7. Environmental Social Research

7.1 Environmental Impact Assessment (EIA)

7.1.1 Environmental Social Condition

(1) Natural Environment

Climate

Bandung, the capital of West Java province, is a mountainous climate and has rainfall throughout the year. From June to September, comparatively, there is less rain, and temperatures rise to near 30°C.

In 2008, annual precipitation of Legok-Nangka project site was 2,001mm, and the mean annual temperature was 23.1°C (maximum 28.6°C and minimum 19.4°C). Wind blow was about 1.0 m/s, and the wind is dominated by the wind coming from West.

As Nambo project site, the mean rainfall between 1998 and 2007 was 1,771mm and the mean temperature was 28.1°C (maximum 32.8°C and minimum 23.7°C). Wind blow was less than 0.3 m/s.

Geographical and geological features

Legok-Nangka project site is located on the hill. The north side has a high altitude, and the hill falls toward the south. Its drade exceeds 20% in some part. The altitude is lowest in southern tip (about 940m) and the highest in Northeast part (about 1,100m). This hilly area is consisted of volcanic rock or pumice tuff. General condition of Lecok-Nangka project site is shown in Figure 7-1.

Most area of Nambo site is comparatively gently undulating hill. However the grade is reach 30% in some part, average is 3%~15%. From east to southeast, there is roughly undulating land. Its grade is mostly more than 15% but 40% in local. The altitude range is between 170~250m, and the hill falls from southeast to northwest. Most area of the site is consisted of marl include calcareous phenocryst sandstone and clay shale. And, slope in the Southeast area (its gradient is 20~24%) is consisted of limestone, marl, and quart sandstone. General condition of Nambo project site is shown in Figure 7-2.

Conservation area

Both project sites are outside of conservation area, and neighboring regions are not conservation area.

Rare Species

According to existing EIA, there is no validation of inhabitation or growth of rare species around both project sites.

Disaster records

The planned sites are the area where flooding is not occur.

