest groups acting together within a policy network

(R.A.W. Rhodes, 1997) with a centralized nature under the Phuket Waste and Waste Management Committee. The roles of the Board of Directors are clearly defined. It is a forum for brainstorming ideas from all sectors. A centralized management system, which can be said that Phuket is a model of integration that extends to other localities.

2. Private Sector

In creating cooperation from large organizations and shops in Phuket municipality with cooperation from large waste sources such as hotels, shops. Making cooperation with public sector will make private organizations such as hotels have a good image of the organization to the eyes of customers through collaboration with government agencies especially if it receives an award from a government agency to create credibility to an organization is a very important part. However, the fact that private organizations cooperate with City municipalities help reduce the cost of the organization to pay for the waste management that has been established. Use the reduced budget to develop other projects. In addition, proper waste management can lead to plastic waste sales to create welfare for employees as well, corresponding with Dalia Saadeh, Issam A. Al Khatib, and Stamatia Kontogianni (2019) explaining how to create sustainability in waste management, there must be laws to facilitate the work of local officials and create motivation for private sector to cooperate with the public sector if there is good waste management such as receive incentives from government agencies, such as reducing waste management fee (Jinying Xu, Weisheng Lu, Meng Ye, Fan Xue, Xiaoling Zhang, and Billy Fook Pui Lee, 2020) as Stephen P. Osborne (2010) places emphasis on the role of networks of actors involved in public policy mechanisms and processes of the public sector Jon Pierre and B. Guy Peter (2000). The goals and objectives of playing a variety of roles in order to create coordination and cooperation to achieve goals. The solution to the waste problem requires the cooperation of the bureaucratic system and the market system and networks (Hiroshan Hettiarachchi, Sohyeon Ryu, Serena Caucci, and Rodolfo Silva, 2018). Therefore, waste management can be successful if it is supported by private sector for small private enterprises in establishing cooperation with the municipality. There has also been coordination through the personnel of the municipality and other agencies persuade in participating in project activities organized by various sectors which in this way

is one of the highlights of the creation cooperation in Thai society especially in Phuket where the characteristics of the local population are high affinity. Therefore, relationships between individuals, groups of people, when persuaded are received good cooperation.

3. Social Sector

Policy implementation of Phuket City Municipality is characterized by relationships or forms of interactions between public sector organizations and social actors in the manner of managing urban affairs in a dimension interaction between social and government actors (socio-political governance) (Osborne, 2010) as follows.

The community leader is an important mechanism in driving the municipal policy because it is the person who is close to the community and be a leader in the area which has been accepted by the people in the area whenever the leader agrees will easily get that cooperation from the community. Phuket City Municipality organized a meeting with community members on a monthly basis to brainstorm ideas, inform news, and contribute to municipal policies towards cooperation in practice, in which the community leader will bring the issues that the community considers together with the community committee in practice, such as promoting the processing of recycled plastic products that coordinates cooperation through leaders to provide knowledge and put into practice until causing community products to generate income for people in the community themselves.

The Emergence of the Foundation for the Environment in Phuket occurs from the integration of various sectors in Phuket Province, for example, the group of people in the area themselves which received support from the municipality and other organizations both domestically and internationally in various forms in carrying out activities to manage plastic waste sea. Therefore, the implementation of various policies implementation, thus receiving good cooperation through the social network of foundation and is flexible in operations and has work covering areas and sectors, so the establishment of cooperation in waste management does not apply only to cooperation from government agencies and private sectors. If the action is to be carried out individually by

all relevant parties from households, garbage collectors and non-governmental organizations (NGOs) (Igiekhume M. J. & Momoh E.O. & Jubril A. Al-Amin & Okpugwo E. & Eryanmen R.I & Thomas B., 2021). In addition, the network behavior is complex and is influenced by differences in perception levels Data exchange and access to finance. (M. Caniato, T. Tudor, and M. Vaccari, 2015)

In addition, the people have a sense of citizenship in taking care of and helping To examine the performance of municipalities or private sectors performing waste management duties through the channels in direct communication with the municipality which increases efficiency in waste management achievement. Therefore, building awareness of the public on the economic value of waste, there is cultivation of separating waste from school, home to expand to the public. Therefore, it is an important part of garbage management (Rajiv V Shah, Samapti Guha, 2021).

Including raising awareness among young people by providing knowledge on waste management through schools in 7 municipalities, which have courses and activities on waste management which is the cultivation of mind to young people who are very good and continue to sustain. Therefore, it can be said that education results in motivation and waste management attitudes (Mugweri Fredrick, and Joseph C. Oonyu, 2019) and the role of universities in the area have an important part that is a source of knowledge and students who help to educate about benefits and proper waste management which people in the area trust and can also create cooperation with the people is good. Therefore, it was found that the university should play a greater role in order to manage waste successfully require expertise from the university or local organizations (Nachalida Yukalang, Beverley Clarke, and Kirstin Ross, 2018)

From the study, it can be concluded that the role of Phuket City Municipality is coordinating work in integration in the form of network partners which such characteristics are the center in creating collaboration between public, private and social sectors (Hiroshan Hettiarachchi, Sohyeon Ryu, Serena Caucci, and Rodolfo Silva, 2018).

Managing public affairs with a variety of dimensions to respond to various stakeholder groups so that achieving the objectives of marine plastic waste management of the local gold plantation administration accomplished through the collaboration of all three sectors, in line with Osborne's (2010) idea that explaining the concept of new urban management (New Public Governance) has productivity and examine the current situation in the implementation of policies in the provision of public services that are

More complex switching cannot be managed by only one government sector but it will be involved with plural roles and actors, it is a process that cannot be used solely in a single implementation. It needs to be a wide range of forms and approaches that differ across sectors and sectors to create cooperation in waste management of the golden plantation administrative organization to achieve efficiency and effectiveness of the province.

4.3 Implication

Phuket City Municipality is regarded as a local authoritative organization in Thailand that has problems with garbage, whether it is general waste or marine plastic waste because it is a world-class tourist city. There is a latent population and a large number of tourists, which causes a large amount of plastic waste to occur. Highlights of Phuket City Municipality which is the municipality that is the central waste management center of the Phuket group developed from the context of the area public policy whether it is the policy of each government in each era. Ministry of Interior or the Ministry of Natural Resources and the Environment or agencies in the province That is integrated between government agencies, the private sector and the social sector according to the concept of Collaborative Governance, which is important in jointly driving and solving various problems, especially waste management issues that all sectors agree together. In the tourism dimension which is the main income of Phuket people, having shared values, helping each other to look after the environment that is a selling point of Phuket, which requires the integration of various sectors that must be strong demonstrating roles in their sectors in accordance with the local context. In the government sector, to go beyond the Thai bureaucracy in driving policies under the limitations of the law private sector for business benefits and the social sector to create a good

quality of life in the community in relation to income. Therefore, from the findings, it may be enough to conclude that Phuket represents the role of various sectors that has a clear role in the integration of participation.

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