

NGO Forum on Cambodia

**Preliminary Study of the
Impacts of Toxic Waste on
the People of Sihanoukville**

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INTRODUCTION

1. Background

Cambodia is one among the poor countries in the world and the country has come across different problems over the last two decades. Within this period, Cambodian people have suffered lots from different problems. The suffering ranges from long civil war and Killing Fields to Human Rights Violations, AIDS, poverty, poisoning, and now toxic waste. All these have threatened Cambodia at present and future. The poor are most affected by the above factors due to their rights not being protected and government is weak in helping them.

The recent scandal of toxic waste is another example, which shows that the suffering has no ends. The import of toxic wastes to Cambodia by a Cambodian firm from Taiwan cause a death of some people and others feared. Social unrest occurs as a result of anger and fear. This type of lesson reflects the weakness of the government management and will continue to happen in the future if the government structure remains unchanged.

The waste has been dumped on the watershed areas about 14-15 km from Sihanoukville. The surrounding villagers and dock workers are victimized by the evil action of powerful people. The risks to the lives of villagers and docks workers have not been ensured to be safe. Although the fact has been recognized that the situation is serious, villagers have not been prevented from being at risk by authorities concerned. However, the effect of the toxic waste has an impact not only health and environment but also the living condition. The livelihood of most people is under pressure, which requires assistance from outsiders. The quick response to help the most vulnerable people from different directions is indispensable.

2. Rationale of the Study

The issue of toxic waste has been broken out to the public and surprised people at all levels. Many people doubted how and why they imported the toxic waste to Cambodia. The information through media by both government and independent sources has some times been limited for other agencies that are interested in the scandal. Therefore, detailed information is required and so NGOs concerned in this issue determine to carry out a study.

On the other hand, the goods that local companies imported to Cambodia are mostly second hand or are not allowed in other countries. These goods worried the host countries for two reasons: one is space to keep it and another is the increase of tax on the storage place. In contrast, the import of such goods helps the Cambodian firms gain high profits from local sale and commission by foreign companies. The problem behind that is the impact of these wastes on our environment and livelihood. Now it is time for NGO team to conduct a study on how it affects the environment, people and their livelihood. The study will provide some information related to the waste that was imported and its

impacts on the development of Cambodia. The study will help to explore the possibility to ban the future import of any toxic waste.

The team composed of EWG members (Mak Sithirith and Vann Piseth) of NGO Forum jointed by KSA (Chheum Kun Cheat) representing Star Kampuchea, has conducted a study on the impact of the toxic waste on people in Sihanoukville. The study will help to fill the gap of information for some concerned NGOs in order for them to take action. The result of the study will be guided to what areas that NGOs can do to help affected people in resolving problems.

3. Objectives

The main objective of the study is to conduct a preliminary study of the impact of the toxic wastes on people and recommend for future action.

The specific objectives are:

- to meet the victims near dumping sites and port carriers;
- to meet with NGOs working in Sihanouk Ville;
- to meet local authorities and concerned institutions; and
- to study the impact of toxic waste on an environment, health, micro-economy and tourism.

3. Scope and Limitation of the Study

The study gathered the secondary information from the media, newspapers and primary data from the field study in Kompong Som. The main primary data was collected from villages surrounding the dumpsite, especially those villagers who emptied rubble out of the sacks and took them away to make cots, storing rice and those who put rubble to pave the ways. Apart from that, we gathered primary data from the seaport workers at Kompong Some.

The study did not cover all villages and villagers who were affected by the dumpsite but only selected people and sites. The study was conducted by EWG of NGO Forum independently from other sources like government and newspapers. The technical issues related to the toxic waste such as diseases are not addressed. The issues of corruption, people involved in corruption and political scandals are not covered in our study. The study is concerned only with the impact of toxic waste on peoples' livelihoods and environment. However, a comparative study of the symptoms of sick people at village levels and seaport are necessary.

Government officials and NGO staff were met at Kompong Som to discuss the toxic waste issues and the possibility of working together in the future. However, the meeting with them was only with some officials and NGOs due to the limit of times and financial support. Another problem was that the team has done a study on urgent occasion and short period of time. The Christmas, Saturday and Sunday were the days off of NGOs and government staff, which caused difficulty for our team to conduct a study.

METHODOLOGY

1. Data Collection

The data was gathered in three villages, Phou Theung, Chamnot Ream and Koki villages, in Sankat Betrang, Prey Noub District of Sihanoukville and seaport. These villages are near by the dumpsite and some villagers were involved in emptying the rubble out of the sacks.