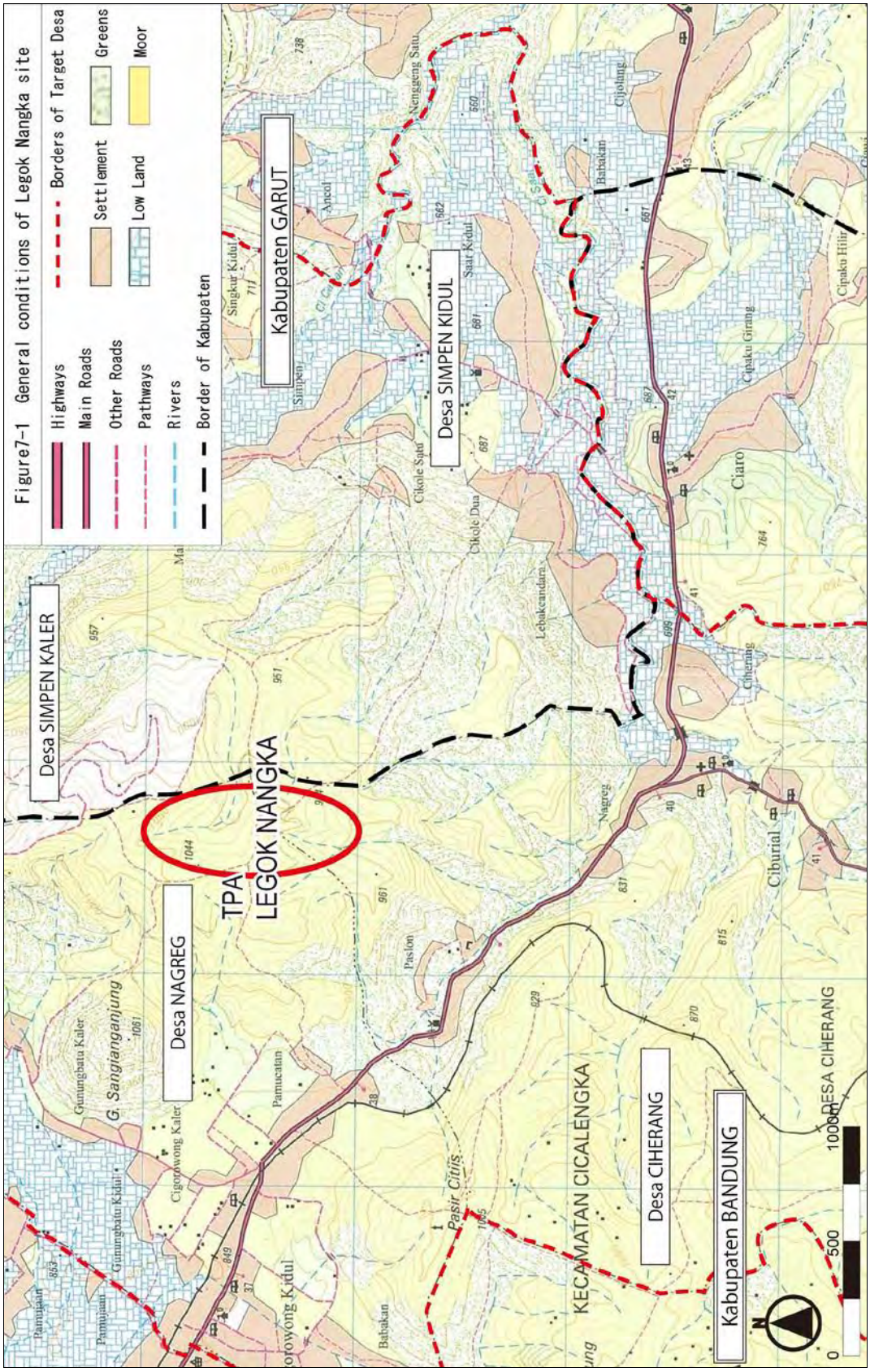


Figure 7-1 General Condition around the Project Site of Legok Nangka

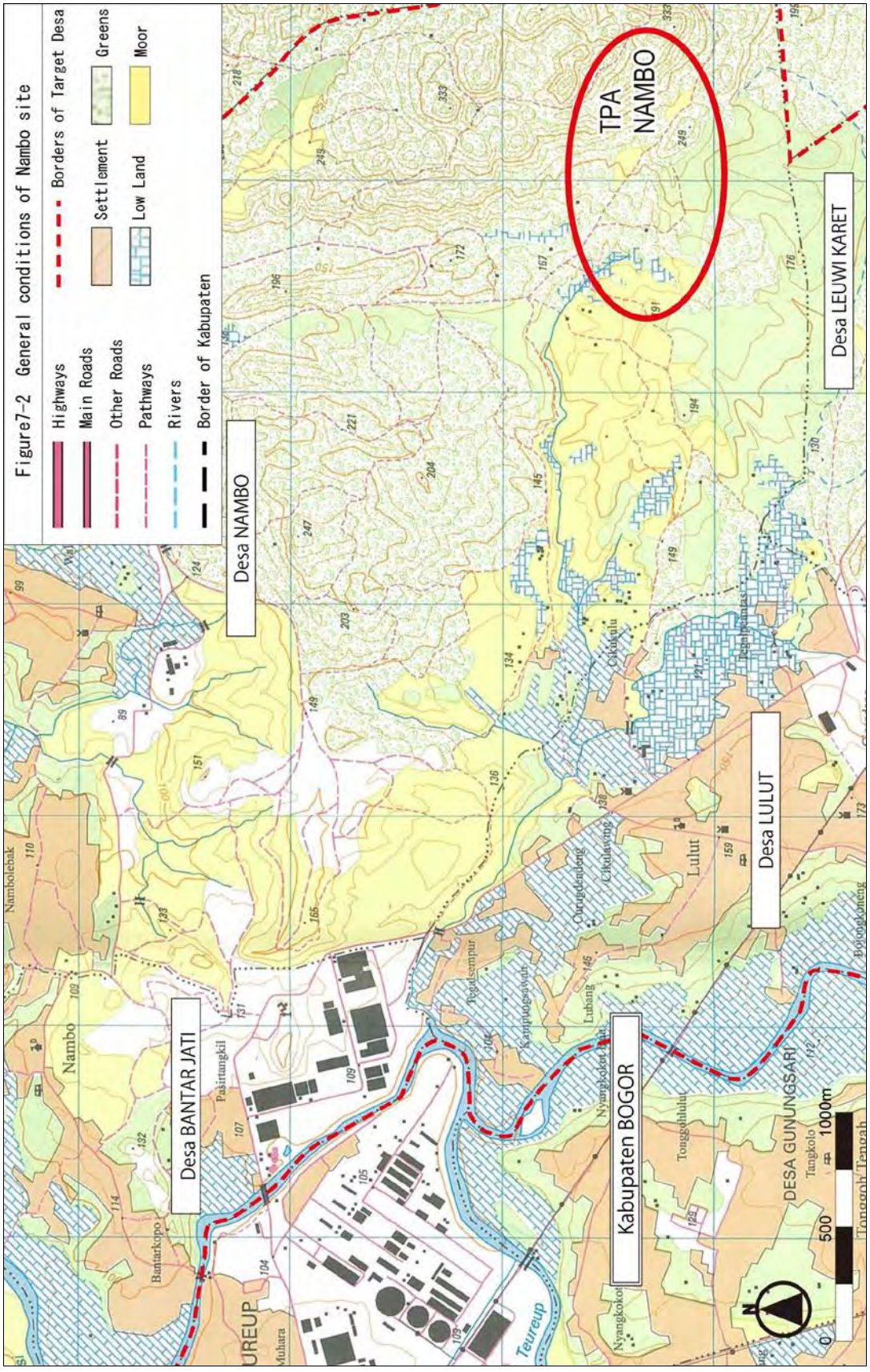


Figure 7-2 General Condition around the Project Site of Nambo

Water Supply and water quality

In the area of Legok-Nangka project site, there are no large rivers but many small streams which have seasonal change of its flow volume. The southeast side of site has Cipancar River water system, and tributaries flow into Cipanvar River near the border of Desa Cijolang and Desa Cigagade, Kab. Garut. Water from the project site flow into Cadasgantung River and meet with Cipancar River via Cisaat River. Therefore, water quality was researched at Cafadgantung River (Point 1) and Cipancar River (Point 2).

Since settlements around the site use spring water as day life water, spring water quality was checked as ground water quality.

Sampling points are shown inFigure 7-3, and result was shown in Table 7-1.

TSS and BOD in Point 1 and spring water and TSS in Point 2 exceed the environmental standard (II), however, others are below the standard. Therefore, quality of water surrounding the settlements is looks harmless and useable as day life water.

Since there are no huge differences between river water and ground water, there is currently little impact of living drainage.

Table 7-1 Result of River Water Quality Surveys (Legok Nangka)

No	Item	Unit	Environmental standards		Result (2011.4.12 water sampled)		
			(I)	(II)	Point1	Point2	Spring water
1	TDS	mg/L	<1,000	<1,000	126	116	38
2	TSS	mg/L	<50	<50	157	136	81
3	pH	-	6-9	6-9	7.4	7.5	7.3
4	BOD	mg/L	<2	<3	10.0	2.5	9.0
5	COD	mg/L	<10	<25	15.2	3.8	15.2
6	DO	mg/L	>6	>4	7.2	7.0	7.2
7	NO_3-N	mg/L	<10	<10	1.9	3.7	1.9
8	NO_2-N	mg/L	<0.06	<0.06	0.002	0.007	0.003
9	NH_3-N	mg/L	<0.5	-	0.56	0.56	0.56

* "Management of water quality and control over water pollution" (Government regulation No. 82, 2001)
(I) Water usable as non-treated drinking water
(II) Water usable as raw water of drinking water

