Implementing Waste Management Projects in an Effective Way in Cambodia, Lao PDR, Vietnam and Thailand

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Introduction

Waste management becomes a critical problem worldwide nowadays. The Indo-Chinese countries, namely, Cambodia, Lao PDR., Vietnam and their neighbor: Thailand, are not exempted from this trend. This paper will discuss mainly on the process of community development necessary for introducing or implementing the integrated municipal solid waste management projects in the countries mentioned above.

Technology is one important means for removing people's constraints and bottlenecks, including promoting rapid urbanization growth. Consequently, it also brings about unwanted outcome, the wastes, for the communities. Further, it has been realized that technology alone cannot solve many problems created by mankind. Waste is one of them. Many waste disposal methods are introduced such as central composting plant, recovery plant, sanitary landfill, incinerator and etc.. The introduction of new and advanced trucks, equipment and other facilities for increasing collection efficiency are another samples of problem-solving technology invented. However, success is yet far to be reached.

Community participation is highly needed for tackling most problems arise. We can be ensured of successes when the community (or people) takes part in problem identification, planning, resource mobilizing, implementing and finally evaluating processes. To do this, the community must be empowered through group organizing and self-learning on how to conduct necessary actions against their own problems.

Waste Situations in the Region

To begin, we shall look at the actual waste situations in these 4 countries; the amount of waste generated, collection efficiency, disposal methods employed and the recycled rate being achieved.

From the table shown underneath, the volume of waste generated in cities of Lao PDR. are still little compared to the other cities. However, waste problems are more recognized as there is no proper method to reduce, collect and dispose those wastes generated (Vientiane Times, May 3-9, 1996). Meanwhile the volume of waste generated in Lao PDR. and other neighboring countries are increasing rapidly along with the growth of population, economy and tourism business. In 1998, every day 37,000 tons of waste was generated in Thailand (PCD, 1999). More of new types of waste have been generated from new production, marketing and consuming processes, i.e. packaging wastes.

Furthermore, collection efficiency in the selected cities is also not satisfactory. The left over wastes on the streets, at the collection points and any other open spaces cause dangers to the people and the environment. In Chiang Mai, the waste crisis occurred few years' back had caused a big loss to the tourism and related business. It also created conflicts between residents, NGO, civic groups and the municipality, which resulted in a change of new officers during the following election (Khokphol, 1998).

	Volume of waste generated Daily (tons)	Collection efficiency (%)
Thakhek	n.a.	40*
Pakse	32	21*
Luang Prabang	35	28*
Savannakhet	n.a.	22*
Phnom Penh	552	74**
Hanoi	1,237	63
Ho Chi Minh	2,446	n.a.
Bangkok	8,591	80
Chiang Mai	300	63

Source:
- *data on 4 towns in Lao PDR. are extracted from the Project Proposal on "Solid Waste Management in Urban Centers of Lao PDR.", DCTPC, 1996*
- *data on Phnom Penh is extracted from the Master thesis of Sarin Chea, AIT, 1998*
- *data on Hanoi is extracted form the research work of DiGregorio, and et. al., 1996*
- *data on Ho Chi Minh City is extracted from an article of Melhra and et.al. on "Women in Waste Collection and Recycling in Ho Chi Minh City", Population and Environment 18 (2), 1996*
- *data on Bangkok is derived from "BMA - Cleansing Department", BMA, 1998*
- *data on Chiang Mai is extracted from the Ph.D. Dissertation of Orathai Kokphol, University of Toronto, 1998*

Note:
* Not the percentage of efficiency, but percentage of residents in the coverage areas who get access to the collection services
** Area coverage is only 19 % of the total area of Phnom Penh

It seems that the poorer (in economic term) the city or country is, the less collection efficiency the city can pursue. This is due to the fact that the costs for collection, transfer and street cleaning is very expensive and normally comprises the biggest portion of solid waste management expenditures (UNEP/IETC, 1996). Every year, each of these cities has to spend a lot of money for managing this waste problem. In 1997 fiscal year the Bangkok Metropolitan Administration (BMA) spent 3,322 million baht (equivalent to US$ 89.8 million) for waste management in Bangkok (BMA, 1998).

Sanitary landfill method has been employed in Bangkok and in other 12 municipalities throughout Thailand, while incineration facility (for municipal solid waste) has been applied in 3 cities in the southern part of Thailand : Phuket, Samui, and Pi Pi island and they have not functioned properly (PCD, 1999). There is no report that these 2 methods are employed elsewhere in the 3 Indo-Chinese countries.

Furthermore, Bangkok and Hanoi have 2 and 1 central composting plants respectively. But the plants in Bangkok require heavy subsidy for their operation and most of the time the operation has been ceased. Phnom Penh used to have one plant as well but the operation was ceased years ago and never operates again (Chea, 1998).

Uncontrolled landfill, open dump and open burning are commonly practiced in this part of the world.

As the waste disposal at dumpsite is not so effectively managed, it can be assumed that the emissions, odors, ground water contamination, fire and explosive hazards, and vector diseases would ruin the physical and mental health of people (Cointreau-Levine, 1998).

This mal-practice creates NIMBY (not in my backyard) syndrome that spreads widely and makes it be more difficult to find sites for landfills and other open dumps. The Chiang Mai case tells that when villagers in communities next to the dump site refused to allow the municipality to dump waste, the residents in city suffered from accumulated garbage that spread all over the city (Khokphol, 1998). The "Garbage War" in Taiwan took place in 1984 when villagers organized themselves to dump garbage on streets, blocking waste operation and the new construction of landfills near their villages to protect their own rights after their petitions were not responded (Shen and Yu, 1997). No matter how strong measure or laws that against radical people actions organized by the people any government employs, there will always be such a case when the land price is high, when people have no more places to live and when the management of the landfill is not proper.