The data collection was carried out for four days from December 25 to 28, 1998. Two types of data were gathered; primary and secondary data. The main focus was on the primary data.

1.1 Primary Data

The primary data was gathered through group discussion, interviews with key informants, questionnaires and direct observation. The interviews, group discussion, questionnaire survey and observation were conducted in studied villages and in the seaport.

The interview was conducted purposely. The questionnaires were used to interview the respondents. The questionnaire interview was done with some villagers and some dock workers. The numbers of respondents are presented in the Table 1.1.

Table 2.1 Respondents of Primary Data Types of Respondents

Types of Respondents	No. of respondents
Villagers	16
Workers	05
Officials	02
Monk	01
Total	24

Source: Field Survey, 1998

The discussion was conducted with groups of villagers, dock workers and a monk at respective places. The discussion was mainly focused on the impact of the toxic waste on their livelihoods.

Table 2.2 The Types of Interview Group

Types of Group	No. of Group
Villager	02
Port Worker	03
Monk	01
Total	06

Source: Field Survey, 1998

1.2 Secondary Data

The secondary data was mainly gathered through newspapers and some documents in both Khmer and English languages. The secondary data is used to complement primary data we collected in the field.

2. Data Analysis

This is a type of explorative research. Qualitative methods and description are used to analyze the data with support figure and table in the form of frequencies or percentage. As the study took place in two different places and we are not experts in health, the comparative analysis of the symptoms of two places is used.

TOXIC WASTE

1. The Import of Toxic Waste

About 3,000 tons of toxic wastes was imported from Taiwan on November 30, 1998 and dumped four days later in Sankat Batrang, Prey Nob District, Sihanoukville, about 10 km from Sihanouk Ville. The wastes were contained in triple line sacks bearing the skull and crossbones warning sign. The materials were labeled construction waste. The workers in the seaport and the villagers near the dumpsite were told that the wastes were raw cement (*mecimen*). The sample of toxic waste has been sent to Hong Kong for analysis. The United Nations Development Program also assisted in sending the sample to analyze in Singapore. However, the waste is not radioactive. Taiwan Petrochemical Formosa Plastic was the source of these wastes.

Thai Army specialists, including nuclear scientists and chemists have come to detect waste and concluded that there is no abnormal radiation. They are believed to contain hazardous materials also such as lead, zinc and mercury. Therefore, they took the samples to test for chemical hazard.

The company strongly denied that the waste was not toxic but admitted it contains traces of mercury and had been certified by Taiwan's Environmental Protection Administration as well below hazardous levels and safe for landfill disposal. The question was that if they thought this was not really hazardous why did they ship it to Cambodia at such a high cost. Even though the material was 20 years old, they believe the toxicity still remains. Taiwan called to launch an inquiry with Cambodia and regards the blame by Cambodian government as irrational or based a lack of sufficient evidence or groundless.

The waste was dumped in white garbage bags in open area. Villagers went through the waste, scavenging some of the plastic bags to store rice, making mats and cots, and took some pieces to use as landfill because they were told that the waste was raw cement. No warning sign was displayed at the dumpsite.

The problem is that no landfill in Taiwan could take it in the face of protests by local opponents. Therefore, Cambodia is a target place that Taiwan could use unaccountably. The Cambodian government has appealed to international organizations involved with environmental issues to help examine the waste. Hun Sen also appealed to U.N, WHO, and environment related international organizations to provide Cambodia with facilities to protect against the waste.

The Cambodian Government has ordered to send the waste back to Taiwan without waiting for the result of toxicology tests from Hong Kong and Singapore. On the other hand, Taiwan's environmental agency requested the Formosa to take responsibility for returning the wastes to Taiwan.

2. Involvement of Institutions and Officials in Toxic Waste Import

The shipment was approved by high officials. At least 100 people are involved in this case because it is not normal to import 3,000 tons to one country. One unidentified high ranking official received US\$ 300,000 alone. According to many newspapers, a US\$3 million bribe had been paid to officials to allow the waste into Cambodia from Taiwan. The government blamed unidentified government officials and port authorities for letting the waste into the country.

According to Rasmey Kampuchea, the government will remove all-officials involved in the import of the wastes. So far, more than 30 customs officials are suspended including National Customs Director. Not only customs were suspected to be involved but other institutions as well such as KAM KONTROL, KAM SAB, Economic Police and Port Authority.