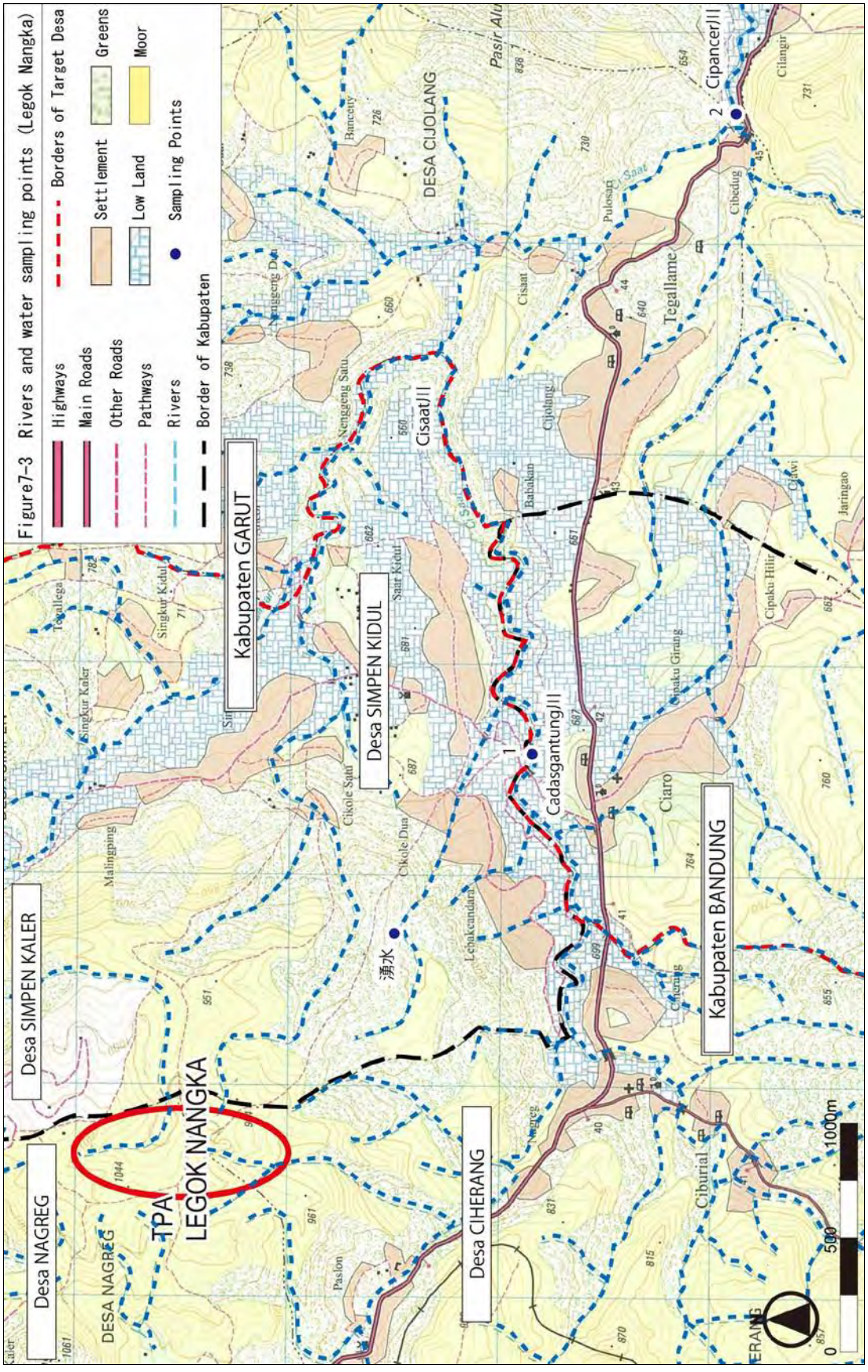


Figure 7-3 Rivers and Water Sampling Points (Legok Nangka)

The area of Nambo project site has Cileungsi water system, and there is its tributarie, Cijambe River. Nambo site is the source of it, and it keeps constant flow volume throughout the year. Cijambe River flows into Cileungsi River near the border of Desa Bantar Jati and Desa Lulut of Kab. Bogor. BPLHD West Java regularly operates a monitoring survey at upstream (M1) and downstream (M2) of Cileungsi River. Therefore, water quality of Cijambe River was measured at inside (Point 1) and outside (Point 2) of site.

Most of household in settlement around the site has a private well, and they use well water as day life water. Therefore, well water quality was checked as ground water quality.

Sampling points are shown in Figure 7-4, and result was shown in Table 7-2.

TSS, BOD, and NH3-N in Point 1, BOD in Point 2 and well exceed the environmental standard (II), however, others are below the standard. Therefore, quality of water surrounding the settlements is looks harmless and useable as day life water.

M1 fulfill the environmental standard (I), but TSS in M2 exceeds the environmental standard (II). Since other items are not different between M1 and M2, it is seemed that impacts from neighboring factories are very few.

Table 7-2 Result of River Water Quality Surveys (Nambo)

No	Item	Unit	Environmental standards		Result (2011.4.20 water sampled)			Monitoring of West Java province (Oct. 2010)	
			(I)	(II)	Point 1	Point 2	Well	M1	M2
1	TDS	mg/L	<1,000	<1,000	283	329	585	118	178
2	TSS	mg/L	<50	<50	102	3	<1	8	286
3	pH	-	6-9	6-9	7.2	7.3	6.8	7.1	6.2
4	BOD	mg/L	<2	<3	12.0	7.5	5.0	0.1	0.1
5	COD	mg/L	<10	<25	19.4	11.6	7.8	2.6	2.6
6	DO	mg/L	>6	>4	5.8	5.8	5.8	8.5	6.8
7	NO_3-N	mg/L	<10	<10	0.2	0.7	0.3	0.6	0.1
8	NO_2-N	mg/L	<0.06	<0.06	0.007	0.096	0.078	0.022	0.023
9	NH_3-N	mg/L	<0.5	-	1.18	<0.002	0.32	0.01	0.01

* "Management of water quality and control over water pollution"
(Government regulation No. 82, 2001)
(I) Water usable as non-treated drinking water
(II) Water usable as raw water of drinking water

