

BUILDING A NETWORK FOR CREATIVE INTEGRATED ECONOMY DEVELOPMENT ON ENVIRONMENTAL MANAGEMENT SYSTEM, YALA PROVINCE, THAILAND

Nattharawee Phongkraphan, Yala Rajabhat University
Rachada Boonkaew, Yala Rajabhat University
Sutida Lekhawichit, Yala Rajabhat University
Satita Kaewlek, Yala Rajabhat University
Teerayuth Mooleng, Yala Rajabhat University

ABSTRACT

This research aims to 1) study the current state of problems and the necessity for creative integration 2) create a network for the environmental management system 3) create a learning plan for integrated economic development and 4) initiate a guideline for network building and creative integrated economic development towards the Environmental Management System. The study is conducted in the hot spring area of Ban Na Kor, Ayer Weng Subdistrict, Betong District, Yala Province. This research is analyzed qualitatively using the concepts of Papargyropoulou, Lozano, Steinberger, Wright, & Bin Ujang, (2014) as the research framework. Research participants are environmental management systems experts, government-private sector, local operators, local people, and institute total of 56. Purposive Sampling was employed in the participants' selection process. A research instrument is an in-depth interview. The data is analyzed with the descriptive method. The result found that 1) the waste increases at an average of 0.174 percent per year or an average of 0.317 kg/day/person. This is due to the increase of consumption activities in the businesses of entrepreneurs, 2) the network building process in all 4 aspects of the network and organization should be solved to the problem of rubbish in the area which is Promote of build networking, network management system, network utilization and network maintenance, 3) the creating plan of creative integrated economy development learning in the area which can operate by networking process to create sustainable waste management and established waste bank to collect recycled materials in the community. The knowledge from this research is to create the concept of utilizing resources with value by creating creative activities that integrate innovations to optimize the efficiency of each type of waste management to cycle back to create value through appropriate processes.

Keywords: Environmental Management System, Creative Activities, Waste Management.

INTRODUCTION

In Thailand, the problem of community solid waste has been serious and chronic for a long time (Pollution Control Department, 2017), and the waste problem was brought into the national agenda in 2014 (2557 B.E.), but the amount of waste continues to increase. Some areas are modeled according to the context of the area but there is a lack of learning and understanding factors in that area. Currently, it is found that the management of community solid waste at the source or the management or disposal is important that the stakeholders; residential, establishment, school, and organization, must take it serious to work cooperatively. Since the causes of the insecurity are the deficiency of waste selection, the

lack of waste sorting, the absent of raising awareness by the community, and the uncoordinated latent population (National Research Council of Thailand, 2012). In terms of community solid waste management at the middle and destination or collection management, transportation and disposal which is related to the garbage man, driver, which is managed by local government, including local administrators, officer and community leaders. The causes of the problem sometimes come from unorganized collecting, inappropriate container, and insufficient manpower and vehicle (Pahasing, & Polpuk, 2018). The aforementioned can be caused by inefficient community solid waste management, affecting health problems of manpower and environmental and it also affects to people, and it also affects to people both directly and indirectly.

In terms of waste management from the source, middle, and destination are responsible by the local government. There is many important laws' regulation which is relating to the examination of safety in solid waste management, but it's lacked monitoring mechanisms and lack of ability to enforce effectively, duplication of enforcement that lead to inefficiency enforcement of solid waste management in Thailand and other Asian countries such as Singapore, Malaysia, and Japan, etc., these countries have a geographical similar to Thailand. They strictly use law's regulation and high technology of solid waste management from a primary source, middle and to destination (Cohristopher, 2010; Ministry of the Environment, 2014; Ministry of the Environment, 2010; Latifah, Mohd, Samah & Mohd, 2009; Dennis, 2013). In Europe, the United States and Germany, they create awareness of participation in their population together with utilize of modern technology and strictly legislation the United States, 1976 state that safety management of disposal solid waste in community impacts to workers' health and people at the site (source/disposal). The impact of the solid waste problem does not directly affect the people who dispose of the waste (Incharoen, Rudtanasudjatun & Tunwattanakul, 2020) If the community solid waste is managed from the source, the number of wastes can be reduced in middle and destination stage.

