Annex 1
Community Profiles
Profile of Tomok Village

Tomok, a village located on the island of Samosir, is one of the main tourist attractions on Lake Toba. King Sidabutar’s tomb and the souvenir shops selling various local handicrafts are the main points of interest. Some local people have turned their houses into souvenir shops or inns/hotels in addition to the residence where they and their families live. Tomok is connected with other community centers by a ring road around the island and has a pier where a ferry with 50-vehicle carrying capacity serves as water transportation to Ajibata 10 trips per day. Besides, passenger boats with a capacity for 75 persons commuting between Tomok and Ajibata makes 11 trips daily. These passenger ferries also berth at the Sumbersari pier.

The agricultural sector remains the main source of livelihood (50%), followed by the tourism industry (40%), fishing (5%) and government employees (5%). Administratively, Tomok is made up of 4 hamlets: Sosorgalung, Sosortolong, Pardomuan, and Parluasan. The record from the 1999 census indicates a total population of 6,671, consisting of 638 families. Topographically, Tomok is hilly with 8 – 25% slopes.

The environmental problem that has long been identified as important in the community is water pollution in Lake Toba caused by the dumping of solid and liquid wastes directly into the lake. Other concerns raised by community members which add to the pollution problem include:

- Fish farming in baskets partially submerged in the water (karamba) has been growing rapidly in recent years. Small-scale operations are being undertaken by local fisherman and large-scale ones by foreign investors.
- Wastes dumped unscrupulously into the lake by boat hands as they are approaching the shore.
- Wastes from pig pens located along the river exactly behind the souvenir shops in the Pardomuan hamlet.

Water used by the community

The lake remains the main source of household water supply for the majority of the population (52%) and is used for drinking, cooking, bathing, washing, latrine flush and agricultural purposes. Spring water is the second in importance (43%), while others (5%) use a dug well or drilled well at a depth varying from 4 - 10 meters for ground water. The majority of the population of the hamlets of Pardomuan and Parluasan depend solely on the lake as their source of water. They complain of the decreasing quality of the lake water, as evidenced by some of them suffering from skin rashes after bathing in the lake, and when water is left standing overnight the next morning a slimy substance fills the bottom of the container, making it necessary for them to drain and wash their bathtub every day.
Those who take their water from the spring or from a dug well suffer water shortages during the dry season. If the dry season extends up to 3 months the spring and the well can produce water enough for drinking and cooking purposes only, and they have to walk a distance of 1.5 to 3 km. from the house down to the lake for bathing and washing.

Sanitation facility used by the community

Of the 4 hamlets in the village of Tomok, the community of Sosortolong hamlet has no latrines in use at all. Residents of the community defecate in the open and anywhere they want: in the garden, in the yard, in the drainage canal, etc. The local community admits that the prevalence of the diarrhea disease is high. In the other 3 hamlets during the last 5 years, the number of local community members who have built latrines with a septic tank has been growing with increased awareness about environmental sanitation. Before this, the population also defecated in the open and a term “roving toilet” refers to the pigs which eat the excrement as soon as it is discharged to the ground. Recently, the local government issued a ruling prohibiting owners from having their pigs stray around. However, the percentage of population of Tomok who defecate in the open is still considerably higher (70%) than those who use a latrine (30%).

Meetings in the community revealed that the economic condition is not the main reason why the people are reluctant to have their own latrine. Instead, the following factors are more important:
• The awareness about hygiene and environmental sanitation is still low.
• The difficulty people have in making water flow directly to the latrine.
• The geological conditions of the area with the massive rock formations does not allow people to dig a hole big enough even for the simplest pit latrine.

Those who have a latrine for themselves are not willing to share with their neighbors because water is not available at the latrine location, and therefore it is not properly cleaned after use. In the period of water shortage during the dry monsoon, the population goes back to their old habit of using the yard, the drainage canal, the river and the lake as the place for defecating, and they leave their latrines unattended.