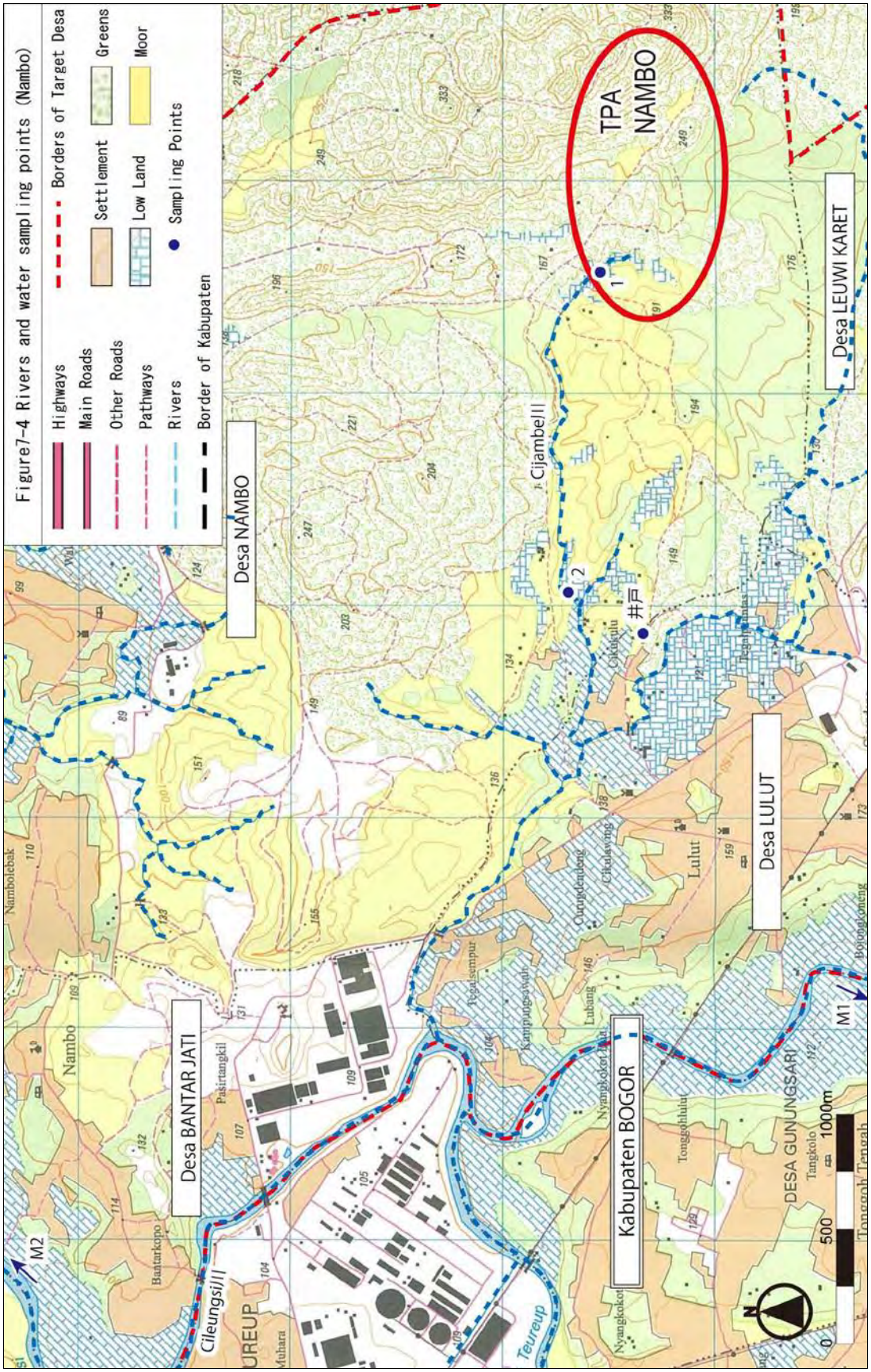


Figure 7-4 Rivers and Water Sampling Points (Nambo)

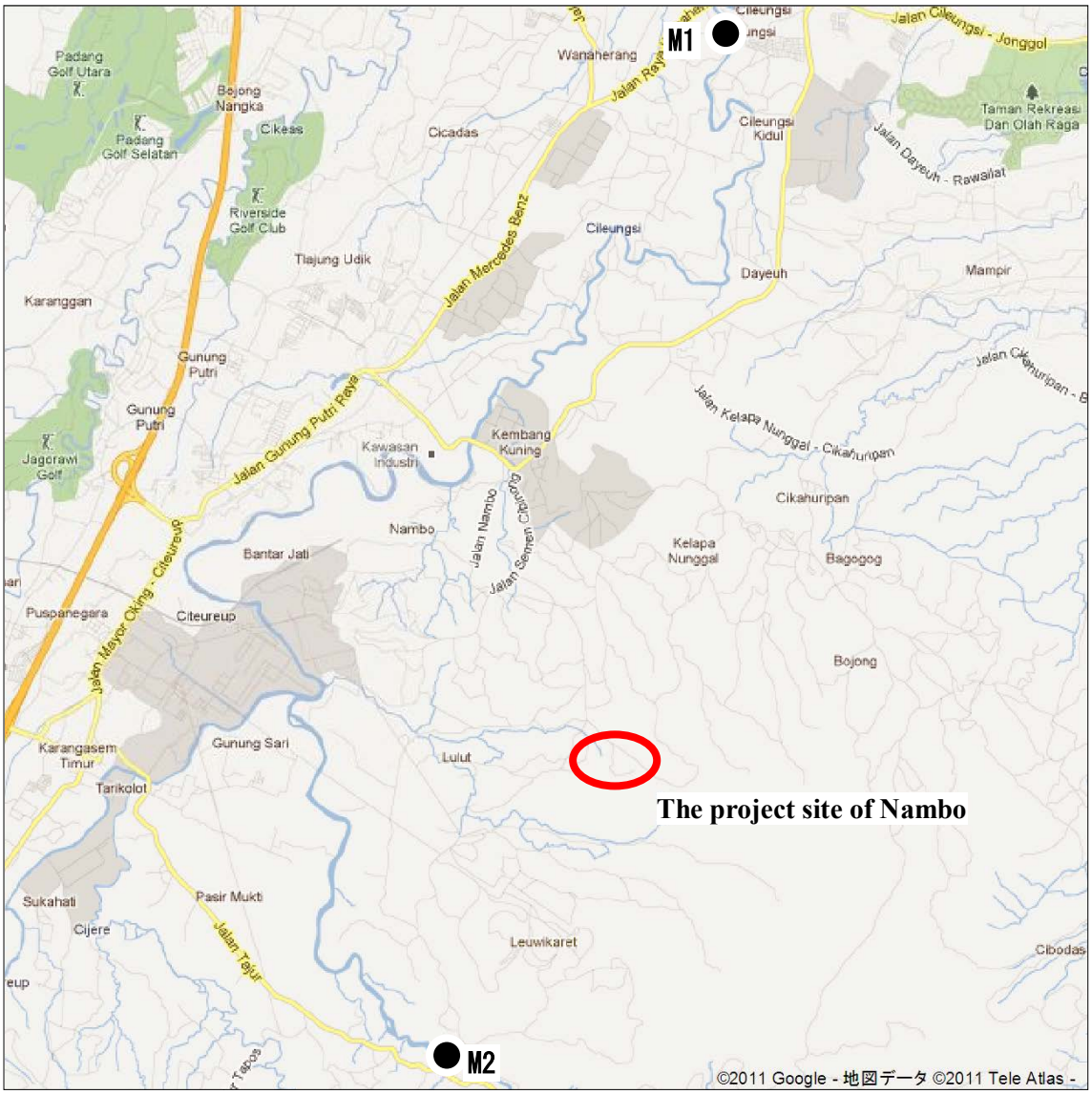


Figure 7-4(2) Sampling Points of Water
(Nambo: Monitoring Surveys by West Java)

(2) Social Economy

Legok-Nangka project site extends over Bandung prefecture (Kabupaten; Kab.), Nagreg district (Kecamatan; Kec.), Nagreg village (Desa), and Desa Ciherang. But, by considering the social economy and cultural environment, current status of 4 villages is listed include Desa Simpen Kidul and Desa Simpen Kaler, Kec. Balubur Limbangan, Kab.Garut.