Mut Vuthy import-export, Cambodian Company, was involved in the import of the toxic waste. This company said that they imported raw cement (*Me Siment*) which will be used for making kitchen tools. The Ministry of Environment has complained to Council of Ministers about the issues of 3,000 tones waste imported by Mut Vuthy saying that the involved officials must be brought to court. An Inter-Ministerial Committee was established to do follow up on this case.

The Taiwanese company that sent the waste had said it obtained permits from Taiwanese and Cambodian authorities. Customs and some officials from KAMSAB and KAM KONTROL, those who were blamed by people for allowing the waste in and their families left homes and offices.

More than 1,000 protesters sacked the offices of the local authorities who allowed the wastes to be imported. At the dumpsite, about 60 demonstrators marched on district offices where the waste was dumped. Two workers from the human right group Licadho were arrested along with 10 demonstrators.

3. Law related Issues

The load of some 3,000 tons of the waste will face legal action. Those involved will be brought to trial according to law. As the issue was exposed, the shipment had been approved by Taiwan and Cambodian authorities and was inspected on its arrival in Cambodia on November 30. Cambodian Authorities have arrested the head of the local company, Muth Vuthy.

So far, in Taiwan, a Taiwanese petrochemical company was fined US\$ 1000 for exporting the waste to Cambodia without official approval. The Formosa Plastic would face further legal action. If Cambodia determines the waste is toxic and entered Cambodia illegally, the Taiwanese government will ask Formosa Plastic to retrieve it and impose a stiffer fine. Up to now, a local company head who imported the waste has been detained.

Mok Mareth, Minister of Environment, expressed concerns that the toxic waste may affect the environment. According to him, Cambodian environmental law has defined clearly that even if the waste did not have harmful effects or was toxic, the import of waste is not allowed. The Cambodian Environmental Law strongly bans the import of toxic waste to dump in Cambodia. The Cambodian government threatened to suspend any government official who was found to be involved in importing toxic waste from Taiwan. Those who are involved in the matter will have to face the law. Prime Minister Hun Sen described the import of toxic waste to Cambodia as heavier than bombardment that United States fired into Iraq. He as Prime Minister said Cambodia has banned importation of wastes into the country since 1990.

Mok Mareth again explained that the import of waste into Cambodia is against the international treaty that does not allow to import or export the waste from one country to another. According to Taiwan law, the import of waste is not permitted. The case that Taiwanese company spends lots of money to take the waste to dump in Cambodia is extremely unusual. There must be a corrupted way of dealing with the waste in order to import and dump in Cambodia secretly while the law of both Taiwan and Cambodia forbid this.

However, according to Ira Dassa, former legal advisor to the National Assembly what Mok Mareth called the import of toxic waste prohibited in the country, is not in the 1996 Law on Environmental Protection and Natural Resource Management. What the law does is call for a subdecree on the prevention, reduction and control of air, water and land pollution. But until a subdecree is issued, no industrial practices, including importation and disposal of toxic waste, are illegal under the law.

4. Result of Toxic Waste Analyses

Initial test results on 3,000 tons of mercury tainted waste dumped in Sihanouk Ville shows the material is highly toxic according a Taiwanese environmental group (quoted by Cambodia Daily). The Cambodia Daily also quoted Cambodian environmental officials' speech that three preliminary analyses from a soil sample at the site show a mercury content of 675 parts per million which exceeds safety standards. The first test was done in Singapore. The Green Formosa told that the normal standard in Taiwan should be under 0.2 parts per million. Additional testing is being conducted in Thailand and Hong Kong.

The second test conducted in Japan has judged a sample of the mercury-tainted waste dumped near Sihanouk ville to be highly toxic. Five soil samples taken at the site showed a mercury content ranging from 97 parts per million to 3,984 parts per million. Although the result of the analysis is different between the testing in Singapore and Japan but the toxicity is high comparing to normal safety standards. The blood and urine test of nine sick dock workers who had complained of sickness after coming into contact with waste, by World Health Organization (WHO), had proven normal. WHO confirmed that none seems to have symptoms of poisoning.

*charge to Mhinake Institute
their symptoms may be caused by other
content of the waste*

IMPACT OF THE TOXIC WASTE

Although there are differences in the results of the test between in Singapore and Japan, both agree the waste is toxic. The waste was widespread in the water, soil and air which at present has not been made clear to the public nor its affect on people at present and perhaps in the future also. The most vulnerable people are the poor especially the villagers living in the villages near by the dumpsite and those dock workers who carried the waste. The impact of toxic waste on these people has not been on the agenda. Therefore, the team of NGO conducted a study to find out the impact and alternatives to help the poor. The team focuses the study on the impacts on the livelihood, health, economy and environment.

