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Situation of Municipal Waste Management in Pattani watershed, South Thailand

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Abstract. This research were 1) studying the situation of municipal waste management in Pattani watershed)MWMPW) 2) determining the relationship between personal factors of the garbage collectors with situation of MWMPW 3(studying the opinion of MWMPW the population were 430 garbage collectors and focus group by using the questionnaire. The study yields the following results: 1(The condition of waste management is well done in Yala municipality. 2(Opinions on solid waste collection and motivation, most garbage collectors feel the municipal policy should increase more efficiency welfare to protect them from sickness and agree that the management of municipal solid waste carrying was appropriate such as quantity, time, team, systems, atc. 3(Relationship test between independent variables and relationships on MWMPW reports bulk driver position is related to the extent of the solid waste collection and income level not exceeding 5,000 was related to the extent of the solid waste disposal at the 0.01 level of statistical significance.

Introduction

At present, the problem of solid waste has increased, from the pollution control department's statistics reported that in 2009, the amount of solid waste in Thailand had increased by founding solid waste from around 15.11 million tons or 41,410 tons per day)excluding the amount of solid waste before dumping the tank(. Solid waste in Bangkok had 8,834 tons per day)21 percent(in the municipality and Pattaya city with 16,368 tons per day)40 percent(and 16,208 tons per day in the Sub-district Administration Organization area)39 percent(. It was compared to the previous year, it was found that the average amount of solid waste per person per day increased by 0.8 percent. In municipalities, are the amount of solid waste increased by 9.7 percent while garbage. In the sub-district administrative organization area decreased by 6.68 percent as a result of raised the status of the 378 sub-district administrative organizations into municipalities for the average production rate of solid waste was 0.65 kilograms per person per day]1[. By these solid waste local administrative organizations, including provincial administrative organizations, municipalities and sub-district administrative organizations, total about 8,000 places, can be collected and transported out of the community area to get rid of, representing 80 percent of the total waste generated. While preparing a solid waste disposal system that was designed according to academic principles and the construction of a system with appropriate technology, including 113 countries, representing the amount of solid waste that can eliminate 38 percent of the total waste generated. Which showed the current problem of solid waste management Both cannot be stored and disposed of correctly. In the area of solid waste

disposal technology that has been constructed, such as sanitary landfill systems. Fertilizer composting system ,biogas production system Including the burning system was destroyed the solid waste in the furnace but still have problems and obstacles in management and in choosing the appropriate technology of the local area that does not had a solid waste disposal system]2[. The garbage problem it was one of the urgent problems of every agencies, regardless of government, private and public, it had a systematic approach to managing solid waste. The efficiency and maximum effectiveness because if the government, the private sector and the public do not paid attention unimportance of solving such problems solid waste problems were increasing and increasing every year. The Pattani watershed in Yala province, there was an estimate of the amount of solid waste, of the]3[that Yala province estimated 187 tons of solid waste per day or 3.71 percent of the estimated amount of waste in the south, Pattani province, 313 tons per day or 6.22 percent of the estimated amount of waste. In the municipal solid waste management, it will be effective and maximize benefits, achieve the goals requires many elements and one of the major backlash of solid waste management was "Garbage collector", which according to the nature of work, and it was generally responsible for providing garbage collection services in homes, markets, shops, establishments. The general waste at people was dumped at the point of supporting garbage according to various sources]4[, was considered an important part of the operation. There were touches and was part of the direct management system. Therefore, solid waste management will be successful and successful as well or not. Depends on the backlash called "This garbage collector" with garbage collectors were often overlooked by turning to focus on the object or technology rather than giving priority to individuals, workers which was able to give feedback to reflect the results of the most thorough waste management system. Therefore for, the importance of studying the state of solid waste management in the municipalities in the three southern border provinces from the opinions of garbage collectors so the information obtained from the study will be useful to the municipal waste management planning guidelines and can be used as a guideline for solid waste management of other local government organizations.