Nambo site extends over Desa Nambo and Desa Lulut, Kec. Klapa Nunggal. However, by considering social economy and cultural environment, current status of 5 villages is listed include Desa Leuwi Karet, Desa Bantar Jatiby, and Desa Gunung Putri, Kec. Gunung Putri.

Population

The population, number of household, and population density of each village are shown in below.

Table 7-3 Population, Number of Household, and Population Density (2008)

Village	population			Area (km^2)	Population density (person/km^2)	No. of household
	Men	Women	total			
Desa Nagreg	4,860	4,715	9,575	5.23	1,831	2,690
Desa Ciherang	3,452	3,601	7,053	7.26	971	1,971
Desa Simpen Kidul	3,071	3,088	6,159	1.53	4,025	1,754
Desa Simpen Kaler	2,645	3,263	5,908	9.41	628	2,005

Table 7-4 Population, Number of Household, and Population Density (2009)

Village	population			Area (km^2)	Population density (person/km^2)	No. of household
	Men	Women	total			
Desa Nambo	4,519	4,323	8,842	10.14	872	4,500
Desa Lulut	6,769	6,171	12,940	2.27	5,700	3,415
Desa Leuwi Karet	3,306	3,038	6,344	2.65	2,394	1,533
Desa Bantar Jati	3,608	3,526	7,134	3.67	1,944	2,099
Desa Gunung Putri	5,983	6,579	12,562	3.73	3,368	2,375

Industry and local economy

In villages around Legok-Nangka site, the major livelihood is agriculture (including both independent and tenancy farmers), and then business and smaller business is after it. By villages, agriculture is more than 70% in Desa Ciherang, Desa Simpen Kidul, and Desa Simpen Kaler but less than 30% in Desa Nagreg. In Desa Nagreg, business, smaller business, and private enterprise occupy about 50%.

The business is the major livelihood in Nambo site, and employee of ordinary enterprise is after it. By villages, employee of ordinary enterprise is the major (more than 25%) in Desa Nambo, Desa Lulut and Desa Gunung Putri. However, in Desa Bantar Jati, factory worker is the major (more than 35%). In Desa Leuwi Kare, farmer is occupied about 50% and factory or ordinary enterprise worker is less than 10% each.

(3) Infrastructure

Land use

Legok-Nangka project site is mainly used as an agricultural land by local residents. Main products are cassava, corn, and bean. The nearest village is a northwest part of Paslon district of

Desa Ciherang, and it is about 1km away from the site. Village of Kab. Garut is about 1.2km away from the site.

Nambo project site is mainly wetland or shrub, and residents live comparatively far from the site.

Irrigation

Around Legok-Nangka project site, spring water is used as day life water. Culture pond also uses spring water of village by constructing channels such as a pipe.

Around Nambo project site, shallow wells are used as day life water in each household.

School and nursing home etc…

Around Legok-Nangka project site, Schools are in Cigorowong Kaler district of Desa Nagreg, Nagreg district of Desa Ciheran, and along the highway of desa Ciaro. Hospitals are in Nagreg district of Desa Ciherang and along the highway of Desa Ciaro. Location map was shown in Figure 7-5.

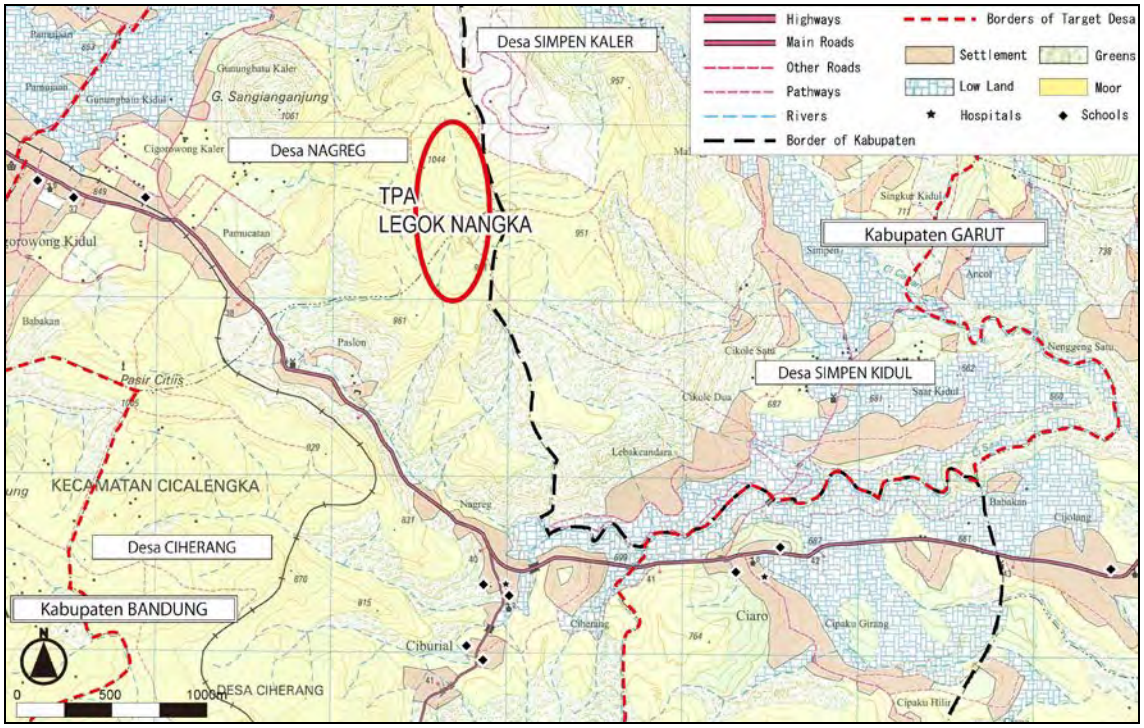


Figure 7-5 Schools and Hospitals (Legok Nangka)

Around Nambo project site, Schools are in Walahir district of desa Nambo, Bantarkopo district of Desa Bantar Jati, and lulut district of desa Lulut. There is no hospital.