Driving community solid waste management with effective is to manage solid waste disposal in the community effective. This aims to study the problems in the hot spring area of Ban Na kor, Ayer Weng subdistrict, Betong District, Yala Province. However, building an organization network or integration learning development plan of creative activities must be under the framework of the policy laid down by the province and relevant department to recover with potentially. The creating of a network for creative integrated economic development towards the environmental management system is presented in this research in Yala Province, Thailand, to create the concept of solid waste. This is a problem that needs to be solved from the beginning of solid waste, that is, people in the community must be aware of the problems that arise. Helping people to understand and allow them to participate in solving problems. A study of creating participation process of community solid waste management, the case study of Ban Na Kor, Hot Spring, Ayer Weng Sub-district, Betong District, Yala Province, to manage solid waste in the tourist attraction area, Ban Na Kor, Hot Spring, to be a clean and beautiful area with an environmental management system that sustainability in society and nature with the awareness of balancing natural resources and ecosystem.

OBJECTIVES

The aims of this research are

1. To study the current problem to create integration in the hot spring area, Ban Na Kor, Ayer Weng Subdistrict, Betong District, Yala Province.

2. To study building network towards the environmental management system in the hot spring area, Ban Na Kor, Ayer Weng Subdistrict, Betong District, Yala Province.
3. To create a learning plan for creative integrated economic development towards the environmental management system in the hot spring area, Ban Na Kor, Ayer Weng Subdistrict, Betong District, Yala Province.
4. To construct a guideline for developing network building and developing a creative integrated economy towards the environmental management system. In the hot spring area, Ban Na Kor, Ayer Weng Subdistrict, Betong District, Yala Province.

LITERATURE REVIEW

According to the study of the documentary, concepts, theories, and related research, it can be brought knowledge from the document to analyze what relates in the literature of this study, which can be shown as follow:

The hierarchical concept of waste management (Waste Hierarchy), this concept has been used as a framework for waste management all over the world The goal of hierarchical waste management is to identify options of waste management which is likely friendly with the environment (Papargyropoulou, 2014), which show the sequence of the process that most encourage to use as waste management and which that less wanted to use for that waste management process. Prevention is emphasized as the priority and decrease management process, consequently by re-use, recycle, recovery and disposal.

Developing Network for Environment

Praneetham (2013) studied the development of an environmental network model in a community by integrated environmental principles and sufficiency economy found that knowledge, awareness, and attitude to the environment is related to the behavior of environmental conservation. The average score of knowledge, awareness, and attitude to the environment after meeting in practice is higher than developing a building network of environment conservation volunteers. Before the meeting of the network model, people in the community exercise the project of environmental and sufficiency economy. Thiengkamol (2012) developed a model of environmental volunteer network found that the public consciousness creates sustainable environmental development behavior. The volunteer network raises families and people aware of how environment important, having public consciousness to protect the environment with sustainability. The supporting measure of solid waste management raises awareness to people since they are young, participate in solid waste management, reducing solid waste from households, institutes, establishments, and other public services, sorting waste until disposal. Develop body-knowledge, the technology of waste disposal or use substitute material of package and difficult to dispose of. Develop a course of disposal of solid waste in school and outside. Develop and link database systems for efficient management and motivate into solid waste management and by using economic and social mechanisms, creating joint indicators (Joint KPI) to enable the relevant department to perform their duties to achieve mutual results. Solid waste management from the beginning, middle, and destination cannot be carried out in all areas due to many limitations of government therefore solid waste is still being a problem. The government has cooperated with government agencies to solve the solid waste problem by preparing the country's solid waste management master plan (2016-2021 B.E.) to achieve effective and efficient solid waste management goals (Pollution Control Department, 2016). The disposal of solid waste is the last stage of the solid waste cycle. In terms of disposal of solid waste is landfill or incinerator with no longer as solid waste, However, the disposal method must be safe, effective, and does not affect the environment and nearby people. There are currently many