The volume of waste reused and recycled varies from place to place. In Thailand, the study done by PCD in 1966 found that it reached only 9.2 % (6.7 % by itinerant buyers, 1.7 % by collection crews and 0.8 % by waste pickers), while the potentiality is 43 %. The recycling business in Laos is still to be developed further as the amount is small, but it has managed to make use of the recyclables at 10 % of the total waste, while the potential is 20 % (DCTPC, 1996). In Cambodia, the recycling amount is also 10 % (Chea, 1998), while the recycled rate in Vietnam especially Hanoi is much higher, as it reaches 20-25 % (DiGregorio, 1996). This is not included the amount of recyclables imported from Lao PDR. and Cambodia.

Although waste problem is there and is increasing over time but the people in these countries are not so alert of this degradation of environment. Worse than that, most of the people not only cooperate in the waste reduction, waste separation programs introduced by the local governments and some non-governmental organizations (NGO), they throw garbage and litters at any spaces instead. The recent economic crises have turned these countries down and will not be recovered very soon. Resources for waste management decline tremendously. But the policy makers and managers still stick their minds to the traditional expensive technical approach to solve waste problem.

While these governments pay attention to the formal sector, informal sectors in these areas are quite big in size and active in their operations. It was reported that there were more than 10,000 scavengers in Ho Chi Minh City (Le, 1995), about 7,000 persons involved in waste industry in Hanoi (DiGregorio, 1996) and around 62,000 scavengers in Bangkok (Habitat, 1994). These people contribute a lot of benefits to the environment and economy of the country.

In summary, the waste problem in this region is rising up. Each of the national and local governments must try to find the appropriate way to solve their own problems. Once the problem is handled at the early stage, there is a chance that it will not be too complicate to be solved, in a less expensive way, and requires shorter time frame. It must be noted that there is no single model or solution for this problem since the proper solution is depending on the socioeconomic, politic, cultural and level of education and technology available in each particular area (Wilson, 1996).

Why Efforts in Waste Management Fail

Many literatures discuss about the reasons why the solid waste management in most countries fail, especially those in the developing ones. They can be categorized as followings;

The Formal Sector, particularly the national, local government normally employs clumsy bureaucratic system. Since this sector feels that the sole responsibility is in its hand, it always manages the system by itself. The other stakeholders, like the residents, the commercials, the offices, etc. are mostly not asked to participate in making decisions and executing the waste related activities. These state agencies don't feel accountable to the people at all (Wisuth, 1999). In most cases, the financial, personnel and other kinds of management are not transparent. Very few or none of the residents learn how money is spent and what results are achieved.

Other common problematic area is the improper quantity and quality of staff dealing with waste affairs. Sometimes, the authority finds it very difficult to hire people to work in this waste sector as the payment and social esteem is low (DCTPC, 1996).

Due to the fact that different agencies are specialized in their own fields and they mainly tap budget from the same cake, coordination is often found lacking in all of these 4 countries (see UNEP/IETC, 1996; Mockler, 1998; Le, 1995; PCD; 1999; DCTPC, 1996). The policy to go for costly and advanced technology in solid waste management (incineration, central composting, sanitary landfill, recovery plant, use of modernized compact truck, and so on) is not only coincide with their professional believes and values, but allowing some of them to get side line commissions as well. As a result, each of the government needs a lot of money to operate and maintain those sophisticated trucks, equipment and facilities. When budget is short or lacking, these facilities are not established while the other simpler methods are not seriously taken into account. Or in other case, those facilities and equipment which have been procured earlier can not be used or maintained properly and slowly turn themselves into scraps.

These 4 national governments are similar to other governments (with the exception of the Indonesian one) in the sense that they don't acknowledge the existence of and the importance roles the informal sector plays. In addition, none of these governments have employed the devolution approach, to transfer the responsibility and authority to the community to run their own waste affairs. On the other hand, the local governments expect their residents to cooperate in whatever programs initiated by them, such as street cleaning, source separation, recycling and others. Pitifully that most communities do not cooperate as those projects are not directly addressed their problems or don't fit into their contextual conditions. The potential and resources of people is not fully utilized.

In most developing countries where the governments are not well equipped with technical, managerial, autonomous capacities and strong political wills, they can hardly issue proper policies, measures, bills and/or regulations suited for waste problem's prevention and curation. They either have irrealistic or impractical policy/measures/laws or none (PCD, 1993; DCTPC, 1996 and Chea, 1998). Consequently, the people, commercials and industries do not follow the rules and regulations since the state itself cannot enforce them.

Due to budget constraints and lack of sufficient service fee's collection, the agency can not provide necessary facilities (i.e. bins), and services sufficiently.

The People themselves are also inert and lack awareness on waste problems. For many people, to throw waste on any spaces is a normal behavior. Most of them have the attitude to pose the responsibility to the agencies and the in-charge persons. It is commonly heard that this attitude is caused by lack of education and information. We always simply jump to solutions that the government should develop educational and campaign programs for different groups of people, school children, housewives, old aged group and general public. But past experiences show that this activity (to provide simple information, warning and reminding people not to do this and that) is not effective. What has been done is not wrong but it is not enough nor appropriate.

To tackle this attitude aspect, ones should start from analyzing more considerately why people in these 4 countries throw garbage and litters on streets and other open spaces. Why don't they cooperate in different kinds of waste problem solving activities? A Dutch sociologist and an institution building expert[1] had commented that the reasons behind such practice are: (a) the attitude of caste system, (b) ignorance, (c) habit, and (d) consequences from some beliefs (conversation with the Pieper's family, August 17, 1999).

Most people would argue that caste system has never been existed in this part of the world. It is only partially true because the *semi-caste system* has been practiced for centuries. We can observe easily that people here do have discrimination among sex, among social and economic class, and among professions. The society accepts and practices that "servants" or "maids" must serve their bosses in many ways, more than the western maids do. This servant is

considered as "lower class" and is badly treated by the boss and in impolite ways. This kind of attitude is also partially promoted through media. Many magazines, newspapers, television programs and films are always demonstrate how different the high and low class of people live and how they interact among each other (Worradilok, 1999). It seems all parties, the boss, the servant and the society are convinced and adopted this pattern of livings.