1. Livelihood Impacts

The toxic waste arrived in Cambodia on 30 November. All respondents that the team interviewed did not know that the waste contained high toxicity. All villagers and port workers that the team interviewed are subsistence families and poor. The detailed information of how poor and subsistence are not deepened in our research. From the places that the toxic was loaded and dumped, the people were told that the waste was raw cement (*Me Siment*). The waste was imported like raw materials for the kitchen factories. People were told that the factory will be built sooner or later and can provide employment to the surrounding villagers.

At the dumpsite, in the beginning, many people wondered if it is raw cement why they let people take and damage the bags. People said that the dumpsite was not guarded. Therefore, villagers went there to gather the bags and take some rubble home to fill the ground. People spread rumors about raw cement from one to another and finally many villagers went there. Most of them who went to the dumpsite and collected the sacks are poor. They expected to earn some materials like sacks to store rice, make mats and cots and other needs. Most of the respondents expressed that they did not know the waste is toxic. 71% of respondents who live in villages said they found out the waste contained toxics from Sihanoukville and radio broadcast. 21% of them who are dock workers said they heard from villagers at the dumpsite and radio broadcast. 8% of respondents who are officials said they know only from radio. The doubt remains that who exposed the issue? Maybe unidentified officials who did not receive fair amount of bribe told the newspaper.

The fear of toxicity intensified following repeated broadcasts on radio. Demonstrations occurred to protest the import of toxic wastes. About 1,000 protestors sacked the offices of the officials who were suspected of being responsible. Demonstrators damaged KAMSAP hotel because they were suspected of involvement in toxic waste import. The fear has doubled compared to the first days. According to Reuters, some 30% of residents of Sihanoukville have left the area because they are worried about the toxic waste. Some even believe it may be radioactive.

Table 4.1 Percentage of Family who Move Out and Did not Move Out

Respondents	Moving family out		Did not move family		Move some members in family	
Villager	3	19%	11	69%	2	12%
Port Workers	0	0	5	100%	0	0
Official	0	0	2	100%	0	0
Total	3	13%	18	78%	2	9%

Source: Field Survey, 1998

Among the respondents, 13% moved families out, 78% did not move and 12% move only some of their family members. Some people could not move out because they are poor, and have no clear destination. If they move, they will lose their jobs or their properties will be stolen. Villagers at this time are busy with their harvest so that they cannot leave their rice field behind. Another problem is that it is already too late to move out because they had touched the waste already. They are the victims because of other action. The corrupt officials benefited from the waste but villagers were victimized by waste. The people who can move their families are better off. The percentage of the family who did not move is high. The fact that people did not move does not mean they have tools or materials to protect themselves.

In Sihanoukville, most of the people are rich and better off and played a key role in daily business. These people reacted quickly to the situation. However, the surrounding villages are poor and depend for their living on the supply of fish, charcoal and fuelwood, vegetable to the markets. Since many people fled the city, the demand for daily requirement has decreased and the market sellers' income has also reduced by 20-30%. Unlike in Sihanoukville, the people at the dumpsite tend to earn more since more military deployed near the dumpsite to do clean up. On the other hand, the port workers actually received monthly basis wages so that in the short term the impact is not appeared.

About 91% of the total respondents expressed that they did not get any support in terms of food, protective materials, medicine or care from the government, NGOs or businessmen. But 9% of total respondents get some assistance in the form of drugs. These people are those workers at the port in Sihanoukville. The drugs they received mainly from the clinic in the port.

Table 4.2 People Perception of Type of Compensation

Respondents	compensation		No Compensation		No Answer	
23	17	74%	4	17%	2	9%

Source: Field Survey, 1998

About 74% of the respondents requested compensation. 17% did not seek compensation and 9% did not even say. Among the people requesting compensation, 82% of respondents requested compensation from companies both Taiwanese and local because these companies caused the situation and these toxic materials come from Taiwanese company. 18% others say that the government must compensate the victims. If the government concerned about people, the waste cannot be imported to Cambodia.

