

**Clean Environment in Nonthaburi:
Pilot Project for Maximizing Recycling and Minimizing Waste
Phibulsongkram and Suan Klang Muang 3 Villages**

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Acknowledgement

The Economic and Social Commission for Asia and Pacific, United Nation, held at Nonthaburi Municipality, Thailand on January – December 2002, adopted the “Clean Environment in Nonthaburi”: the pilot project for Maximizes Recycling and Minimizes waste at the pilot area. The implementation of the Clean Environment in Nonthaburi is the major challenge for solid waste management to achieve Maximizes Recycling and Minimizes Waste is citizen awareness empowerment and public participation.

On the positive side, in 1977, Nonthaburi started the campaign of reducing waste by public relation and public awareness and requested the assistance in the developing solid waste management program in Nonthaburi. The Pilot Project for Maximizes Recycling and Minimizes Waste at Phibulsongkram and Suan Klang Muang 3 villages is one of the case study in Nonthaburi.

This project is supported by the UNESCAP (United Nations Economic and Social Commission for Asia and the Pacific) and IGES (Institute for Global Environmental Strategies)

Lastly, I would like to thanks the UNESCAP, IGES and all staffs of Nonthaburi Municipality to implement this pilot project and the most important participants, the villagers of Phibulsongkram and Suan Klang Muang 3 village to improve quality of life and environment in Nonthaburi to be sustainable healthy city.



Somnuk Thanadechakul
Mayor of Nonthaburi Municipality

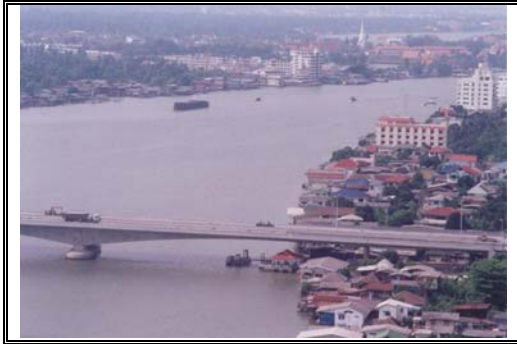


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Background of Nonthaburi Municipality

Nonthaburi Municipality was established by the Royal Degree on February 14, 1936. The area at the beginning was 2.5 sq.kms. and expanded to be 38.9 sq.kms. in 1988. Nonthaburi Municipality was located on the east side of Chao Phya River and the total populations is 273,172, including 91,702 households. Most of the land use for residential area, agricultural, commercial and business. It is well known of many tropical fruits.

Nonthaburi municipality is the same as cities all around the world which are grappling with the waste problem. We are in crisis of our own making as waste piles up, no wastewater treatment spreads and contaminates, creating immediate and long term liabilities for future generations.



Nowadays, Nonthaburi produces solid waste 300 tons/day, solid waste is being generated in an increasing tempo and is becoming more and more difficult to dispose regularly. The capacities of sanitary landfills are almost exhausted and new dump site are difficult to establish because of comprehensive legislation is agreed overtime for the sake of a sustainable environment and because of growing public resistance as a consequence of awareness about related health threats chemical pollution of ground water, and the unwise and wasteful use of irrecoverable resource.

Open dumping accompanied by burning is the most prevalent form of waste disposal in Nonthaburi. The potential to reuse waste materials has yet to be explored, only 3-5% of waste was separated for recycling. To solved these problems, Nonthaburi distributed many activities to support clean environment but the first priority which impacts the environment causes by solid waste.

The pilot area

Phibulsongkram village : There are 539 households, 930 populations, most of them are middle class and Phibulsongkram village is a security village and good environment. The villagers produce solid waste about 1,050 kgs/day, which was collected by municipality.

Suan Klang Muang 3 village : There are 120 households and 350 populations. The villagers produce solid waste about 200 kgs/day. This village has also a nice location on clean environment and people participation for project implementation.

The project of Maximizes Recycling and Minimizes Waste, which covered 659 households and 1,280 populations at Phibulsongkram and Suan Klang Muang 3 village by Public Participation will be the pilot project in Nonthaburi Municipality area.

Objective

1. To maximized recycling 20% and minimizes wastes 30% in pilot areas (Phibulsongkram and Suang Klang Muang 3 village) Nonthaburi.
2. To study appropriate model handling and implement in community area.
3. Promotion public participation and local coordination.
4. Advocate capacity building.
5. Developed solid waste management in Nonthaburi Municipality.

Duration time

One year (December 2001 - November 2002)

Project's Activities

1. Community: Providing villagers committee meeting and wasters minimization meeting workshop for villagers, to make participatory and coordination.
2. Collection : Surveying area, collection general information and waste data.

3. Modeling : The villagers reduce wastes, separate materials, the city provides the collection of garbage and recycling materials.
4. Public relation: Produce mass media/brochures of how to maximizing recycling and minimize wastes, providing public relation board of community.
5. Waste collection : Providing garbage truck twice a week (Tuesday and Thursday) and recycling truck once a week (Wednesday) and distribute recycling bin for every households.
6. Waste weighting : Garbage and recycling materials must be weighted everyday for data collection
7. Monitoring : Monitoring the garbage and recycling materials collection process, public coordination of the villagers every month.
8. Reporting : The results of the implementation must be reported for monitoring and adjustment the project.