methods of solid waste disposal, but there is 5 main method that popular and effective. Mechanical Biological Waste Treatment: MBT, the main process is degradation organic fraction that is a food of microorganism which is contaminated in solid waste until the nutrient run out that lead to the end of degradation and it doesn't produce methane (CH₄) from the system with less liquid. Plastic and paper will be sorted to recycle, the decomposed waste such as organic fraction will be collected as a soil conditioner, etc. The unusable waste will be in the landfill. This is the end of the MBT process.

Biogas production with anaerobic digestion, the process of biogas production with anaerobic digestion that will produce flammable methane gas (CH₄). It can be used in a different way such as to generate electricity. There are 2 types of anaerobic digestion which are biogas production by sorted organic solid waste and composting in a specific bin (Anaerobic digestion: AD) and biogas production by landfill solid waste which can be called landfill gas. Composting, the process of sorted organic waste to compost and become organic matter in form of nutrients that benefit the plant by using earthworms, worms, and microorganisms in solid waste will degrade. The composting can be processed into 2 forms which are composting with oxygen and composting without oxygen. Incineration, the elimination of solid waste that can be ignited such as organic waste plastic, paper, and wood by using the heat of waste itself to be waste eliminator by burning in an air controlled, and treating the pollution caused by incineration before releasing it into the environment, the ash from incineration must be safely taken to a landfill. The result of from incinerator is the heat that is useable such as hot water, steam, or even electricity generation. A Sanitary landfill is to bring all solid waste bury in the pit that excavates for all garbage and the bottom of the pit is paved with waterproof material such as clay soil or plastic. When the garbage is packed into the pit then they are covered by soil or material which prevents odor, insects, or any animals. The landfill system collects the resulting leachate for treatment before discharging it into public water bodies.

However, there is gas releasing from landfills, this is to prevent the explosion or ignite of methane. In conclusion, solid waste management is the elimination of waste from consumption in residential and community, which contains food, vegetable, paper, and plastic. The local authorities need to manage solving problems about sanitation and value or mutual benefit and use methods to dispose of solid waste that appropriates with each area. The global disposal of solid waste (Green Network, 2021) found that Sweden is the number one of solid waste management from all countries in the world. They are the first country that starting sorts waste and reusing it into new energy since the 1940s. At present, Sweden can develop technology to reuse waste with no pollution, the waste that reuses in this process is up to 96%. They also have a project to convert waste into electricity that can generate more than 810,000 households. Meanwhile, Sweden has deposited a plastic bottle that will be confiscated if customers bring back used plastic bottles to the return point, etc., and also initiated a plastic bag deposit system with a cost as Thai baht at 1.86 baht per bag. This measure is to prevent plastic become useless wasted.

Germany is known as recycle country, in 1996, they are number one for recycling in the world. They launched law regulation to control solid waste all over the country whether production stage, distribution, or consumption, and their people also sorting waste before disposal. They also tax on recycling from all stores that give the plastic bag to customers. They have a plastic bottle deposit system to encourage consumers to return the bottles for further recycling. Therefore, beverage companies in Germany bring reusable plastic bottles to the market because the reused plastic bottles can reduce a lot of carbon dioxide emissions compared to the new plastic bottles. Thus, 64% of the numbers of plastic bottles on the market in Germany are reusable. This measure is raise awareness of protecting the environment all over regions in Germany. In addition, Denmark is the good model of a successful country that can reduce plastic use in 2003, this is due to the tax of plastic bags