Garbage handling by the community

Local people have a tradition of burning or dumping their garbage because there is still room in the yard to do so. Many others habitually throw away their wastes anywhere, including into the river, the drainage canal and the lake itself. This is because their awareness of the environmental sanitation is low, which is evidenced from their reluctance in using the garbage bins placed along the main road. Another problem is the heaps of garbage which was initially dumped into the lake by the passenger boats and the vegetable and sundries traders. The garbage is eventually fished out of the water voluntarily by the residents of Pardomuan hamlet and is now lying along the shoreline. The amount of garbage is beyond the capacity of the Cleaning Office garbage truck which operates on a twice-a-week cycle.

Tomok has two garbage disposal sites located at Sosortolong hamlet. One of the disposal sites has caused problems to people living nearby because of the smoke produced when burning it, and also during the wet season when liquid from partially decomposed materials flows down to the community homes. This matter has been brought to the attention of the responsible government agency, and the officer in charge has promised to look for an alternative disposal area.
Community Profile of Parapat Town

Parapat, a sub-district town, is considered the center of the tourist industry and the main center of social and economic activities taking place on Lake Toba. The entire town is categorized as an ‘urbanized area’ which is called ‘Parapat Town’ and is home to at least 40 large and small hotels. Land use is dominated by tourism related businesses, such as hotels, restaurants, kiosks and souvenir shops. Parapat has one public pier for passenger ferries at Tigaraja and serving 11 trips per day to Tuktuk on the island of Samosir. Hotels along the shoreline have their own piers and are used exclusively for the guests of the respective hotels. Parapat is located on the main road connecting it with other towns and residential communities around Lake Toba.

Administratively, Parapat is part of the Girsang Sipangan Bolon sub-district, District of Simalungun, and is located on the mainland of Sumatra. The town covers an area of 1,477 hectares with a population of 7,751 and includes two villages (Kelurahan): Tigaraja and Parapat. Topographically, Parapat is located in an undulating area with slopes ranging from 8 – 45%. The road network of the town is in a spiral pattern which conforms to the sloping landscape.

Tourism is the main source of livelihood for the majority of Parapat’s population (75%) consisting of hotel owners and employees, restaurants, souvenir shops, boat and water bicycle rentals, straw mat rentals, etc. Approximately 15% of the population works in a business sector not directly related to tourism, such as those who trade in sundries and agricultural commodities at the busy and crowded Tigaraja market. The remaining 10% work in various sectors such as fishing, government, etc.

The main environmental problem identified by the community is finding an immediate solution to the liquid waste from the households and businesses which is almost entirely channeled directly into the lake or into open canals, rivers and gutters.

Water used by the community

Almost all of the households and the hotels (99%) are using the services of PDAM (municipal water supply), especially for drinking and cooking purposes. The PDAM Tirtanadi Parapat Branch is located in Parapat. For reasons of economizing, and because the quantity of PDAM water is insufficient, most of the households and hotels use water from the lake for bathing, washing and toilet flushing. In general, the community considers washing directly in the lake as more practical because the clothes become clean after only one rinsing.

Besides PDAM users, a small community consisting of 10 families at Lumban Sirait take their water from a spring, while 5 families at Tigaraja depend solely on the lake water for all their household needs.

Long-time residents of the community claim that the quality of water in Lake Toba is not as good as it used to be and some of the visitors complain of itchy skin after bathing in the lake. However, this does...
not discourage the visitors from enjoying the lake for swimming and bathing. In addition to enjoying the beautiful scenery, this is one of the main reasons why domestic tourists visit the lake.

Sanitation facility used by the community

A majority of the households and hotels (70%) use toilets with a septic tank. But kitchen and bathroom “grey water” wastes are still channeled directly into drainage ditches, rivers and eventually into the lake. The exceptions to this are two big hotels, the Siantar Hotel Parapat and Natour Hotel plus 15 households which have subscribed to the IPAL services. The remaining (30%) use indoor toilets, but their other wastes, liquid or otherwise, are channeled through the gutters down to the river and eventually to the lake. The local government has made available public lavatories built along the tourist area which can be used at a fee of Rp 500.