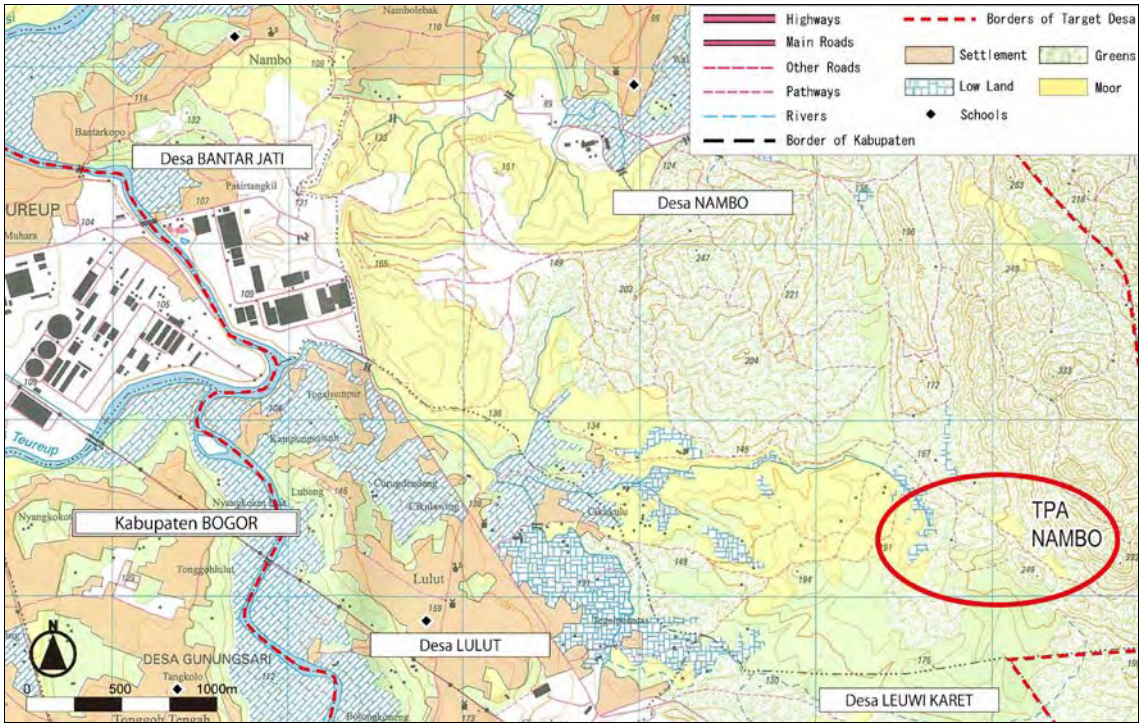


Figure 7-6 Schools and Hospitals (Nambo)

Road, transportation infrastructure

Surrounding area of Legok-Nangkasite has Cicalengka-Nagrek road extending southwest from Bandung. It divaricates at Nagreg district of Desa Ciherang, and the other road is toward to Garut. And railway was constructed along the road from Bandung to Yogyakarta.

Surrounding area of Nambo project site has a toll road which connects Jakarta and Bogor, and highways extend east and south from lump.

(4) Historical Landmark

Historical sites, Cultural heritages

Desa Nagreg has a historical site called “Site KENDAN”. It is about 1.5~2km away from project site. It is said the origin of Tarumanagara Kingdom as well as the Kingdom of Indonesia, but now, only hill with well-kept rocks is remain. Location map is shown in Figure 7-7.

Nambo site doesn’t have any historical sites or cultural heritags.

Ethnic minorities

There are no residential areas of minority group in both sites.

Figure 7-7 Ruins and Cultural Heritage (Legok Nangka)

(5) Scavengers

In existing disposal sites, there are many illegal workers called scavenger, and some of them are lived inside the site and moved to other site when their site is closed.

Site which is going to close in near future is Darimukti around Legok-Nangka project site and Cipayang and Galuga around Nambo project site.

State of scavengers who are in those sites is shown below.

Overview of research

Date: April-May 2011
Place: Within 3km away from each site.
(Legok-Nanka) Sarimukuti, (Nambo) Cipayung, Galuga
Number of people: 88 people in total (Sarimukuti: 30, Cipayung: 28, Galuga: 30)
Method: Distributing the questionnaires written by both Indonesian and English individually to the local residents and explaining the detail and collecting them.

Result of research

- The answers for questions, the reason for becoming a scavenger, prospect of future, or living environment, differ by village.
- Many scavengers live in the area within the range of 30 minutes on foot (about 2km), and some scavengers have a house outside of the site.
- Monthly income is around 600,000–1,500,000 (about 6,000–1,500 YEN), and monthly expense is around 600,000. There fore, household is roughly in the black, so people are not satisfied with their income but don't have dissatisfaction.
- The highest educational background of scavengers is elementary school (about 61%), but more than 10% of people graduate high school or more.

Table 7-5 Educational Background

	Sarimukti		Cipayung		Galuga		Total	
Elementary school	22	73.3%	7	25.0%	25	83.3%	54	61.4%
Junior high school	5	16.7%	16	57.1%	3	10.0%	24	27.3%
High school	2	6.7%	5	17.9%	2	6.7%	9	10.2%
College(dropout)	1	3.3%	0	0.0%	0	0.0%	1	1.1%
Total	30	100.0%	28	100.0%	30	100.0%	88	100.0%

- The most reason to be scavenger is "for living" which account for 3/4 of total. By adding up figures of "there is no other job", it is predicted that more than 80% of people became scavenger whether they like it or not.

Table 7-6 Reasons to be the Scavenger

	Sarimukti		Cipayung		Galuga		Total	
For living	14	46.7%	28	100.0%	24	80.0%	66	75.0%
No other job	9	30.0%	0	0.0%	0	0.0%	9	10.2%
Unemployment	6	20.0%	0	0.0%	1	3.3%	7	8.0%
Tuition	0	0.0%	0	0.0%	3	10.0%	3	3.4%
Flotation funds	1	3.3%	0	0.0%	0	0.0%	1	1.1%
Additional income	0	0.0%	0	0.0%	1	3.3%	1	1.1%
Insurance of business failure	0	0.0%	0	0.0%	1	3.3%	1	1.1%
total	30	100.0%	28	100.0%	30	100.0%	88	100.0%

- However, nearly half of people answered that they will move to other sites and continue scavenger when the site is closed. And more than 50 % of people answered that they will refuse offer from companies.
- In Cipayaung, everyone answered that they will look for other job, while 80 % of people in Galuga answered that they will continue to be scavenger.

Table 7-7 Future after Closing the Site

	Sarimukti		Cipayung		Galuga		Total	
Move to other site	14	46.7%	0	0.0%	24	80.0%	38	43.2%
Go to other site	0	0.0%	0	0.0%	1	3.3%	1	1.1%
Other job	3	10.0%	28	100.0%	1	3.3%	32	36.4%
Keep on own business	0	0.0%	0	0.0%	3	10.0%	3	3.4%
Returning home, and temporary farming	0	0.0%	0	0.0%	1	3.3%	1	1.1%
No plan	2	6.7%	0	0.0%	0	0.0%	2	2.3%
total	11	36.7%	0	0.0%	0	0.0%	11	12.5%

- Answer about the question, employment offer from companies, shows a close trend with the question about closing the site.
- While all residents in Cipayung answered they will accept these offer, 80% of residents in other 2 sites answered they will refuge these offer.