from retailers which push all retail store cost the plastic bag from customers, and in the meanwhile customers have been encouraged to bring their bag come to use again. This is the reason why Denmark can reduce plastic bags compare to the past at 66%. Furthermore, a plastic bottle deposit is added to the product cost to raise people to return old bottles and receive money back. This can recycle the bottle in the recycle system at 90%. The United Kingdom has implemented a tax policy on plastic bags and banned one-time plastic bags in 2015. The UK began collecting a fee for plastic bags from customers at major stores for 2.14 baht per bag and plans to implement a plastic bottle deposit system, this is including plastic straws, plastic sticks for stirring coffee, and cotton buds. Therefore, the UK has reduced of using plastic by more than 80%, As a result, this could be reduced 13 million pounds of carbon dioxide emissions, helping the UK to save much more energy in the future. The United States does not have the measure of any tax cost or ban plastic bags, but in some states have regulation of plastic controlled such as San Francisco is the first state that completely banded plastic bags, this policy raises people to use reusable bags by selling a paper bag that can disposal at cashier point, this can reduce the pollution from a plastic bag at 72% in 2009, Washington D.C. has plastic bag tax and the collected tax will be imported to fundamental of environment conservation. This policy can reduce the use of plastic bags by 85%, thereby reducing pollution and most help countries to protect the environment.

From mentioned above can be concluded that Papargyropoulou, Lozano, Steinberger, Wright, & Bin Ujang, 2014 mentioned about the waste hierarchy that is the first important process of integration, moreover, the researcher also study the developing network for the environment (Chuleewan Praneetham, 2013) to build a network for cooperation and be the guideline of the waste management system (Green Network, 2021) This become a solution of waste caused and plastic that unfriendly with the environment. Thailand keeps its eyes on the way of solving the problem of waste caused and also integrates innovation of waste management to develop economic and more learning. This research is qualitative, the researcher defines the conceptual framework based on the concept/theory of Papargyropoulou, Lozano, Steinberger, Wright, & Bin Ujang, (2014) which consists of reuse, recycle, recovery, and disposal and Chuleewan Praneetham (2013) Network development for the environment as the following detail; Independent variable Process, Tools, Location, Target, Dependent Variable.

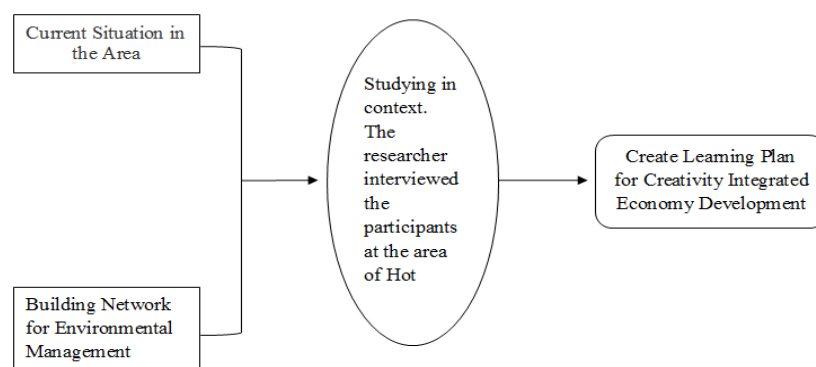


FIGURE 1
CONCEPTUAL FRAMEWORK

RESEARCH METHODOLOGY

This research is qualitative, the location is a hot spring area, Ban Na kor, Ayer Weng sub-district, Betong District, Yala province. The population and target group are 5 specialists of the solid waste management system, 3 government officers, 3 private sector officers, 5 local entrepreneurs, 30 local people, 10 people from the institute, and 56 people as purposive

sampling. The methodology is an in-depth interview, researching paper, analyze and synthesize data as descriptive writing.

RESULTS

In respond to the first objective, to study the current problem to create integration in the hot spring area, Ban Na Kor, Ayer Weng Subdistrict, Betong District, Yala Province, there are three aspects needed to be taken into the consideration. There are 1) knowledge and understanding of waste management system, 2) behavior environment management, 3) attitude about creativity environment management that focuses on the relationship of the network to learn to sustain economic development.