Government must be responsible for the compensation. There are three types of compensation that people need from both the government and the Taiwanese company. About 47% of respondents request compensation in the form of money in order to use this money to buy drugs and improve business. Other 12% request compensation in the form of medicines for their health. Apart from that, 41% of respondents request for money and medicine. They expressed that the company both Taiwan and local companies must compensate to victims and the money must go to people.

The schools near the dumpsite and in the city were closed. According to respondents, all expressed that their children did not go to school since the beginning because they feared toxic waste. The teachers did not come to teach because some teachers lived far away from the school. In the villages, the school is located about 12000 m from the dumpsite so that the fear remains deep in their hearts. However, in town, although the school is not too close like in the village but the class are still not open. The children did not go to school due to fear. Some cases, the children were displaced to other areas and in the village, some children were also involved in collection of sacks. They are now sick.

2. Impact on Health

Two people died so far: one in Koki village and a port worker since the outbreak of waste issue. Five other people who were dock workers were reported to be seriously sick by Ministry of Health. In the three villages, there are also people who got sick but the team could not identify how serious they are. The villagers expressed that they were sick since they went to empty the rubble out of the sacks.

Both people died following acute vomiting and thirst. At the beginning, they felt tired, exhausted and then vomited. The one who lived and died in the village was bleeding through nose. The team cannot prove the death was due to toxic waste but the team just compared the symptoms of two cases and found similarities. Dr. Sok Pheng from the hospital that treated the dock worker told the public on TV that the death of dock worker had no connection to the waste. Similarly, WHO reported that test of blood and urine of dock workers and soldiers had proven normal. WHO finally concludes that none seems to have symptoms of poisoning. *delete*

The above conclusion is contradictory to the situation in the villages. According to commune authority, 139 villagers went to gather sacks and wastes to their houses and it is believed their health has been affected. Out of these numbers, 41 people were registered to have collected the sacks and wastes from Phou Theung village. The data from other two villages were not available at the time.

The table 4.3 presents the comparative study of symptoms of affected people at both village levels and port. At village levels, 75% of respondents went to gather sacks from the dumpsite. These people at present are reported to be sick. Although some of them are not seriously ill, they felt weak and exhausted since they went to gather sacks from the dumpsite.

At the seaport, there are 8 teams of dock workers (*kong*). Each team consisted of 39 workers. The respondents told that each team involved in loading the waste to the trucks. Thus, it is obvious that the wastes could affect all port workers. Unfortunately, the team no.6th as their turn was to clean up the ship is more serious than other teams. The finding shows that the people who have been sick and died are in team 6th.

Table 4.3 The comparative study of Symptoms by locations

Respondent	No. of people interviewed	No. of people affected		Comparative symptoms
Villager	16	12	75%	diarrhea, exhausted, tired, thirsty, skin disease, dizziness, throat pain, dry cough, belly pain, joint pain, irregular urinate and pain, lost appetite.
Port Worker	5	5	100%	dizziness, diarrhea, skin problem, exhausted, tired, blurred vision, pain in the lung, lost appetite,
Total	21	17	81%	

Source: Field Survey, 1998

The study shows that the symptoms are similar between the villagers and dock workers who were sick. 76% of the affected respondents said they never have such sickness before. They are sick as they described since they came back from direct contact with the waste at the seaport and the dumpsite. However, only 12% of the respondents said they have these kind of sickness before as well like diarrhea, cough, and so on but this differed from symptoms now. 12% others did not say any things about how they felt.

The study team still considered why villagers and dock workers say they are sick following the touch of toxic waste and why Dr. Sok Pheng declared on TV that the death of the dock worker had no connection to the waste. Surprisingly, how come WHO says none seems to have symptoms of poisoning from the urine and blood test of sick people. What we found in our study is completely differed from WHO and Dr. Sok Pheng declaration. The interesting thing is that, dock workers and villagers did not realize also that they have above symptoms of sickness because of the waste. However, two cases that triggered this issue for our team were the death of two pigs and many rats in Phou Theung and Chham Notream villages. The pigs died because the pig rooted in the pile of rubble wastes that the pig owner gathered from the dumpsite. He did not say whether he sold the pork. Another was that the rats nibbled the pile of sacks that another family kept inside the house. Later, he realized that the waste contained some poisonous elements, which killed the rats. Apart from the death of rats, his children were also sick because they played with the sacks. So, based on this, villagers made conclusion that people died and got sick because of the toxic wastes.

The table 4.4 shows that the percentage of people who used drugs by their own ways is high-65%. Among these people, 83% are villagers and 20% dock workers. Only 24% of

respondents approached clinic for the treatment of which villagers accounted for only 17%. However, the port carriers went to clinic more than villagers.