This attitude on semi-caste system is applied widely to the public, including to the waste pickers and waste related workers. The poor groups of people have been looked down upon because they are dealing with the unwanted, dirty and smelly materials. On the other hand they are expected to do their waste collecting and street cleaning jobs. The public will not feel anything when they don't throw garbage or litters in bins since they believe that waste workers will clean it since they are paid for.

Ignorance and thoughtlessness also play a big role in this matter. In the past, most or all wastes were organic that could be absorbed and processed naturally. Population was not so vast and the spaces were tremendous that residents could throw garbage in open spaces and the public still was not disturbed from odors, bad scenery, emissions, and vector diseases. Nowadays wastes are increased many times more, vacant spaces are rare, and the type of waste is changed to be more in-organics which is difficult or not possible to be composted naturally. But many people do not realize this change and still keep on their traditional practices. They have no awareness on the consequences from what they have done which will affect their lives and the lives of the following generations.

Some people have developed the *habit* of making messes (i.e. by throwing wastes anywhere around them) from their socialization and surroundings. It is observed that these parents or relatives raise their children in the wrong way, never asking their children to clean up the mess after the kids play with their toys and alike. This practice is applied to all walks of life, no matter they are rich or poor. This childish habit or behavior develops further when they grow up since no one teach them seriously how to make a clean and tidy environment. In addition, some people have been brought up in the messy environment and get used to it. They don't have any value for nice and clean environment either.

The last reason dealt with people's *beliefs*. It is obvious that some people have thought or perceived themselves as "the chosen" or the "born to be". Many of these people, who are rich, intelligent, holding high social esteems or high ranks in their professions, will do what ever they want to, without caring for the others' feelings or troublesome. What they have in mind is "I am the chosen" and "I can do anything I want", "The others can not bother me". For them, to throw litters or denying to cooperate in any waste management programs for the sake of the whole is "peanut" in their views.

Many literatures also commented that people don't participate in waste management projects because of *inconvenience* (due to lack of space or lack of facility), but this reason seems to be superficially addressed.

Community Based Organizations (CBO) is another important factor that can help reducing the waste and other problems arisen in the communities. Generally, each individual can not do much, no matter how intelligent, rich and/or positions in the society they are and upheld. Being organized together they gain more learning experiences, more bargaining and implementing powers. So far there is no strong community based organizations existed in Lao PDR. and Cambodia. This might be caused by the recent political and administration system introduced there. Only few reports on the strengths of the recycled villages nearby Hanoi has been known (DiGregorio, 1996). While some strong CBOs can be traced in Thailand (Rapeepat, 1998 and Rapeepat, 1999).

The experiences of CBO, which tackle waste issue in Thailand, are also still new and small in size. Most of them are recognized when Danish Cooperation for Environment and Development (DANCED) has launched its financial assistance for community-based environmental development projects recently (Rapeepat, 1998). In the past CBO was created and used by the

agency without own interests, visions and power. Many of them collapsed down sooner or never exercise anything except serving as a communication means between the agency and the community as well as a working mechanism of the agency. It is anticipated that CBO will grow up and contribute more to eradicate this waste and environmental problem.

The Private Sector in these 4 countries is yet rather passive in contributing to the waste management endeavors. This is mainly due to the irrealistic or impractical government policy, measures, laws and education in one hand. On the other hand, most commercials and industries care more for their maximum profit than the societal benefits (Lober, 1996). The trading company in Savannakhet, is one exception since the company has been asked to be responsible for waste management, small repair of streets and park cleaning (DCTPC, 1996). It is assumed that some commercials are willing to cooperate but they do not what and how to do, or whom and where can they contact if they want to contribute. The project on Recycle Paper for Trees (1997) reported that there were 1,930 organizations (companies, schools, government offices, NGOs and mass media) contributed their used paper to the project, totaling 343 tons in 1997. Some of them also contributed money (254,400 baht), which subsidize the project's paper collection's costs.

Overall, this sector has a potential and should be invited to join in various types of waste management activities.

Non-Governmental Organization (NGO), Civic Groups and Media are not yet well developed nor having liberty and freedom to do their tasks in the three Indo-Chinese countries. At present there are quite a number of foreign NGO donors operating in the 3 countries. However, there are not much involved in waste management field. Thailand is more liberal and free to let NGO and civic group grows. In fact, NGO is expected to be partners in development work and take an active role in the foundation and operation of civil society/ good governance. The Thai media is also granted to a high degree to report on the problems and their criticisms on government plans and performances. There are at least 200 NGOs (NGO-Cord, 1996) and few strong civic groups (such as Chiang Mai, Bangkok, Chantaburi, Samutprakan) in different parts of the country. A number of them pay attention on environmental issue but very few of them concentrate in waste matter.

NGO is more friendly and sympathetically to the people by nature and is established due to poor past performance of the state (Farmington, 1993). Normally this organization is more keen in organizing people organizations as well as introducing the cultural approach in development work (Rapeepat, 1999). When and where NGO is not so strong, or not fully involved in waste affairs, the in-charge public sector has gained too much weight in decision making and executing programs and the society has lost its momentum.

Other Factors like the shortage of areas for landfill, the obstacles derived from old structures of infrastructures, i.e. too small streets, highly dense area, etc. are not so much serious. If the residents are willing to cooperate, they can select appropriate methods and equipment and the area can be kept in clean and good order.

What Needs to be Done
Clarifying the Concept, Goal and Strategy of Waste Management System
All parties concerned must be assisted to learn and understand that waste management system is a multi-dimensional system that concerns many aspects and issues. Furthermore, all of these issues and aspects are closely interrelated. To tackle one single aspect may sometimes do more harms than good. The socioeconomic, politic, cultural, governance, laws, institutional, financial and level of technology and education of each specific area dictates the decision as well as design of the waste management system. After all, the sound solid waste management system must gears towards maximum benefits to the society as a whole, not for waste management sake (UNEP/IETC, 1996).