Target

Quantitative target

- The amount of waste is reduced 30%
- More than 20% of waste is recycled.

Qualitative target

- Quality of life promotion.
- Sustainable Healthy cities development.
- Solving the environmental problem.



Budgeting

❖Supported by the ESCAP

	\$ 5,000	(225,000 Bahts)
-Providing Recycled bins/bags for 659 households	\$ 2,134	(96,000 Bahts)
-Providing 2 Public relation boards	\$ 444	(20,000 Bahts)
-Providing mass media/Brochures for public relation	\$ 1,778	(80,000 Bahts)
-Community/Committees meeting	\$ 444	(20,000 Bahts)
-Others and Miscellaneous	\$ 200	(9,000 Bahts)

❖Supported by Nonthaburi Municipality

	\$49,700	(2,240,000 Bahts)
-Administrative budget staffs, oil, operation & maintenance	\$ 9,778	(440,000 Bahts)
-1 Recycled truck	\$40,000	(1,800,000 Bahts)



Implementation results

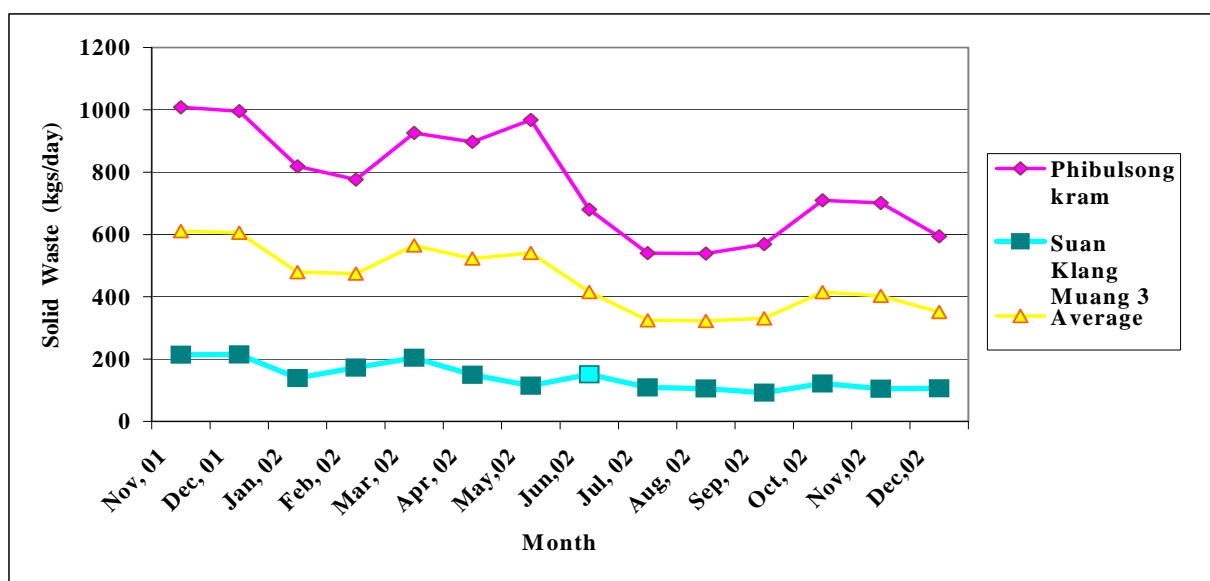
◎ The weight of solid waste and recycling rate at Phibulsongkram Village

Month	Solid waste Kgs./day	Recycling material Kgs./day	Recycling rate (%)	Note
December, 01	996	50.1	5.2	Before project
January,02	819	74	9.04	
Febuary,02	776	78.4	10.1	First period
March,02	926	76.2	8.23	
April,02	897	105	11.74	
May,02	968	147	15.18	
June,02	680	138	20.34	
July, 02	539.9	182	25.2	Second Period
August, 02	538.8	180.3	25.1	
September, 02	568.9	177.8	23.8	
October, 02	709.3	218.4	23.6	
November, 02	701.3	222.1	24.1	
December,02	594.3	190.2	24.3	