There is a ratio of increasing waste in Hot spring area, Ban Na Kor, Betong District, Yala province at 0.174 per year, average at 0.317 kgs/day/person. However, the population is decreasing but the amount of waste is increasing. This is because the consumption activities from entrepreneurs are increasing, for better economic development the behavior of using any material should come from nature. Solid waste almost comes from food waste that is an organic substance with high humidity. Therefore, it is suitable to be used as compost, that is cycling the waste to be used again, the waste which can be in cycling process (recycle process) consists of paper, plastic, glass, and others (metal, rubber/leather, etc.). In addition, the solid waste that is suitable for landfills, consisting of wood/leaves, etc. There are also relevant people creating activities within the community to reduce air pollution.

According to the second objective, to study building network towards the environmental management system in the hot spring area, Ban Na Kor, Ayer Weng Subdistrict, Betong District, Yala Province, it is found that building the network in terms of decision-making, building the network in terms of operation, building the network in term of beneficial and building network in term of assessment. The people involved in the monitoring and assessment are still inconsistent. Therefore, from the 4 aspects of building a network of environmental management, the relevant person is not consistent in following and making assessments this is due to the availability of site visits and natural resources that are not conducive to operate solid waste or inter-institutional projects. People and departments have to check and create a body of knowledge for more potential.

The 4 aspects of building network process and organization should have solution of solid waste in the area as follows:

1. Promoting building network model, they should be using media to engage in various people in the community, by leader or center to promote activities of sorting solid waste, provide more knowledge and understanding to raise awareness and consciousness of solid waste management according to hot spring area, Ban Na Kor, Ayer Weng sub-district, Betong District, Yala province.
2. Managing network management system, they should be adjusted outline, structure outline, define role duty and responsibilities under the context of policy and distribute into the community. There are clarifications, understanding of problems, and the way of management to environmental management systems. Solid waste management of the hot spring area, Ban Na Kor, Ayer Weng Sub-district, Betong District, Yala Province, is a form of documents and a media to the network can brainstorming.
3. Utilizing from the network, they should make perception, suggestion relevant with waste management network in Hot spring area, Ban Na Kor, Ayer Weng sub-district, Betong District, Yala province for most beneficial to people, for example, reporting incidents when illegal dumping occurs. To cooperate in the exchange of information and to continue in the correct way of management by creating new knowledge from each other and able to fund the resources and create mutual practice.
4. Maintaining network, they should have creative activities to integrate economic development in the community in Hot spring area, Ban Na Kor, Ayer Weng sub-district, Betong District, Yala province, through mutual activities to stimulate and motivate people to participate while expressing opinions or doing recreational activities together, this is creating new leaders, cultivating young generation to protect the environment and can be sustainable in cooperation.

To meet the third objective, to study knowledge plan of creativity integration of economic development to the environmental management system in Hot spring area, Ban Na Kor, Ayer Weng sub-district, Betong District, Yala province, it is found that the area which has a network that creates knowledge of sustainable waste management establishes waste bank to collect recycle material from the community. The result from this research can create knowledge to enhance their income by bringing back useless material to become the valuable product. The process of creating a learning plan is including planning, problem analysis, learning circular economy, waste bank, and learning through information technology. The sustained development and integration circular economy become a part of the operation which creates mutual activities in the community of learning plan as follow:

1. Initiate the concept of utilize natural resources with valuable and enhance the potential of disposal of each type of waste to bring back and reuse by the proper process. This model is the important key to create an infrastructure that supports waste and bring it back to recycle circle and also raise positive behaviors to the employee under the concept " use it well, sort it out, leave it right"
2. Linking process of waste management between the home-school-tourist attraction (temples, mosques) – waste bank to create a model of managing resources and waste from the primary source to increase recycled waste while reducing the amount of landfill. The emphasis on creating and transferring knowledge through community leaders by pushing and providing knowledge creates a knowledge base in schools as teaching tools by practice. Raise awareness of utilization of natural resources by the circular economy principles. It aims to encourage young generations to develop the behavior of "use it well, sort it out, leave it right" and be able to implement knowledge from the school to the family and community.
3. According to the forth objective, to construct a guideline for developing network building and developing a creative integrated economy towards the environmental management system. In the hot spring area, Ban Na Kor, Ayer Weng Subdistrict, Betong District, Yala Province, it is found that development should be initiated from the family, community, and public. In the area, they have to increase the strong sustainable network of the organization under a framework that can be developed and created as a traditional resource. In addition, there are more new ideas of waste management in the area to transform that suit for each type of waste. All of the processes are under the co-operation with all departments.