This leads to the suggestion that the waste management system must be planned and implemented in an integrated manner. Planners and managers must think more carefully about the concerned factors and consequences: not only efficiency and effectiveness alone but also employment, sustainability and equitability as well. The planning and implementing stages should allow more of different stakeholders (especially women, NGO and the informal sector) and other fields of expertise to join and organize supplementary activities as a package (such as source separation, reuse, recycling, educational campaigns, community composting, etc.). The waste related projects' strategy and activities should be integrated to the existing formal and informal systems (such as values, beliefs, folklore) which would guarantee more achievements to the greater extent (Furedy, 1992).

On the other hand, the national and local governments must issue policy and legal framework that suit the integration concept and practice. Devolution of waste management responsibility to the community should be envisaged. The institutional and financial aspects should not be in conflict with its concept, while the technology employed for the operation and maintenance of such systems must be selective and appropriate to the socioeconomic, educational and political conditions. Last but not least, the state must pay more attention in educating and informing citizens on the waste and environmental issues, by all ways and means.

To give an example, if the agency in charge of agricultural extension work is advised by policy framework to make use of compost more than chemical fertilizers, there will be a big demand for compost. The compost plant can run its business and may be able to make some gains, not losses. If the actual compost's price is not competitive with fertilizers, the government may provide some small subsidy, as commonly known that cost for composting from central composting plant can't be recovered by the compost sales (UNEP/IETC, 1996). The subsidy may be derived from the pollution control budget, since composting would help decreasing costs for landfill operation and maintenance as well. Or else the government could promote the community to run its own compost plant at community level, which has been carried out in Indonesia (Mockler, 1998).

In order to increase the quality and reduce the costs of compost, organics waste must be separated from waste stream at source. The farmers who use good quality compost will get better yields from their farming in a long term as the soil is properly treated. Farmers will continue using compost and reducing fertilizer application when they learn from the results. The community may decide and operate its own plant, using indigenous technology or any other appropriate one which can make the financial cost lower. If the state wants to involve the private enterprises, it can issue policy on tax reduction or exemption for composting plants' investment or providing soft loans for constructing and running such business.

Practicing Good Governance
To have the right concept on integrated waste management system alone is not enough; the agencies concerned must also undertake the "good governance" practice as well. Good governance is among other things participatory, transparent and accountable. It is effective and equitable and it promotes the rule of law. Good governance assures that political, social and economic priorities are based on broad consensus in society and that the voices of the poorest and the most vulnerable are heard in decision-making over the allocation of development resources (UNDP).

In other word, "Good Governance" can be defined in two folds: the value of respect for the will of the people and promotion of the people's capabilities that signify the goal of achieving self-reliant and sustainable development and social justice; and the functional aspect of effective, efficient government's working to achieve these goals (JICA, 1995).

This implies that the state must choose, design, plan and implement its own plan and programs with close consultation with other related organizations, be it other state agencies, NGOs, private commercial sectors, and interested groups of residents. Since each of these parties has

its own weaknesses and strengths, a major objective to support for good governance is to promote constructive interaction among all of them. Meanwhile, the agency must improve its efficiency, transparency and accountability to the people. There is a possibility that efficiency and effectiveness may be reduced at the beginning since all parties might not be keen in their affairs nor having teamwork experiences. However, in the longer run, this practice could be more benefited to the society or community. Coordination among agencies can be realized to a greater extent, cooperation between each party is more possible. Most of all the practice on good governance is a learning process and ground for the people sector.

Good governance, as an ideal orientation of the state, doesn't have a direct cause-and-effect relationship with participatory development, but the government should assume the role of a provider of a proper environment for market economy, extensive promoter of people's capabilities, builder of efficient administrative structures, and reflector of the popular will (JICA, 1995).

Working through New Development Mechanism
As mentioned earlier, the people or community should be more involved in planning and implementing stages, so there is a need to organize them into groups and/or committees. It is impossible to accommodate all residents in each of the activities. The representatives of various groups (i.e. waste pickers, recyclers, junk buyers, residents in any community who are conscious on waste problems) and/or the (whole) communities must work hand in hand with the state and NGO who are involved with waste issues. It is believed that if these people are empowered through the organizing and learning processes, they can contribute a lot, to solve their problems and to maintain the sustainability of problem solving mechanism (see Vincentian Missionaries, 1998; Rapeepat, 1998; UNEP/IECT, 1996; Gunn and Ostos, 1992; and Assaa, 1996). Social institutions and civic groups should be encouraged to take part in the waste management system as well.

The following cases illustrate how different community based organizations and institutions perform their functions in waste-related management.

The Klong Toey Environmental Preservation Group (KTEPG) or "the Eco club of Klong Toey", Bangkok, was formed by residents themselves to tackle their flooding and waste problems. Its "Garbage for Eggs" project stimulates residents to separate recyclables from waste stream and exchange it with eggs arranged by the club. The club sells those recyclables to a junk shop and uses that income from sales to purchase eggs. As a result, the community is much cleaner than the neighboring communities, the club becomes stronger and moves for community development actions (Mongkolnchaiarunya, 1999).

The 3-wheel cycling-itinerant buyers group of Khon Kaen has proven that their network could reduce a lot of recyclables from waste stream. The municipality allows them to collect recyclables and other unwanted goods (not organics waste) regularly throughout the whole area and in return the municipality spends fewer budgets in waste collection and city cleaning. These itinerant buyers shall be good citizens and consumers of the city's economy since they have some jobs and incomes. They also organize other self-help activities, like group medical services by the provincial hospital, saving group, and other (Taecha-atik, 1998).

The Civil Society (civic group) of Samutprakan province is comprised of 8 partners, namely; commerce, industry, government agencies, NGOs, low income communities, schools, academics and mass media. It has been organized since 1997 and conducts many activities such as tree growing project, waste reduction and improving collection efficiency project, introducing of clean technology to some industries located in the auspices of the municipality. Up to now, they are still practicing this civil society orientation (Thailand Environment Institute, 1998).

The 25-30 % recyclables waste in Hanoi has been managed by the informal sector; the individual recyclers, depot shop owners and most importantly the villages that run recycle

processing industries. Some of the villages produce paper, the others produce iron product, plastic, aluminum and copper. They have been doing these businesses for hundreds of years and contributed to the economy of the city, the farming and industrial sectors remarkably (DiGregorio, 1996).