The affected respondents who treated themselves by their own ways say it is because they don't have enough money. Buying drugs and using them are the best cheapest ways they always did when they are sick. The people who approached the clinics mostly are better off. Some people in the villages use herbal medicine such as *Rainsap* to cure the diseases especially those did not have enough money.

Table 4.4 The Types of Treatment

Type of Respondents	No. of affected Respondents	Use of drugs by clinic advice		Use of drugs by their own		No treatment	
Villager	12	2	17%	10	83%	0	-
Port Carrier	5	2	40%	1	20%	2	20%
Total	17	4	24%	11	65%	2	12%

Source: Field Survey, 1998

At present, the villagers and dock workers are facing health problems and in the future maybe more and more people face health problems. If the water and soil contaminated, then of course, people there will be in real danger.

About 600 soldiers were involved in the cleaning up program. Although they dressed in protective clothing, some were not performed according to the regulation. They seem to have careless attitudes in the working times. As the weather is hot in the afternoon, some soldiers took off the clothing. When they come to stay in the temple near the village, their cloths may also contaminate the waste. Therefore, the wastes still exist around the dumpsite.

3. Economic Impact

Most villagers are farmers. They supplement their incomes through fishing, cut forest and selling in the villages. Most of the farmers sold their lands to companies. At present, they hire lands from the companies to farm and pay 20-30% for rent.

Table 4.5 Types of Activities for Villagers

Type of respondent	No. of respondent	Only farming		Farming and fishing		Forest and farming		Selling and mototaxi	
Villager	16	3	19%	4	25%	2	12%	7	44%

Source: Field Survey, 1998

From the table 4.5, 25% of respondents supplement income by fishing, 12% by making charcoal and wood for sale, and 44% by having small business in the villages and mototaxi drivers.

Since the waste was imported and dumped in Sihanoukville, people have been afraid of toxic waste and this has direct and indirect impacts on their day to day subsistence business. The direct impact is that the dock workers and villagers who were sick had used their money out of the business to buy medicines. Some of them forced their families to leave home for Phnom Penh and other places. This case has led to stop their family business for sometime. On the other hand, those who were sick could not make business smoothly.

Indirect impact is that the interaction in markets in both Sihanouk and Smat Deng slowed down. There were few buyers and sellers. People are scared to buy seafood because they suspect that more wastes were dumped in offshore. As people in the villages are also fishing, the price of shrimp decreased which could affect their living condition. The income declined 30% to 40% a day. In contrast, the sellers and mototaxi driver in the village near the dumpsite earned more than before since the militaries deployed there to clean up the waste. Each soldier received 20,000 riel per day from the government. They probably spent 5,000 to 10,000 riel a day. The people who cut the forest to make a living stopped doing this because the road was shut by dumpsite. The people who rely on cutting trees to make a living are afraid of crossing the dump place and at present they are not allowed to enter there.

The number of tourists has also declined rapidly. People said that, during the Christmas period, there was supposed to be more tourists, but since the rumor of waste dumped in Sihanoukville spread out, only few went there. The sharp decline of tourists has an impact indirectly on the businessmen from medium to small scales. The number of tourists accommodated in hotels reduced to 2-3 times compared to last year and year before last year.

The toxic waste affected the whole area of Sihanoukville. All types of people (rich, poor, medium, businessmen, government employee etc.) were affected by waste dumped in Sihanoukville. But the poor and the poorest, especially those live in the villages and dock workers are most affected from the toxic wastes.

4. Environmental Impact

The dumpsite is located in the upland in Sankat Betrang, Prey Noub District, Sihanoukville about 14 km from the main seaport Town. The estimated size of dumpsite is 70x60 m² about 1200-1500 m from villages. The waste was dumped in the watershed areas. This place was never used for dumping the wastes before. All villager respondents did not know who decided to dump the waste in this area. People were never consulted before the waste was dumped.

Before the military owned this land, but at present the land was sold to a local company. However, three villager respondents mentioned the names of who owns this land. They believed that there must be a deal between the owners of the land and the company, who imported the waste, otherwise the owners did not allow dumping the waste there.