◎ The weight of solid waste and recycling rate at Suan Klang Muang 3 Village

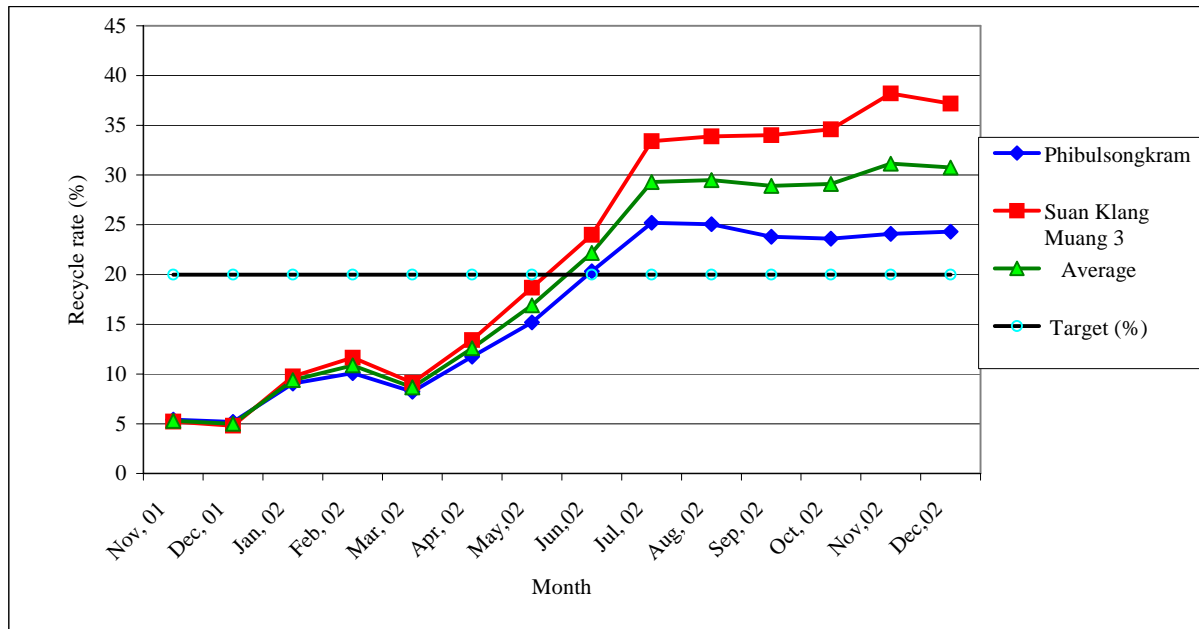
Month	Solid waste Kgs./day	Recycling material Kgs./day	Recycling rate (%)	Note
December, 01	215	10.1	4.8	Before project
January,02	139	16.3	9.75	
Febuary,02	173	20.2	11.64	First period
March,02	204	23.5	9.11	
April,02	150	20.2	13.42	
May,02	115	21.7	18.67	
June,02	151	36.2	24	
July, 02	109	55.2	33.4	Second Period
August, 02	106	54.4	33.9	
September, 02	92.3	49.1	34.01	
October, 02	122	64.7	34.6	
November, 02	105.6	65.3	38.2	
December,02	106.3	63.1	37.2	

❖ Decreasing Quantity of Solid Waste at Phibulsongkram and Suan Klang Muang 3 village



On January, 2002 the quantity of solid waste at Phibulsongkram village is 819 kgs./day and Suan Klang Muang 3 village is 139 kgs./day. The project had been start and the villagers separated recycling material. The quantity of solid waste at Phibulsongkram and Suan Klang Muang 3 village was reduce. On December, 2002 the quantity of solid waste at Phibulsongkram village is 594.3 kgs./day and Suan Klang Muang 3 village is 106.3 kgs./day.

❖ **Increasing of recycling rate at Phibulsongkram and Suan Klang Muang 3 village**



The percentage of recycling rate at Phibulsongkram and Suan Klang Muang 3 village is increased continuously. On January, 2002 the weight of recycle material in Phibulsongkram village is 74.1 kgs./day (9.04 %) and increase to 190.2 kgs./day (24.3 %) in December, 2002 and Suan Klang Muang 3 village is 11.2 kgs./day (5.21 %) and increase to 63.1 kgs./day (37.2%) in December 2002. In conclusion, solid wastes of the two villages were separated 30.75 % in average. For the second period of the two areas, the recycle rate are higher than the target.

Conclusion

The results of the second evaluation after 12 months, we can separate recycling material from garbage 20 % in 6 months and 37% in second haft of the project. The result is very satisfy.

- This project was not emphasis on the investment. The technique used in the process of reducing waste was very simple strategies, public relation by providing mass media, brochures, meeting with the community committee and following the activities.
- Nonthaburi municipality supported this project by providing 2 recycle trucks instead of common collection truck which encouraged the villagers are satisfy .
- The village which the security check at the entr ee will protect scavenger to cause nuisances of pick up recycle waste from their households.
- This pilot project will be benefit for Nonthaburi City. It was good example to expand to another village and adjust the strategy for full area of the city.
- Nonthaburi municipality must provide the truck to collect recycling material and garbage at the exactly date and subsidies the recycle bag every household until they used to habitat.
- The staffs who work with this project must be keen in knowledge and experience in recycle waste which stimulate and communicate with villager to participate in the project. Only law enforcement is not acceptable from villagers but the public relations and good communication are very important for public participation.



Staff of the pilot project

Ms. Pornsri Kichtham	Mr. Permpong Poomwiset
Ms. Prapa Sanwises	Mr. Somsuk Sripeng
Mr. Thanet Kengkietchai	Mr. Prateep Khanchanasema
Mr. Pasit Chanaboon	Mr. Durmrong Sooksomjit
Mr. Srirasit Pounsamlee	Ms. Phansuda Kaikaew