In addition, schools and religious institutions should be invited to take part as pioneers, educators, advocators and campaign organizing partners of waste and/or environment management projects. It is observed that the schools in this region play a big role both in educating and socializing the children. The students are more exposed to school environment and these teachers receive more respect and gratitude from the students compared with what exists in the western system. At present there are a number of schools that are involved in waste reduction, separation and recycling activities (Thailand Environment Institute, 1998).

"Pathom Asoke Village "[2], a Buddhism Commune in Nakhon Pathom province has demonstrated how the community can be self reliant and handles its waste problem very astonishingly (field visit, 20 July 1999). All residents join in waste separation activity. Plastic bottles are reused and some are used as materials for producing refuse derived fuel (RDF). The simple RDF plant is initiated by the community with some external advises.

All organic waste goes to composting and indigenous microorganism centers. The compost and some microorganism produced are used in the community's farm and other green areas in the commune. While some microorganism is used for cleaning bathrooms, toilets and neutralizing polluted water ponds. It is a pity that this way of living is not recognized by the Sangha Council (Board of Supreme Monks) and by most of Thai people who claim themselves as Buddhism followers, but without truly knowledge on Buddhism.

Another Thai temple called "Wat Suan Kaew"[3] in Nontaburi province has been well known for its activity of mobilizing people's unwanted matters (interview the project officer, 15 June 1999). Everyday, around 1,000 jobless persons will come to work in the temple for food and/or recycled goods. The work starts from sorting and categorizing what has been donated in bulks; some are put into the super market and ready for sale right away, the others may need small repairs and/or recycled. Many merchants and poor people can do their shopping activities here at a very extraordinary cheap price. The goods is also handed to the poor free of charge. The donated wastes (unwanted goods) are transported by the temple's trucks and by the donors' own means. Wastes being accepted are electricity appliances, construction debris, furniture, utensils, old books, clothes, shoes, backyard wastes. According to the brochure of the temple, more than 3,000 people receive this service free of charge and more than 36,000 poor people can buy reused, recycled goods at cheap price.

Community Participation: the Key for Success

Experiences in many developing countries show that most development interventions imposed by the state or NGO are not successful or sustained. They always die down when the supports are terminated. The reasons for this are simple: either the people don't have sense of belonging, or they might not be able to run it as it is too complicate, or to costly, or it is not so useful in their points of views, or a combination of these reasons. People may offer cooperation upon request from the agencies for a short while if they are convinced or they have other agendas in mind, to tap something else from the agencies.

The preset plans or specifications developed by experts if handed to the people, who are accustomed to behaving in a different way and have not learnt what the experts have learnt, will never work because the people can not understand why and how it must be like that. Providing information for people by oral and written forms is not effective; where as the kind of "social learning" that stakeholders generate and internalize during participation in decision making, planning, implementing and evaluating of development projects/ activities can foster social change (World Bank).

Waste management projects are also part of development interventions as they bring about changes in quality of life and bringing about favorable social, economic and political conditions to some degree (Sanyawiwat, 1997). They can not be successfully implemented without participation from the people or the community.

On the other hand, the national and local governments and/or NGO have their aims to bring about development to the people. Development does not start or stop with the production of goods or one time service. It starts with the people, and the useable resources of people, such as motivation, initiative, organizational discipline. Without this, all resources remain potential and untapped (Srivinas, 1994). Furthermore, development can be defined as a learning process for the target people to learn how to solve their own problems and take full responsibility over their lives (Hunter, 1971). Ideal development is the development of human beings. Without human development, people cannot be self-reliant and will rely on someone to help them solve their problems all the time.

Community (or human) development is more of a process model than a blueprinted model (SFPP, 1993). Target people and development worker can learn, adjust, improve and develop on the spot along the ways they proceed together. However, this doesn't imply that we cannot set our goals and objectives at all. We still can do it roughly, not fixing detailed specifications like what we do with planning to build a bridge or a house. This conceptual idea may be foreign and difficult to engineers, agriculturists and other professionals who are not familiar with social sciences field or development work, but it is very important to understand and be able to translate this process model into practice.

Participation is thus a time consuming process, which needs continuity. Any agency that wishes to employ this concept must be consistent in its policy and practices.

Participation concept is an evolution process, it has been changed from "Mercy" (in the past) to "Rights" (at present) and may move to "Mutual Helps" (in the near future). So the state agency and NGO working in development fields must understand and able to apply it properly. Many agencies are still get stuck with the past, that they interpret participation as a mercy thing they offer to the people. So their participation is interpreted as "cooperation" asked from the people than the real "participation" in decision making. And as participation in government's decision making process becomes a right of people and/or community, the local and national governments must comply with it. This scenario can be seen in all developed countries as well as in some developing countries, including Thailand. The right to participate in many public affairs, and other different kinds of right have been stated in the latest constitution issued in 1997 (Tanchai, 1997).

It can be concluded that participation creates the sense of belonging and commitment to the projects, help people learn so that they can carry on those activities and it helps increasing the confidence and pride of the people themselves, which are crucial for sustainability of any development projects.

Bunch (1982) has drawn conclusions from vast development experiences of his organization and his own, that enthusiastic will flourish community participation. Main factors influencing enthusiastic are:

- the projects that will be launched must gear towards fulfilling the felt and real needs of the target groups;
- the target group must be confident that they can solve such problems (the interventions must not be too complicate nor too costly for them);
- the target group must trust in the development worker's capability (or agency's staff) and his willingness to work for the benefits of the people and/or the community, not for his/her own benefits;
- the target group must be involved as part of the project administration from planning stage onwards;

- the target group must participate in project implementation and feel proud of own endeavors. Thus, the projects should be started from simple and small, then gradually shifted to the more complicate and big ones.

He also added that enthusiasm can be developed further if the people have freedom to set their own objectives and new initiatives in doing some things when they want to. Mutual help and learning atmosphere are also important factors, including the recognition and creative feedback from other people and project staff.