Table 7-8 Correspondence to Employment Offer from Companies

	Sarimukti		Cipayung		Galuga		Total	
Accept	24	80.0%	0	0.0%	26	86.7%	50	56.8%
Refuse	3	10.0%	28	100.0%	0	0.0%	31	35.2%
Depend on requirement	1	3.3%	0	0.0%	1	3.3%	2	2.3%
Permanent employment	0	0.0%	0	0.0%	2	6.7%	2	2.3%
Depend on site condition	1	3.3%	0	0.0%	0	0.0%	1	1.1%
Total	1	3.3%	0	0.0%	1	3.3%	2	2.3%

- 53% of people answered that they have no complaints about current living.
- In Cipayung, all people are unsatisfied about their job. It is seemed that most people became scavenger of necessity.

Table 7-9 Discontent with Current Living

	Sarimukti		Cipayung		Galuga		Total	
Securing of water	3	10.0%	0	0.0%	0	0.0%	3	3.4%
Shortage of food and money	1	3.3%	0	0.0%	0	0.0%	1	1.1%
Improvement of quality and quantity of waste prastic	0	0.0%	0	0.0%	1	3.3%	1	1.1%
Job	3	10.0%	28	100.0%	4	13.3%	35	39.8%
None	23	76.7%	0	0.0%	24	80.0%	47	53.4%
Unanswered	0	0.0%	0	0.0%	1	3.3%	1	1.1%
Total	30	100.0%	28	100.0%	30	100.0%	88	100.0%

- However, in Cipayung, number of people who work as scavenger for a long time is higher than other 2 sites. It is seemed that people are unsatisfied with the current status but don't have any improvement methods.

Table 7-10 Years of Scavenger Experience

	Sarimukti		Cipayung		Galuga		Total	
<1 year	6	20.0%	0	0.0%	0	0.0%	6	6.8%
≧1year, <5year	19	63.3%	2	7.1%	16	53.3%	37	42.0%
≧5year, <10year	4	13.3%	14	50.0%	13	43.3%	31	35.2%
≧10year	1	3.3%	12	42.9%	1	3.3%	14	15.9%
Total	30	100.0%	28	100.0%	30	100.0%	88	100.0%

- Compared with other sites, Cipayung has a high possession rate of domestic appliances and electricity or water supply.
- In Sarimukuti, there are families don't have any domestic appliances. By considering figure of unanswered, it seems that there are family don't have electricity supply.
- About 80% of household have TV, and more than 30% of household have DVD recorder. It seems that the living standard is not so low.

Table 7-11 Possession of Domestic Appliances

	Sarimukti		Cipayung		Galuga		Total	
TV	13	43.3%	28	100.0%	30	100.0%	71	80.7%
DVD	4	13.3%	25	89.3%	0	0.0%	29	33.0%
Refrigerator	3	10.0%	5	17.9%	0	0.0%	8	9.1%
Fan	2	6.7%	28	100.0%	0	0.0%	30	34.1%
Rice cooker	1	3.3%	0	0.0%	5	16.7%	6	6.8%
Radio	6	20.0%	0	0.0%	1	3.3%	7	8.0%
None	11	36.7%	0	0.0%	0	0.0%	11	12.5%

Table 7-12 Electricity Supply

	Sarimukti		Cipayung		Galuga		Total	
Supplied	15	50.0%	28	100.0%	30	100.0%	73	83.0%
Unanswered	15	50.0%	0	0.0%	0	0.0%	15	17.0%
Total	30	100.0%	28	100.0%	30	100.0%	88	100.0%

Table 7-13 Water Supply

	Sarimukti		Cipayung		Galuga		Total	
Supplied	0	0.0%	28	100.0%	0	0.0%	28	31.8%
Private well	9	30.0%	0	0.0%	30	100.0%	39	44.3%
Public well (Unknown)	1	3.3%	0	0.0%	0	0.0%	1	1.1%
Public well (<100m)	17	56.7%	0	0.0%	0	0.0%	17	19.3%
Public well (>100m)	3	10.0%	0	0.0%	0	0.0%	3	3.4%
Total	30	100.0%	28	100.0%	30	100.0%	88	100.0%

Table 7-14 Fuel

	Sarimukti		Cipayung		Galuga		Total	
Propane	2	6.7%	7	25.0%	23	76.7%	32	36.4%
Wood	5	16.7%	0	0.0%	0	0.0%	5	5.7%
Propane, wood	2	6.7%	21	75.0%	7	23.3%	30	34.1%
Kerosene	3	10.0%	0	0.0%	0	0.0%	3	3.4%
Unanswered	18	60.0%	0	0.0%	0	0.0%	18	20.5%
Total	30	100.0%	28	100.0%	30	100.0%	88	100.0%

- Things people wants are house, land, motorbike, and domestic appliances.
- In Galuga, it is minority opinion, but there are people who want scavengers that take a backseat of them or gavages grinder to promote in organization.

Table 7-15 Things People Wants

	Sarimukti		Cipayung		Galuga		Total	
Foods	4	13.3%	0	0.0%	0	0.0%	4	4.5%
Money	9	30.0%	0	0.0%	0	0.0%	9	10.2%
Store around house	0	0.0%	0	0.0%	3	10.0%	3	3.4%
House, land	12	40.0%	23	82.1%	6	20.0%	41	46.6%
Motor bicycle, domestic appliances	13	43.3%	9	32.1%	8	26.7%	30	34.1%
Jewelry	1	3.3%	6	21.4%	0	0.0%	7	8.0%
Scavenger	0	0.0%	0	0.0%	1	3.3%	1	1.1%
Plantation	0	0.0%	0	0.0%	1	3.3%	1	1.1%
Grinder	0	0.0%	0	0.0%	1	3.3%	1	1.1%
None	0	0.0%	0	0.0%	11	36.7%	11	12.5%

7.2 Institution of Environmental and Social Consideration and Organization in Indonesia

7.2.1 Law and Standard of Environmental Consideration

(1) Act of Environmental Protection and Management

The basic act of environmental protection is "Act of Environmental Protection and management, (No. 32, 2009)."

General provision and purpose is in Chapter 1 and Chapter 2, establishment of environmental management plan and environmental protection plan is in Chapter 3, use of environmental asset is in Chapter 4, and environmental management, the establishment of environmental standard or the implementation of environmental impact assessment, is stipulated in Chapter 5.