The Direcorate General Cipta Karya, Ministry of Public Works handed over operation of the IPAL Parapat/Ajibata facility to the PDAM Tirtanadi Parapat Branch in early 2000. As of July 2001, it has only 17 users. According to PDAM personnel, running the IPAL collection and treatment facility would cost PDAM approximately Rp 8 to 9 million a month for the electricity alone. These expenses far exceed the current income of approximately Rp 200,000 - 300,000. The socialization of the installation within the local community was done only once by PDAM together with Directorate General of Cipta Karya at the Natour Hotel prior to the inauguration. They promised those in attendance that the connection to the homes would be made free of charge and that the subscribing household would only be charged a monthly fee of Rp 4,000. In fact, the Head of Tirtanadi Parapat Branch issued a notice in April 2000 listing the costs for connecting to the service with different subscriber categories depending on whether it was a household, business entity, government agency or hotel.

Garbage handling by the community

When compared with other locations within the project area, Parapat is the best in handling its garbage. Aside from burning and burying, most of the population was accustomed to wrapping their household garbage in plastic bags and putting it into garbage bins or containers along the main roads. However, this is not the common practice for public places. The awareness of visitors in keeping the lake clean is still low as evidenced by the fact that they often unscrupulously throw their wastes anywhere. This is made worse by the limited number of garbage bins in the main tourist locations.

The owners of the straw mat rental businesses voluntarily collect the wastes strewn by the visitors into piles of garbage, but none of this is carried to the bins where it can be collected. Since the Cleaning Office employees only take care of the bins along the main roads, piles of garbage accumulated everywhere in places away from the main roads. The uncollected garbage is then burned, and the partly charred remains leave an unpleasant sight for the locality. Each straw mat rental owner is levied an amount of Rp 1000 per week to cover the costs of cleaning the area.

The collecting of garbage from the bins is done on an irregular basis, from 1 to 3 times a week. If the collection is late, decomposing materials in the bins begin to produce an unpleasant smell. Aside from emptying the garbage bins, the Cleaning and Parks Office employees are also responsible for sweeping and collecting garbage from the main roads of Parapat. The kiosk and straw mat rental owners would like to see that the Cleaning Office employees not only collect the garbage from bins or containers, but also collect the garbage piles along the shore. The garbage collectors have a lot of difficulty in transporting the piles of garbage because the locations are scattered and far from the main roads. Indeed, to do so requires extra effort.

Annex 1: Community Profiles
Community Profile of Ajibata

Ajibata is one of two sub-districts, the other being Parapat, considered as the center of social and economic activities around Lake Toba. Although not as densely populated as Parapat, part of the land area of Ajibata beginning from the shoreline to 250 meters uphill can be categorized as an ‘urbanized area’ and is called ‘Ajibata Town’. Administratively, Ajibata belongs to the Toba Samosir District and is located on the main island of Sumatra. A pier for a ferry boat that can carry at least 50 vehicles is the main transportation facility that connects Ajibata with the island of Samosir. Another pier is for passenger ferries and serves various destinations on Lake Toba. Ajibata also houses the main IPAL (wastewater treatment plant) for the towns of Parapat and Ajibata. There are nine villages in the Ajibata sub-district, but only two villages, namely Parsaoran (725 Ha) and Pardamean (950 Ha), were included in this project because they form Ajibata Town (1,675 Ha) and have most severe environmental problems.

Trading is the main livelihood for the majority of the population (60%), followed by agriculture (20%) and fishing (10%). The remaining 10% of the population are in government employees or other businesses. Based on the 1999 census, the total population of Ajibata is 2,577 persons or 492 families. The topography undulates with slopes ranging from 0-45%.

The community identified several environmental problems that require immediate action: disposal of household garbage and wastes from the market and boat operations; treatment of wastewater from the houses that discharge directly into the river or the lake.

Water used by the community

The majority of the population of both Pardamean and Parsaoran villages (91%) use piped water from PDAM for drinking, cooking, bathing and toilet flushing. Except for a small community of people (7%) who live illegally in front of the ferry pier and depend entirely on the water from the lake for their household activities, including drinking and cooking, the lake water is only used by the general community for washing purpose. The PDAM users consider the lake water as not worthy of drinking because it is too polluted by garbage and waste thrown into the lake by the traders in the market and by the boat passengers. Another source of water is a spring which regretfully is not properly protected to prevent contamination by wastewater.