The focal point is how to make people aware of their own problems, decide to do something about it, plan and select some alternatives and mobilize their resources to tackle problems faced by themselves. This will eventually lead to a formation of community based organization(s). The organization can become permanent when it receives supports from its members and some external supports when necessary. The leaders and members have to learn a lot of new things, that differs from their daily lives, i.e. project planning, financial management, conflict resolution, discussion and communication skills, new technology, negotiation skills, etc. so that they could do their job well. If they are not capable to do their tasks yet, the concerned state agency or NGO should assist them to posses capacity building.

Past experiences on community participation in Asia and Africa has clearly shown that participation cannot just happen; nor can it be taken for granted either. There are several preconditions to participation, which have to be met before it can be applied and sustained in a particular situation (Srinivas, 1994).

- Participation has to be a gradually developed response to an actual and pressing collective need of the people in the community.
- The beneficiaries must be identified in order to utilize the common interest in securing their position and improving their living conditions.
- The selected beneficiaries' group must be informed about all relevant features; aims, finance, technology, organization, management aspects.
- To maintain links between the state agency, NGO, commercial sector and the community, a strong community based organization should be envisaged. To organize this kind of organization, NGO's support is additionally needed.
- The structure of the organization varies and evolves through the collective efforts of the residents, with the aid of an accepted local leader (s).
- The community leader(s) and other members should be trained in the management process. Management is an important tool for reaching the desired aim of a self-help project, of keeping records and making responsible decisions in financial matters.

Steps in Promoting Community Participation

To elaborate the steps on how to work with community and stimulate community participation, the author will use the 5 working steps, modified from the essential activities for community participation (Cheema, 1987) as a learning path. However, details and conclusions derived from other concepts/ principles and from own experiences will be added when necessary.

(1) The first thing any development agency must do is to *identify the community needs*. It can not be identified properly if the agency (staff) doesn't understand the situations of that community. So regular dialogue, field visits and documentation study must be done. Areas needed to be known covers; what and how people do for their living, who is who and why the leaders take up their positions, who are the main and strong stakeholders in waste problems, how do they feel and see the problems, are there any potentials that can be used for solving this problem, previous experiences in managing waste problems and so on. To do this job well the staff must have sympathetic understandings to the community and the people in that community. In addition s/he must acquire communication skills and learn how to employ participatory approach.

While identifying the needs and problems of the community altogether with some leaders or existing local organizations (both formal and informal), the staff is not only establishing relationship, but also conscientizing the community leaders and members (SFPP, 1993). So the awareness building process is begun. And if the staff involves the leaders in finding facts and ideas of the people, they will feel more alert and committed to do something to remove those problems.

If waste problems were not explicitly identified, the staff should not be frustrated and stop working there. S/he should accept them as it is, and trying to analyze whether the identified problems could be linked to waste issues. If it is so the staff should assist the community to materialize their needs. Many cases show that people perceive things differently, but it can be related. We should use the perceived needs as "entry point", starting from there and gradually moves to the waste problem affairs later on.

For example, the Eco club of Klong Toey, has started its waste and environment project from "flooding" problem. Through planning process, the community decided to dredge mud and garbage out of the existing canal and drainage systems by themselves since they have been suffered for years during rainy seasons and the local government (district administration) could not help much. After working together during weekends for 8 months, the community was released from flooding problem. The district administration lent small equipment and provided collection service. When the first action was successful, the club was confident and continued to operate its "Garbage for Eggs" project, which aims for environmental protection and fire control. Until now, the residents separate recyclables from waste stream and exchange them with eggs arranged by the club (Mongkolnchaiarunya, 1999). The club will start its indigenous microorganism project, similar to what Pathom Asoke Village is doing, from September onwards (Field visit, 29 August, 1999).

It is possible that the community may not see the waste and environmental needs at all. The staff can do either providing additional information about it (but not in a direct, convincing, top down way) and ask if the community have a second thought so that additional needs can be added, or leave them for a while until they are ready for it. At the meantime, the staff can coordinate with other agencies to help the community to materialize other needs raised.

If there are so many identified needs, the community must categorize and prioritize those needs. At this stage, the consensus from the community is required. However, if consensus were not possible, the agreement among representatives from various stakeholders in the community would be all right. Both male and female of different ages, income and professions should be presence in major decision-making meetings. The staff should keep the meeting be run in a democratic way, relevant information should be prepared and distributed before hand, and communication skills must be available to facilitate the discussion.

(2) The next step is *project-planning process*. The staff should plan projects that response to the prioritized needs jointly with the target groups concerned, or with the leaders of the community, and/or the community as a whole (depending on who are mostly effected by such projects). The best method is to organize informal meeting(s) among those concerned. When the community does its planning, imposition of formal and official rules and procedures should be kept aside. As long as they have clear ideas on; why, what, how, when to do, where, from which resources and by whom, it is good enough. If the staff wants to put those details into official formats, s/he should do it by him/herself afterwards (or train the leaders to do it later on).

Good and effective planning requires information, conceptual framework and analytical skills. The people know best about their own situations but they still need more of external information, such as policy, legal framework, situations and experiences in other places, availability of external resources, and so on. They also need new ideas to tackle their problems. The staff must ensure that people (or leaders) have sufficient information and some conceptual framework. This can be done by providing them materials for reading, inviting resource persons to share experiences with the local people, organizing study tours, and promoting regular

experiences' sharing among local wise-men and leaders themselves. The staff can improve their analytical skills by asking systematic questions, i.e. what do you think about it?, why? any indicators? who are the winners and losers if this project is implemented?, and so on. S/he should help summarizing the results over time while the planning discussion is on.

With regards to waste management, there is a possibility that some technology must be selected. The community and the agency may have different views about activities and technology to be chosen for waste collection and treatment. Both modern and indigenous technology has its trade off. There is no fix rule that when and where which types of technology be chosen. The selected *technology must be appropriate*; to be technically sound for the environment and not be beyond the capability of the community and local staff to manage, financially and economically sound and suited to the local context, socially accepted by the people and politically fitted to the conditions.