The waste was dumped about 1 km from the water sources, 500 m from High way 4. The waste was dumped in the upland and based on the location, the waste can flow through water to downstream. There has been heavy raining 2 or 3 days after the waste was dumped in the area. People think that the rain caused some waste floating with water to fill the stream in the low lands. Apart from that, the main water sources that the villagers use originate from underground of the dumpsite. If the waste was absorbed into the ground and entered the underground water sources, it will be dangerous for a long times. At the eastern part of the dump, there is river and stream called Stung Tuksap and Phou Theung respectively.

The Phou Theung stream at the moment provides water source for some of the Phou Theung villagers in the upper part. The stream is situated very close to the dumpsite and people strongly believe that the stream could be contaminated by the toxic wastes. Moreover, people at the upper part of Phou Theung village still use the stream water for multi purposes. According to people, after they emptied the waste out of sacks, they washed the sacks and bodies in the reservoirs near the dumpsite. Some were reported to drink the water in that reservoir. In addition to that, some cleaned the sacks at the well in the village. Therefore, the fear of toxic waste contaminating the water is high. But, there has been no source confirm the water is free of the toxic waste yet.

In table 4.6 shows how people felt about the water quality. Among respondents including one monk and environmental official, 44% expressed that water could contain the toxic if they looked back from the beginning and took into consideration geographic areas. Out of this, 44% of respondents said they don't know yet because so far they still use water there and nothing has happened to the villagers and their families. Similarly, 11% of respondents claimed that the water is free of toxic but did not say why. They just explained that they did not see any changes at the moment.

Table 4.6 People Perception of Waste Impact on Water at the dumpsite

No. of respondent	Don't Know		Water contaminated		Water not contaminated	
18	8	44%	8	44%	2	11%

Source: Field Survey, 1998

The rice fields lie on the low lands. The rain water influxes into low land from the upland. If the water contain the mercury and other toxic elements, it will affect to rice lands. We have not known how the toxic affects the rice cultivation and the crop plantation.

Based on our study, the wastes remain around the dumpsite. Some were thrown in the water and some in the villages. Although the authorities persuaded villagers to bring it back, not all have reached the dumpsite. Most of respondents believe that the toxic elements like mercury will absorb into the soils. Absorption will be rapid probably in the rainy season. The rainfall will speed up the absorption process and further increase of absorption will lead to affect on the underground water.

At the moment, the clean up committee has intensified the collection works. Tools and materials have been used for speeding up the cleaning operation. Bulldozers and trucks move around to gather and put the waste into drums and containers. As a result, the dust may fly around into air. Therefore, the air surrounding the areas may be polluted by the waste.

CONCLUSION AND RECOMMENDATION

1. Conclusion

Based on our study, this toxic waste is not first time they imported to Cambodia, but it could be the third or fourth time already. The dumpsites of the wastes may be more than three places. The fear resulting from the dumping of toxic wastes remains deep among people. The wastes contained high toxicity, which is a hazard to health. The result of the test shows that a mercury content of 675 parts per million at least which is highly exceeded safety standards. The normal standard should be under 0.2 parts per million.

The import of toxic waste is an illegal action. This is against the environmental law of Kingdom of Cambodia. However, the gap of the law remains wide. What the law does is called for a subdecree on the prevention, reduction and control of air, water and land pollution. But until a subdecree is issued, no industrial practices, including importation and disposal of toxic waste, are illegal under the law.

The poor and the poorest are the victims of the illegal waste import action by corrupted officials and private companies of both Taiwan and Cambodia. The corruption is the mean of leading to import of toxic wastes and cause the disturbance of the society in the whole kingdom. The poor and the poorest are at the front edge, which the impacts hurt them before any other types of people in the society. They did not benefit but suffer by this action. The measures to rescue the victims out of the risk have not been put in place. About 139 families of the villagers gathered the sacks from the dumpsite and health is being affected. These people need help immediately.

The result of testing blood and urine of dock workers and soldiers who were sick by WHO really surprises many people. The question remains that how it could happen if the waste contains high toxicity.

Although the government did take action to clean up the waste, some rubble wastes hopefully remain existed. Some wastes were thrown into water and in the villages. The small rubble waste at the dumpsite will remain in the soil invisibly although they clean its up.

Alternative measures to assist the victims have not been applied for present and the future. So far, no organization has come to help people there. However, the victims must be compensated for present and future impacts. The money received from compensation by local and Taiwan companies must be used for the victims and reach the victims.