Table 1
THE CONCLUSION OF WASTE MANAGEMENT SITUATION ANALYSIS IN HOT SPRING AREA, BAN NA KOR, AYER WENG, BETONG DISTRICT, YALA PROVINCE

Problem Issue	Traditional Pattern	Developed Pattern	Responsible Organization
1. Over waste from dustbin	1. Community doesn't have sorting waste process (leave all waste in the same dustbin)	1. Sorting waste since from residential	1. Starting from primary source (The residential have to sort waste)
	2. There is municipal come to collect the waste	2. Excavate wet waste	2. Municipal of the area
	-	3. Sorting recycle waste	-
2. Lack of knowledge or understanding of sorting waste	1. School and government visit site and helping to share knowledge	1. Promote sorting waste knowledge to people in the community and visitors	1. Government
	-	-	2. School
	-	-	3. Establishment
3. Shortage of sorting bin	None	1. The organization distribute separate each type of dustbin	All departments

From the study of building a network for creative economy development on the environmental management system, the researcher has analyzed and synthesis data which can be interpreted into knowledge development as follow:

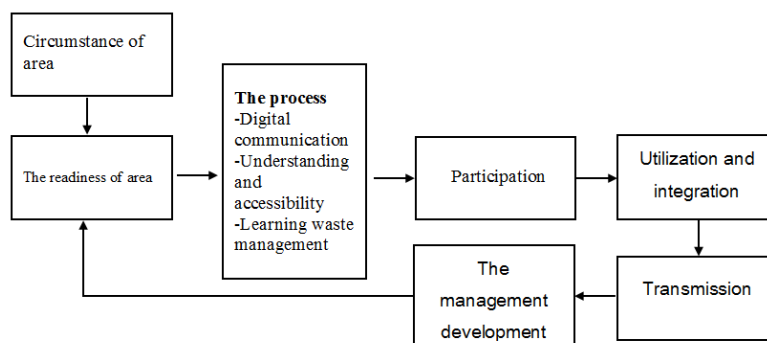


FIGURE 2
NEW BODY KNOWLEDGE

The transmission and utilization, from the study this knowledge can be transferred to the public and community to enhance the creativity of participation activities on waste management that impacts in solving problems in the area. In the network sector, knowledge from the study can be efficiently implemented network building and also implement public policy and management policy to create integration function for efficient development all sectors.

DISCUSSION AND CONCLUSION

From this research, the current situation of the problem and the need for creative integration in the Hot Spring area, Ban Na Kor, Ayer Weng, Betong District, Yala Province found that there are three aspects of problems and need 1) Knowledge and understanding in waste management 2) The behaviors of environment management 3) Attitude towards to creative environment management that aims to create interactions between networks for sustainable learning in economic development and this corresponds to the concept of food waste hierarchy as a guideline for the management of food waste (Papargyropoulou, Lozano, Steinberger, Wright, & Bin Ujang, 2014). This is because the problem conditions and solid waste management require determining knowledge, management, and consumer attitudes to clearly define the problem and solve it. The research of Mattijssen (2015) consists of 1) Green Citizens focus on behaviors that protect and develop nature; 2) Green Citizens will be concerned about environmental issues, questioning the value of using natural resources. 3) Green Citizens are often political initiatives that can express attitudes and policies that contribute to environmental management. 4) Green citizens will be able to unite for expression in political environment management peacefully 5) Green citizens should always create social networks to support and exchange behaviors and attitudes. 6) Green citizenship is everyone's skill. 7) Green citizenship should have a guideline for accumulating funds and finding funds to implement environmental policies in society and expand into other societies, and 8) Green citizens should have a basic idea that natural resources and the environment belong to everyone.