Sanitation facility used by the community

Most of the population (89%), except the illegal squatters living in front of the ferry pier, uses a latrine. Having no latrine, the latter residents defecate anywhere in the open, including the yard, bushes, water gutters or even directly in the lake. In this small community, the prevalence of diarrheal disease is relatively high.
There is one public latrine around the passenger pier, but it is not used because the public is not aware of its existence, flush water is not available, and no one is assigned to maintain it. Six other public latrines were built along the shoreline for the tourists, but they do not function since only a few tourists come to this area.

During the community inventory, community members gave the following reasons for not having or building a latrine: lack of awareness regarding hygiene and sanitation; beyond their economic capability to build a private latrine; and living in a rented house where the owner is not willing to build a latrine.

**Garbage handling by the community**

Approximately 80% of the population has turned the area under the bridge and Haporsahan River estuary into a garbage disposal area which makes the area look dirty and smell bad. Garbage is also thrown into ditches in front of their houses. The clogged ditches not only produce unpleasant odors but spread several kinds of disease.

On the day after market day (Saturday), the passenger pier is littered with garbage because there is no container available. In addition, the traders and boat passengers lack awareness regarding personal hygiene and environmental sanitation. The unpleasant condition is aggravated by the failure of the Toba Samosir government to make garbage trucks available. The organic garbage produced by the households located far from the main roads is buried or burned by residents.
Profile of Porsea Town

Porsea, a sub-district town in the Toba Samosir District, records the next highest rate of social and economic activities next to Balige. Situated on the bank of the big Asahan River, the outlet of Lake Toba, Porsea lies on the main road between Parapat and Balige, the capital of Toba Samosir District. Since it is not located directly on Lake Toba, all of the social and economic activities are undertaken by way of land transportation.

Covering an area of 525 hectares, the town of Porsea consists of three villages: Pasar Porsea, Patane III and Patane IV. Pasar Porsea is the business center of the town; its land use is dominated with commercially related entities such as shops with residence, storehouses, warungs and market place. Almost all of the population in the business center is related to the business activity. The Indorayon mill is located in this town, about 4 kilometers from the business center. A greater portion (60%) of the Patane III community also works in the trading industry; the rest are farmers. In Patane IV village, almost all of its population is in the agricultural sector. Topographically, Porsea is located on a plain of 0-3% slope.

The environmental problem that calls for immediate action consists of the household garbage and the wastes from market activities. The dirtiest among all is the business center. Garbage is piled up on the sides of the main road and is not collected. The water canals, the River Aek Mandosi and the area under the main bridge of Asahan River are filled with garbage. Almost all of the existing water canals are not functioning properly because of the garbage. This condition is aggravated with the human waste, which is also channeled directly into the canals and rivers.

Water used by the community

A majority (62%) of the population uses the PDAM (municipal water supply) service, 28% use dug wells and 10% depend entirely on the water from the Asahan River. All of the households in the business center (393) are PDAM customers, 33 households in Patane III and 8 in Patane IV village. In the latter village, three PDAM reservoirs were built for the local community to help them solve their need for water. Unfortunately, these reservoirs are now abandoned because no one is assigned to manage them. Dug wells at an average depth of 3 meters are found in the Patane IV village and the users of river water are also from the same village.

According to the customers, the amount of water supplied by PDAM is sufficient, but they complain about its quality - the water becomes murky during the rainy season. During the dry season many of the dug wells become dry, too, and the owners have to walk a distance of about 1 km to fetch water from the river or to some other well which still has water in it.
Sanitation facility used by the community

Only 17% of Porsea residents use a latrine with a septic tank. In Patane III village there are 4 communal septic tanks for use by 44 households. These were built by the local government as a pilot project to solve the sanitation problem. Private septic tanks are built individually by the community members of the Porsea business center who have adopted better hygiene behaviors. A relatively big portion (49%) of the community have a private latrine in their homes, but unfortunately, they are built for reasons of privacy only, since the wastes are flushed down directly to Aek Mandosi River or to ditches in front of their homes and eventually down to the Asahan River. The remaining 34% defecate in the river, ditches, backyard or the garden.

According to the information collected during this project, those who do not equip their latrine with a septic tank are not aware of the need to keep the environment healthy and they don't care about it. They also think that building a septic tank is expensive.