Referring to the case of Klong Toey's eco club, though the group uses the traditional microorganism processing technology, but uses plastic bins, which is the product from new technology, as processing containers.

It must be noted that whenever any technical know how is introduced to the group, either it is a new or traditional ones, the staff must see to it that people do know about the subject. If they don't training courses and other means to help them learn are required.

Before July 1999, the club had no ideas about processing organic waste into indigenous microorganism, only when some of the leaders had learnt it very recently.

(3) *Mobilization of community resources* and *decentralization of state's financial and administrative support to the community* should be done in parallel to ensure that the projects can be implemented smoothly. If the community see the projects are theirs and be beneficial for them, they will be willing to contribute what they have. On the other hand, the state agency should subsidize people-initiated projects, at the right time and in the form that people can make use of it. It was found that many good projects received government budget too late. While some fund could not be utilized properly due to rigid and complicated financial procedures and rules.

The leaders should be given most responsibility in managing the resources available for their projects, not the staff from the agency. If the leaders are not capable to handle financial management tasks, the concerned state agency and/or NGO should conduct relevant training programs for them so that they can master necessary skills.

Funding can be mobilized locally, in forms of saving groups, communal revolving fund derived from members' contribution, donation from individuals, from local institutions such as temple, and/or from external micro-credit programs. It is important that solidarity, mutual help concept and informal rules and laws be emphasized as well.

Community resources are not only money and materials, but it can be in other forms such as ideas, labor including managerial capacity. In some circumstances, non-financial contributions are more important than money. The "Garbage for Eggs" project will not possible if the leaders don't sacrifice their weekends to serve their community without payment. The residents must also provide cooperation with them otherwise it will be a failure. In this respect, this type of resource could be mobilized by confronting, stimulating and facilitating them to solve their own problems. If any groups have well experiences in working together for solving own problems, it can be assumed that they have resources as well as potentials to do something with waste issues.

(4) *Implementing project activities* must also be responsible by the community or community groups who are directly affected by the project's results. The community must have autonomy to set their own standards and procedures for project implementation (in case the state is involved). Control and supervision is officially in the hand of the leaders or the representatives. The community may employ informal rules and some cultural beliefs in managing their activities

if they are sound and suitable. However, the staff of state agency and/or NGO should assist them in providing technical support and advises requested by the community or group leaders.

All projects can be best implemented if it is done by local group/ organization (s). As mentioned earlier, individuals don't have enough power to learn and to fight against big problems. If the group were organized in properly, it would have "synergic" power, which is greater than the sum of power of all individuals. It doesn't matter whether the group is formalized by any laws or be acknowledged by any agencies. What counts most are; their clear aims, understanding of the group structure and relationship among them, participation from members at all stages of project cycle and enjoy benefits together in a fair manner.

When any group/organization in a community is successfully implemented its activities for the benefits of its members, there is a tendency that that group will extend its working scope (either in size or in more activities or both). The Klong Toey's eco club has extended its hands into another 11 communities. This becomes a network of communities who have similar activities. The club will also start its production of indigenous microorganism (IMO) derived from organic waste process by September 1999. This IMO has been proven that it can substitute chemical fertilizers since it is cheaper and there is no side effect affect from application (field visit, 29 August, 1999).

While the agency needs improvement for higher performance and transparence, the group has to fulfill similar expectations. The managerial aspects of the group must also be transparent and organized effectively to serve the needs of its members. However, the concept of transparency perceived by the agency and the group is slightly different. Transparency for the people depends on trust and confidence on the leaders (visible actions and progress of work), unlike those of the agency, which relies on formal receipts, proper bookkeeping and auditing.

(5) The community development committee or group leaders/ representatives must do *periodic monitoring and evaluation* of the project(s). Sometimes, local leaders need training on monitoring and performance evaluation methods, but it does not mean that the formal and difficult methods are necessarily required. It must be note that the community may use standards and indicators that differ from the state agency or NGO do. Evaluation can be done at all stages, not necessary to be conducted at the end. When people and staff find any dissatisfactory results or any obstacles, they should be help to draw lessons learnt. This will create a good ground for learning and an opportunity for future improvement.

This process of learning by doing (from project development to implementation, evaluation and improvement can be called as "social learning process" (NE-NFE center, 1993).

It is observed that before the group will launch any projects, the officers must discuss together first about their performance and their capacity to do additional tasks.

How to Materialize this Concept
Working With the Community Based Organization (s)
The waste situations in the 4 countries are now beyond the capacities of the national and local governments to handle by themselves. Devolution approach needs to be envisaged. It is crucial that the governments, NGO, other sectors concerned with waste management in these 4 countries agree with the concept of community participation, and see some ideas how to promote community participation. However, it doesn't mean that the staff can work and organize community-based organizations right away. They need new orientation and thoughrough training programs so that they will be able to do their tasks properly. This implies that they must acquire new working attitudes, new sets of knowledge and skills since most of the staff of waste management organizations have not been exposed to these fields of study.

While the staff is not yet trained sufficiently, the agency can still try to apply the new concept by coordinating with the community development /community work units or NGO, who is keen in this people approach, to join hand and learn from practices together. At the beginning few sites could be selected for pilot project running and be expanded to the greater areas when sufficient

learning and success could be tapped. During running the pilot, all concerned sectors including the people sector, should be involved in designing, planning, implementing and evaluating the project (s).

Criteria used for site selection can be many such as access to the place, some characteristics of the site, political reason, etc. but one important point is that the community should have potentials or self capability in managing their own problems before hand. And if they face a lot of difficulties in life, especially from wastes, it will be more of an asset than not.

As stated earlier, waste management is also a part of the overall community development so it must aim at better quality of life, self-help, self reliant of people, and ability to solve their own problems (through group organizational and social learning processes). The agencies should apply this concepts and principles with the people and with their own staff. Inventory of cases for learning, promotion of shared learning both among and between groups, provision of technical support and advises are necessary activities and must be ensured that they are done properly and sufficiently.

Last but not least, the government agencies must not forget applying good governance orientation. Without this, it will not only deteriorate the agencies' performance and efficiency, but also creating a bottleneck for the people sector to cooperate in the civil society practice.