Networking of environmental management system in Hot spring area, Ban Na Kor, Ayer Weng, Betong District, Yala Province found that the network building of cooperation in making –decision, network building in operation, network building for beneficial, network building in assessment correspond with the concept of attitude and behaviors toward to environment of secondary school in Vientiane Lao People's Democratic Republic, Praneetham (2013). These might be the 4 aspects of building a network of the environmental management system that has participants to follow up and evaluate inconsistency because of the readiness and natural resources which inconvenient for waste process or the project between organizations. People and organizations have to examine and create knowledge more

effective as per the research of Thiengkamol (2012) developed a model of the environmental network by environmental education, which is the process of transferring knowledge, raising awareness and attitudes, empowering people to have the skills to make decisions and correct environmental problem which can make people love and cherish in natural resources causing of changing the behavior of environment conservation. The way to make people have attitudes and friendly behavior in the environment, the people need to understand and see the benefits for themselves and the community. Moreover, to encourage people to participate in conserving natural resources by seriously protecting and solving problems, it also uses natural resources wisely and cost-effectively. It corresponds with the research of Srimuang and Yonchayawong (2019) creating a network of participation in solving community waste problems in Nong Khaem area Bangkok. The results showed that 1. The building of a network of participation in solving community waste problems in Nong Khaem, Bangkok was at a moderate level. 2. The relationship of building a network of participation in solving community waste problems in Nong Khaem, Bangkok was found that the overall picture is at a moderate level 3. The way to build a network is Campaigning for people to see the importance of waste management and organizing various activities that provide opportunities and encourage people to participate in waste management and build a waste management network in the community.

For knowledge plan of creativity integration economy to the environmental management system in Hot Spring area, Ban Na Kor, Ayer Weng sub-district, Betong District, Yala province found that it is sustainable in the network of waste management, there's a waste bank to collect recycle materials in the community. This process corresponds to conceptual the development model of environmental education volunteer Thiengkamol (2012). This is because knowledge resource is important to enhance learning to gain more income by turning waste into value item as the research of Robert Krausz (2012) found that changing the way of the landfill to zero waste disposal is impossible. This success comes from the paradigm shift of behavior in waste management that should start from the management level. In descending order of thought and action, the supporting factor is to raise awareness of climate change that caused by using unfriendly energy affects the environment and human society directly. Moreover, the lack of knowledge in the management of the large project, which has to support waste management, wrong functioning plan, technical solution, paradigm adjustment, formulation and implementation of strategies. These are all factors that affect waste management changing from landfill to zero waste management.

Suggestion

This research discovers the important factor process of building the network for creativity integration economy development towards environmental management, Yala province, which is digital communication society, the understanding and accessibility in economics of community and learning of waste management to participate and create innovation which able to apply to all sectors in order integrates with sustainability. Moreover, providing knowledge to the new generation is the way to create new management and gain more income for the household. Mainly focus on natural resources, an area that obtains solid waste. The practitioner groups need to have a high awareness of environmental sustainability. The next research topic should study innovations for the waste management process in the area. This study is due to create modern storage and recycling to protect environment and also about the development models of environmental management to become sustainable management. However, learning factors that affect waste management behavior should also be considered with various way of learning methods such as interviews, observations, behavioral records in order to get more detailed and in-depth information.