Methods

The population of the study was 430 employees of municipal solid waste collection in Pattani watershed. Yala municipality, 316 people and 114 Pattani municipality, total 430 people in the study. Tool characteristics this study was a quantitative study by this tool for data collection .The researcher will use a questionnaire created from the study of literature review and related research .It was a liker gauge, collecting data from the sample group, to analyze to test the next hypothesis. The questionnaire contained 6 parts. The researcher created the tool for this study, by proceeding with the following steps. 1. Study details about documents, and research related to the process of waste management from textbooks, documents, journals, publications and research associated study how to create a questionnaire under the scope of research. 2. This study how to created questionnaires from documents and research and then consulted the advisor for advice and guidelines for creating the questionnaire. 3. Determine the scope of the question according to the variables studied and create a questionnaire and bring the completed questionnaire offer advisors to check and suggest improvements. 4. Apply the updated questionnaire to 5 experts for consideration of content validity, accuracy, appropriateness, coverage and advice on what should be corrected, more complete. 5. Test query by taking it to test for confidence)reliability(with employees sweeping and collecting garbage, Hat Yai municipality, number 40 sets to analyze and find confidence by using the alpha coefficient formula of Cronbach to gain the confidence value of 0.7896. Bring the research tools that have passed the quality inspection and then proceed to check and corrected the deficiency fever again. In order to, obtain more completed research tools before actually being used with research samples. Data analysis methods, the researcher analyzed quantitative data via computer. With statistical software and presenting data using tables and descriptive statistics used in this research data analysis, the researcher used statistics to analyze the data as follows. Descriptive statistics: Percentage, mean)Mean(test the relationship using statistical analysis of correlation.

Results and Discussion

The opinions on the collection of solid waste and motivation in the operation Most garbage collectors was of the opinion that municipalities should increase welfare in the care of health caused by work hazards such as annual health checks ,which corresponds to]5[and the current state and needs of road cleaning workers in Lamphun municipality. The study indicated that workers had a need for welfare, safety in the workplace. Because of having to work hard and be in an environment that was toxic to the body and mind. The needs and satisfaction with the welfare in the workplace was very important. Because it was helped to motivate work and satisfaction will create cooperation resulting in effective and efficient work. The opinions on the collection of solid waste found that the majority of the population commented that the working time of the garbage truck appropriate. It was positive attitude towards performance and saw that the collection of solid waste in the municipality today was very effective. In accordance with]6[, who studied the bio-social factors motivation to work and attitude towards job cleaning services of workers sweeping the streets and garbage collector workers, Bangkok office, case study: Sathon District Office Sai Mai District Office and Nong Khaem District Office. Found that there was a positive relationship with attitude towards job cleaning service causing good behavior or behavior as well. It was a factor that helps stimulate appropriate behavior in the work Make the job successful according to the goals laid down. The opinions on the separation of solid waste reuse and garbage disposal solid waste found that the majority of the population. There was an understanding of how to recycle each type of solid waste, recycle for reuse or sell to increase revenue. At present, there was no separation of waste according to academic principles. And agreed that the municipality should publicize the waste separation before being discarded including public relations to use products that can be used for packaging can be reused Including agreeing that waste disposal by landfill method is appropriate. In accordance with]7[, who was study the development of appropriate solid waste management model for Hat Yai municipality. It was found that the current waste management of Hat Yai municipality does not contain solid waste. Hat Yai municipality used the same waste management methods that municipalities in the Pattani watershed. It was to set up a tank to support solid waste from public houses or people put garbage into bags infront of the house to allow the municipality to carry out the hair removal by using landfill methods according to sanitary principles. Which does not had separation of solid waste from the household including not separating solid waste before disposal making garbage. That can be separated whether organic waste or valuable waste must be buried at the same time with waste. That was not worth not generating income for both the garbage collectors themselves or even the municipality. There was the day that will increase the amount of waste that was likely to increase. And also found problems that Pattani watershed encountered as well. Subject to the land used for landfill now almost full of space should consider the disposal of solid waste as an integrated system disposal with the separation of solid waste. It was the integrated system in the same area, such as fermentation, fertilizer making, landfill and stove used incinerate with the table showing statistics values as follows.