Public Education and Information Dissemination

To run a community project directly can work along with the use of media for people's learning and stimulating. But the contents broadcasted must be more specific to each of the target group(s). In addition, the massage must touch the heart of people so that they are convinced and willing to try some new practices, i.e. the Klong Toey eco club used to inform residents about the causes and solutions for flooding, dangers from vector diseases occurred in the community, social stigma and why & how waste removal should be done, through the use of sound amplifier.

Other related media programs should be re-considered as they influence the young generation tremendously. If the public is still exposed to semi-caste system, it is more difficult to campaign for not throwing garbage and litters on streets or public space. In contrary, if the people are aware of the dangers to their health, there is a tendency that they will be more careful of disposing their wastes.

There are many more types and forms of informal education system which can be applied in waste management field. The Thai military, in cooperation with BMA, Department of Land Development, Pollution Control Department and a private foundation have jointly launched a pilot project to train and supervise all soldiers in one military department to practice composting method since April, 1999 (City radio, 29 August 1999). The project aim is to reduce organic wastes generated in that military camp, to get sideline benefits from compost sales and use of compost, instead of using imported chemical fertilizer, and to socialize and learn the soldiers a new habit on proper waste disposal.

In Cambodia, there is still a tradition that people are asked to do communal work on every first Sunday of the month. If this program is carefully adjusted and organized, it can be one of the learning opportunities for self-help as well as waste management endeavor.

Recycled villages of Hanoi are also very interesting. From generation to generation the occupation and know how has been transmitted. This case needs to be elaborated further and made available for other communities both within and form other countries to learn.

Similar projects could be introduced in schools, religious institutions, commercials, offices, and industries. Within the region, Buddhism plays some roles in Thailand, Lao PDR., Cambodia and Vietnam, but the degree of influence ranges from many to few accordingly. Although not many followers do practice what the Pathom Asoke Villagers do, or following what Lord Buddha has taught, but there are always some people that development worker can start his/her work with. It is also interesting to study other main religions and beliefs of local people and existing tribes (a

big numbers existed in Lao PDR. and Vietnam) if there is any sayings that support new concept of the integrated solid waste management.

Education (formal, non-formal and informal) is a life long process that needs consistency, frequency, continuity and demand-driven components. The term "demand-driven" includes the content, process and pace of learning that each of the learners want to and can do (Mongkolnchaiarunya, 1997). All four components should be covered in any environmental and waste management education and campaigns.

Employment of Specific Strategies

There are some few issues to be mentioned. People in this region are very much aware of *economic aspect.* This might be caused by the fact that majority of people are still poor. Living conditions and public and private infrastructures are not well developed or had been destroyed during war times. If any waste related activities are concerned with cost saving and income earning (UNEP/IETC, 1996), there is a better chance for success. So the informal sector should be strengthened that employment, investment and income generation can be pursued. The indication that supports this statement is the existence of waste pickers, itinerant buyers, dealers and also recyclers. The agency should try to study and find ways to engage this sector more in its waste management programs.

Wives in this region also have high commitment, love and care to their *children and family members*. The activities that will be organized must contribute to the better quality of life, and safety of the family. "Eggs" is a very good means and "symbol" for exchange with separated recyclables in Klong Toey since it is highly valuable to health care (some people especially men, are shy and will not cooperate if they have to separate and exchange recyclables for money by themselves). Past development experiences tells that woman is more serious and hard working when their children and family will be affected from what they are doing. *Women* are also more patient and well-qualified followers of Buddhism than men are too.

There are many handicaps, particularly in the 3 Indo-Chinese countries that need rehabilitation care and support. Recycled and repair projects can be introduced to this *community of the handicapped* as part of fund raising and rehabilitation exercises, like what has been implemented in the Philippines and Japan. People donate unwanted goods to the age and handicapped societies and the societies could directly sell or sell them after small repairs to the villages or poor communities. Income earned is distributed to both the members and the society (communication with one Thammasat university social welfare expert, 10 June 1999).

In all four countries, the potentials for *recycling and composting* are very high. Most organic waste is not yet utilized properly. It becomes more clearly seen that the community based business is the good alternative for waste disposal and income earning (sales of compost and microorganism substance, recycled materials and products, and processing of foods) or at least for expense and health risks reduction. Market for compost products in Vietnam is not the problem at all since the country has a great demand for good quality compost (Business radio, 21 August, 1999) that some companies try to import a big amount of dried chicken dung from Thailand.

Limitation

Due to unavailability and/or shortage of relevant data about waste issues in the Indo-Chinese countries, the author has to rely on the information tapped in the main cities of those countries only. So data gathered in Pakse, Savannakhet, Thakhek and Luang Prabang (Lao PDR.), Phnom Penh (Cambodia) and Hanoi and Ho Chi Minh city (Vietnam) will be used as basis for analyzing and making recommendations. For Thailand, the data of Bangkok, Chiang Mai and the national level will be used when it is required.

Other socioeconomic and political contexts are tapped from personal interviews with students from those countries, from personal direct experiences and existing limited numbers of literatures.

Notes
1. This expatriate has been working in Thailand, Cambodia, Laos, and Vietnam, including Indonesia, Egypt, and some African countries for several years
2. There are 17 monks, 12 nuns, 120 students and more than 200 people living in this community. The community has its own temple, living quarters, farmland, processing factories, workshops, school, health center, market, communal kitchen, waste recovery plant, composting and indigenous microorganism center, and etc. There are 11 of this kind of closed community established all over Thailand, with the population of about 7,000. Their ways of lives are fully dominated by the teaching of Lord Buddha, which is totally opposite to capitalism and consumerism.
3. This temple has run other activities, such as campaign on not drinking water from plastic bottle (to reduce waste), medicated herbal gardening, literacy campaign (scholarship for the disadvantages), self-employed small business for the needy youth, nursery, poor people super market, etc.. The leader monk, Phra Payom Kalayano, has also produced Buddhism and quality of life -related programs in 5 radio stations including having his separated column in 5 public magazines and newspaper.

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