... really surprised many people
 WHO explained that
 their complaint may be caused by the
 contact of the waste men mercury

2. Recommendations

Immediate Action

- Immediate help in terms of health care must be started soon. Preventive measure is effective tool to help victims avoiding future risk.
- Set up a committee of NGOs and work out strategies for future help for the victims.
- Network with NGOs in Sihanoukville in toxic waste issue must be strengthened.
- Follow up on compensation

Future Action

- Further study of toxic wastes and its impacts should be conducted.
- Workshop or Public Debate on toxic waste should be organized. The concerned government ministries and other agencies must be invited to participate and share common concerns about the import of the toxic waste and how to avoid it in the future.
- Advise to government to issues the subdegree on air, water and pollution.
- Public support and pressure should be organized for the government to pass and implement the subdecree on toxic waste.

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APPENDIX

Questionnaires for preliminary study on dump site

Name: -----, Sex:-----, Village:-----, Commune:-----,
dependent's:-----

1. Livelihood and Social Issues

- Did you know before the toxic arrived?-----
I don't know () Know ()
- How many people affected by toxic waste?-----
- What kinds of affect-----
- Where are affect people?-----
- Do you know how many displaced people?-----
- Who support them to release the effect?
Government (), NGO (), Nobodies ()
- What kind of support?
Financial support (), Food support (), Material support ()
- Can you describe what change has been occurred ?-----
- Are you fear of this toxic ?-----, Why-----
- Do you have any suggestion to combat this problem?-----
- To whom do you suggest?-----
- Do you know how many displaced people?-----
- Do you expect compensation? Yes: No:
- Why do you need compensation?-----
- From whom do you need compensation? Government (), Company ()

- What kind of compensation do you request? Land (), Business (), Money (),
- Did your child go to school? Yes: No:
If no, why
- We hear that many people move out of resident and why don't you move?-----
- Do you have protected tools from toxic waste? Yes: No:
- Is the social situation will be improved in future?-----

2. Business

- What is your business?-----
- Where do you do your business?
- How far from the dump site to the nearest market?
- How toxic waste affects your business?-----
- Does toxic affect only in the nearby market place or the whole areas in Sihanouk Ville?
- Please tell use what factors make your business slow down?

Few buyers	()
People are fear of eating the food	()
Few visitors	()
Others	()
- How much do you earn daily at present and before?-----
Why
- Since your business is disturbed, how it has an impact on your family condition?
- Can you say what types of people are most affected by the toxic waste issues?

Rich people	()
Poor people	(),
Poorest people	()
Medium	()
Business people	()

Government employee

- Do you expect your business will be improved if they remove the toxic waste?

Yes: No:

Why?-----

- Does toxic waste affects your family business only or others people business as well?

Only my family

All

- Is there any increase of tourists coming to visit here?-----

3. Health

- What kind of disease occurred as a result of toxic dumping here?

- Have these kinds of diseases had before?

Yes , No

- How long people take to realize that these diseases are because of the toxic waste that dumped nearby there?

- Do you know these diseases by people here or who tell you that these diseases be cause of toxic waste?

- Can you tell us about the symptoms of the diseases?

- How people get sick?

Touching the waste

Drinking contaminated water

Eating food

- How many people get sick so far and how many already died by the toxic waste?

- What kind of treatment has been carried out? -----

- Who did treatment?

- Where do you treat this disease? Do you pay for the treatment? Yes:

If yes how much?-----, If no why-----

- Who bring to treat? -----
- Is this toxic affect your animals also-----, food:-----

4. Environment

- Is the dumping site located in the **high land** or low land?
- How big the size of dumping site?
- Before this place also was used as **dumpsite** or just used now?
- Who decided to use this place as **dumpsite**?
- Have they consulted people to use **this land** as dumpsite?
- Have they managed the dumpsite?
- For your opinion, the toxic can flow through water to downstream
- Is it water contaminated? Yes: No:
- How far from dumpsite to water sources?-----, villages:-----, military camp:-----, main road:----- and Kompong som-----
- Does people have wells for safe **drinking water**?
- Have you seen the fish died in the nearby water body?
- Does people buy or eat fish from **this water body**
- Do you still use water there? If yes, ----- --why: -----
if no, why-----and where do you take water for drink-----

-
- What types of this land used before:

Agricultural land ()
Forest land ()
Pasture ()

- Does toxic affect soil also? -----, why-----

and Whose lands are under dump site?-----

- If the toxic has a long term affect on land water, do you still stay in this place or you will move? -----
- Do you observe the toxic affects your rice:-----, Crops:-----
-----, and plants:-----
- What is the air quality? Please describe:-----