Table 1. Correlation Values between Personal Factors and Opinions on Waste Collection

Personal Factors	Comments on Solid Waste Management
Sex	-.104
Age	-.040
single	-.083
Marital status / Couple	.083
Widowed / Divorced / Separated Status	-.027
Elementary education	.109

Lower secondary education	-.054
Upper secondary education	-.026
Vocational education	-.010
Education at other levels	-.066
Position of garbage driver	-.250**
Car staff positions	.018
Staff sweeping and collecting waste	.155
Duration of work	.031
Income not over 5,000 baht	.060
Income between 5,001 - 8,000 baht.	-.026
Income between 8,001 - 10,000 baht.	.005
Income 10,001 baht or more	-.016
r = 0.063	

** There was a statistically significant relationship at the level of 0.01

Table 2 Correlation Values Between Personal Factors and Opinions on Solid Waste Disposal

Personal Factors	Comments on Solid Waste Management
sex	.090
Age	.033
single	-.020
Marital status / Couple	.046
Widowed / Divorced / Separated Status	-.041
Elementary education	.106
Lower secondary education	-.108
Upper secondary education	-.001
Vocational education	-.046
Education at other levels	.033
Position of garbage driver	-.048
Car staff positions	.069
Staff sweeping and collecting waste	-.029

Duration of work	.105
Income not over 5,000 baht	-.182**
Income between 5,001 - 8,000 baht.	.120
Income between 8,001 - 10,000 baht.	.033
Income 10,001 baht or more	-.057
r = 0.033	

** There was a statistically significant relationship at the level of 0.01

Conclusion

The researcher were studied the situation of municipal waste management in Pattani watershed)MWMPW(, to determine the relationship between personal factors of the garbage collectors with situation of MWMPW , studying the opinion of MWMPW. The study yields the following results:, opinions on solid waste collection and motivation, most garbage collectors feel the municipal policy should increase more efficiency welfare to protect them from sickness and agree that the management of municipal solid waste carrying was appropriate such as quantity, time, team, systems, relationship test between independent variables, relationships on MWMPW reports bulk driver position is related to the extent of the solid waste collection and income level not exceeding 5,000 was related to the extent of the solid waste disposal at the 0.01 level of statistical significance

References

[1] Pollution Control, Department.)2004(. Comprehensive community solid waste management. Bangkok: Teachers Council Ladprao.

[2] Natural Resources and Environmental Policy and Planning, Office.)2010(. Academic documentsSolid waste management technology. Khon Kaen: Finance Nana Wittaya

[3] Pollution Control Department Ministry of Natural Resources and Environment in 2008 Yala Municipality. General conditions and basic information of Yala Municipality.]Online[. Accessible from:http://www.yalacity.go.th/)August 2010(

[4] Chaiwat Sriprasert.)2007(. Factors affecting the efficiency of work performance of employees Garbage, local administrative organization, Muang District, Samut Prakan Province. Study report Independent Master of Public Administration Department of Local Administration, College of Education Local government Khonkaen University

[5] Niruth Sri Buri.)1998(. Current conditions and needs of road cleaning workers in the area Lamphun Municipality. Independent research Master of Arts Human and Environmental Management College Chiang Mai University

[6] Punnapa Busayachokthana Development of Phluek.)1996(. Environmental health)Environmental Health(. Bangkok:NSL Printing Ltd., Part.

[7] Direk Ritthawakarn.)2010(. Development of appropriate solid waste management model for Hat Yai Municipality. Master of Public Philosophy, Special Department Faculty of Public Administration National Institute of Development Administration