REFERENCES

- Brundtland Commission (1987). Our common future: Report of the world commission on environment and development. Retrieved from <http://www.un-documents.net/our-common-future.pdf>.
- Chuleewan, P. (2010). Attitudes and behaviors towards environment of students at grade level. Secondary education in Vientiane, Lao People's Democratic Republic. Master of Education Thesis in Environmental Studies Khon Kaen University.
- Cohen, J.M., & Uphoff, N.T. (1981). Rural development participation: Concept and measures for project design implementation and evaluation. Ithaca, NY: Rural Development Committee Center for International Studies, Cornell University.
- Cohristopher, L. (2010). Solid waste management in Singapore. Singapore: National Environment Agency Singapore.
- Dennis, V.P. (2013). Strategic environmental assessment policy integration model for solid waste management in Malaysia. *Environmental Science & Policy*, 10(33), 233-245.
- Green Network (2021). Around the world, waste management (plastic) solves environmental problems. Together to conserve energy.
- Handbook of operations on solid waste management in the area of the local government organization (2020). Data survey in terms of community solid waste management of local government organizations.
- Incharoen, S., Rudtanasudjatam, K., & Tunwattanakul, V. (2020). Inspection of safe management in waste disposal in community and health impact: A systematic review and meta-analysis. *The Southern College Network Journal of Nursing and Public Health*, 7(1), 99- 111.
- Ke, P. (2018). Critical operational research to create a complete waste management model and mechanism. A circuit based on the participation of schools and communities. Doctor of Philosophy (Research Applied Behavioral Sciences). Bangkok: Graduate School, Srinakharinwirot University.
- Latifah, A.M., Mohd A.A., Samah, Nur, I., & Mohd, Z. (2009). Municipal solid waste management in Malaysia: Practices and challenges. *Waste Management*, 29(11), 2902-2906.
- Mattijssen J.M.T. (2015). Green citizen governance: citizens governing nature and landscape in the Netherlands. Conference: Seminar 'Citizens for Nature?'
- National Research Council of Thailand (2012). Research strategy on waste management issues in community. Bangkok: National Research Council of Thailand.
- Neil, J.S. (2006). Exploring research (6th ed). New jersey; Pearson Prentice Hall.
- Pahasing, S., & Polpuk, S. (2018). Administration of solid waste collection of the Nongnae subdistrict administrative organization in Phanom Sarakram District of Chachoengsao Province. *EAU Heritage Journal Social Science and Humanity*, 4(1), 132-142.
- Papargyropoulou, E., Lozano, R., Steinberger, J.K., Wright, N., & Bin Ujang, Z. (2014). The food waste hierarchy as a framework for the management of food surplus and food waste. *Journal of Cleaner Production*, 76, 106-115.
- Pimthida, S. (2001) Participation of the district women's development committee in the treatment of environment: A case study of Rayong province. Special Problems of Public Administration, Master of Science in General Administration, Graduate School Burapha University.
- Pollution Control Department (2016). The National Solid Waste Management Master Plan (2016 - 2021). Bangkok: Active Print.
- Pollution Control Department (2017). Situation report of solid waste of Thailand in 2016. Bangkok: Pollution Control Department.
- Robert, K. (2012). All for naught? A critical study of zero waste to landfill initiatives. Degree of Doctor of Philosophy, Lincoln University.
- Suwin, S. & Phukit, Y. (2019). Building a network of participation in solving community waste problems in Nong Khaem District, Bangkok. *Journal of the Graduate School of Pitchayatas*, 15(1).
- Thares, S.S. (2010). Community solid waste management engineering. Chulalongkorn University Press.
- Thiengkamol, N. (2012). Development of a prototype of environmental education volunteer. *Journal of the Social Sciences*, 7(1), 77-81.
- UNESCO. (1978). Indicator of environment quality and quality of life. Research and Social Science.
- United States (1976). Resource conservation and recovery act. Washington, DC: U.S.
- Wanpen, W. (1991). Participation of farmers in the development of small water bodies. Thesis Master of Arts (Social development management). Bangkok: Graduate School Institute Graduate School of Development Administration Environmental Protection Agency (EPA).
- Zurbrugg, C. (2003). Solid waste management in developing countries. Retrieved from http://www.eawag.ch/forschung/sandec/publikationen/swm/dl/basics_of_SWM.pdf.