Garbage handling by the community

The area in Porsea with the least environmental problems is Patane IV village, because most of their garbage (90%) consists of organic wastes which they process into compost. On the other hand, the business center community uses Aek Mandosi and Asahan River as their disposal area. Even the ditches and gutters along the roads are filled with garbage. A number of garbage bins along the roads remain empty while garbage is scattered everywhere near the bins. The awareness and willingness of the community to work together to keep the environment clean is apparently very low.

The employees of the cleaning service only pick-up garbage from the collecting points (TPS) along the main roads of Porsea three times a week and from Patane III village twice a week. Community members are levied an amount of money for the cleaning service at a monthly rate of Rp 2,000 for households and Rp 3,000 for businesses, but people do not believe that this money is used properly because the employees of the cleaning service are not able to keep the surroundings clean.
Profile of Balige Town

As the capital town of Toba Samosir District, Balige records the highest social and economic activities of all the places around Lake Toba. The District level government offices such as the Bupati, Bappeda, PDAM Tirtanadi branch, etc. are located here. Balige is situated on the main road between Parapat and Tarutung, one of the social and economic centers in the Province of North Sumatra and the capital of North Tapanuli District. Balige has a pier for passenger and cargo boats that serve water transportation to Onan Runggu on the island of Samosir. The town covers an area of 3,850 hectares and consists of 7 villages. Only one village, Lumban Silintong, was included in this project because it was selected as an exemplary tourist village, and as a result, is a place where environmental problems must be anticipated and handled as early as possible.

The agricultural sector is the main source of livelihood for the majority (60%) of the population of Lumban Silintong. The rest work as fishermen (20%) and in the tourism industry (10%). According to the 1999 census, the population of Lumban Silintong is 712 persons or 165 families.

Topographically, the village is on a plain with 0-3% slope, except a hilly portion along the shoreline, which is used as a C-type quarry by the local community.

The environmental problems that call for immediate action include proper disposal of household garbage and environmental sanitation.

Water used by the community

Although PDAM (municipal water supply) is in operation in Balige, only those who live in the center of the town enjoy its services. Many doubt if PDAM really does treat the water because the product exhibits almost the same characteristics as the water from the lake where PDAM withdraws its raw water. In Lumban Silintong, only 11 PDAM customers use the service.

Water for the majority of the population (60%) comes from 3 unprotected springs. In addition, 27 units use deep wells (24%) and the remainder use lake water (6%). According to the population, the total discharge from the springs covers the need of the entire community, although on rainy days it becomes a bit murky, and in the dry season, only one of the three springs produces water. People in the community of Binanga depend entirely on the lake for drinking, bathing. Many of them raise water buffaloes, and they wash their animals in the lake at the same time that they bathe themselves.

Sanitation facility used by the community

During community meetings, people expressed concerns about the personal hygiene behavior of people living in Lumban Silintong. The community inventory found that almost all residents (90%) defecate in the open and only 10% use a latrine. A large proportion (40%) do so in the yard or
garden, 25% in the rivers or open canals and the remaining 25% directly into the lake. However, according to the local population, the occurrence of diarrhea disease is relatively infrequent. The residents themselves are most concerned about the unpleasant odors and swarming flies.

The lack of the community’s awareness about personal hygiene behavior is due to their ignorance of the importance of using a latrine and to their very low level of basic education. In addition, their economic resources are very limited.

The local government has put an effort toward these conditions through construction of one public toilet in the village and several others at Binanga area for the sake of the tourists. Since there is only one public toilet for so many community members, they have to wait in a queue.

The reasons for those who do not have or have not built a latrine: lack of awareness on environmental sanitation; it is beyond their economic capability to build a private latrine; or they live in a rented house that the owner is not willing to build a latrine.

**Garbage handling by the community**

In general the community dispose of their garbage by burning or burying it. But there is still a lot of garbage thrown directly into the lake (40%) and river (20%) so that the exemplary tourist village Lumban Silintong still looks unpleasantly dirty. In addition to the low awareness of the community about personal hygiene and environmental sanitation, the garbage truck of the Cleaning Office does not operate in this village. The community has tried to solve this problem through voluntary communal activity to clean the roads, organized by the village level government.