As the environmental standard, six items, water quality, drainage quality, sea water quality, general air quality, exhaust quality, and odor, and new item with scientific advances is prescribed by Cabinet order and Regulation of the minister. Because these regulations are based on the former act of environmental management enacted in 1997, it is expected to revise them in the near future.

In Article 124, "Act of Environmental Protection and Management", it is stipulated that all law and regulations which based on the old act of environmental management remain valid as long as not contrary to old act until new law and regulations stipulated under the new law.

Table 7-16 Classification of Legislation

Classification	Law and Regulations
Law	Act of Environmental Protection and Management (Law No.32, 2009)
Government Regulations	Government Regulations about Environment Impact Assessment (Government Regulation No.27, 1999)
	Government Regulations about Air Pollution Control (Government Regulation No.41, 1999)
	Government Regulations about Management of Water Quality and Control over Water Pollution (Government Regulation No.82, 2001)
Regulations of the Minister	Regulations about Waste Water Quality Standards for Industrial Activities (Regulation of the Minister of Environment No.51, 1995)
Regulations of West Java Government	Regulations about Waste Water Quality Standards for Industrial Activities in West Java (Regulation of West Java No.6, 1999)

Regulation of Water Pollution

As the basic regulation of fresh water environment in the Republic of Indonesia, "Government Regulations about Management of Water Quality and Control over Water Pollution" (Government Regulation No.82, 2001) is enacted based on Clause 2, Article 14 of the old act of environmental management.

<Environmental Standards>

The criteria of water quality are stipulated in Article 8 of the government regulation. In Article 10, it is prescribed that the quality standards of water are stipulated on the basis of criteria. In the present state, those criteria are operated as standards.

By based on its usage, the quality standards of fresh water environment classify water into four as listed below. And it defines maximum value of 68 items (pH: acceptable range, DO: Minimum value) which belong to 4 larger item, physical, chemical (organic and inorganic), microbiological, and radioactive, in each class.

Class I: Water usable as non-treated drinking water.
Class II: Water usable as raw water for drinking.
Class III: Water usable for fisheries and livestock industry.
Class IV: Water usable for agriculture, small-scale enterprise, industry, and hydroelectric power generation.

Physical and inorganic chemical standard of water quality are shown inTable 7-17.

Although article 12 of the government regulation states tighter standards and additional parameters by the provincial government, West Java government does not have relevant regulations.

<Effluent Standards>

The effluent standards intended for factories, hotels and hospitals are prescribed as waste water that is directly related to business activities in the emission standards under Article 21 of the government regulation, and "Regulations of the Minister of Environment about Waste Water Quality Standards for Industrial Activities" (Regulation of the Minister of Environment No.51, 1995) is applied as a standard intended for factories. However, the standards targeted at disposal sites and landfill sites have not been established.

In West Java, "Regulations about Waste Water Quality Standards for Industrial Activities in West Java" (Regulations No.6, 1999) is enacted based on Clause 2, Article 21 of the government regulation. Those regulations descript effluent standards for 21 of specific industries and other general factories. As the effluent standard of the central government, the effluent standards for disposal sites and landfill sites have also not been established in West Java. However, existing disposal sites and landfill sites apply "the effluent n standards for other general factories" under the regulation (Regulations No.6, 1999) in West Java as their standards. According to "the emission standards for other general factories," water treatment facilities are divided into 2 classes. The standard value of class I which has advanced facilities is tighter than it of class II which has simple facilities.

The emission standards for the other general factories are shown inTable 7-18.

Table 7-17 The Quality Standards of Water (Physics and Inorganic Chemistry)

Items	Units	Class				Remarks
		I	II	III	IV	
Physics						
Temperature	°C	±3			±5	Range oftemperature deviationfrom its natural state
TDS	mg/L	1,000			2,000	Maximum value
TSS		50		400		Maximum value
InorganicChemistry						
pH	-	6-9			5-9	Range
BOD		2	3	6	12	Maximum value
COD		10	25	50	100	Maximum value
DO		6	4	3	0	Minimum value
PO_4^{3-} as P		0.2		1	5	Maximum value
NO_3 as N		10		20		Maximum value
NH_3-N		0.5	-			Maximum value
As		0.05	1			Maximum value
Co		0.2				Maximum value
Ba		1	-			Maximum value
B		1				Maximum value
Se		0.01	0.05			Maximum value
Cd		0.01				Maximum value
Cr(VI)		0.05			0.01	Maximum value
Cu		0.02			0.2	Maximum value
Fe		0.3	-			Maximum value
Pb		0.03			1	Maximum value
Mn		0.1	-			Maximum value
Hg		0.001	0.002		0.005	Maximum value
Zn		0.05			2	Maximum value
Chloride		600	-			Maximum value
Cyanide		0.02			-	Maximum value
Fluoride		0.5	1.5		-	Maximum value
NO_2-N as N		0.06			-	Maximum value
NO_3-N		400	-			Maximum value
Chlorine free		0.03			-	Maximum value
H2S		0.002			-	Maximum value

* '-' means no standard required.

Table 7-18 The Quality Standards of Waste Water from Other Factories (West Java)

Items	Units	Class		Remarks
		I	II	
Physics				
Temperature	℃	38	48	Maximum value
TDS	mg/L	2,000	4,000	Maximum value
TSS		200	400	Maximum value
Inorganic Chemistry				
pH	-	6.0 - 9.0		Range
Fe	mg/L	5	10	Maximum value
Mn		2	5	Maximum value
Ba		2	3	Maximum value
Cu		2	3	Maximum value
Zn		5	10	Maximum value
Cr(VI)		0.1	0.5	Maximum value
Cr		0.5	1	Maximum value
Cd		0.05	0.1	Maximum value
Hg		0.002	0.005	Maximum value
Pb		0.1	1	Maximum value
Sn		2	3	Maximum value
As		0.1	0.5	Maximum value
Se		0.05	0.5	Maximum value
Ni		0.2	0.5	Maximum value
Co		0.4	0.6	Maximum value
CN		0.05	0.5	Maximum value
H2S		0.05	0.1	Maximum value
F		2	3	Maximum value
Cl2		1	2	Maximum value
NH3-N		1	5	Maximum value
NO3-N		20	30	Maximum value
NO2-N		1	3	Maximum value
BOD		50	150	Maximum value
COD		100	300	Maximum value
MBAS		5	10	Maximum value
Phenol		0.5	1	Maximum value
Vegetable Oil		5	10	Maximum value
Mineral Oil		10	50	Maximum value

* The levels of waste water are not allowed to be achieved by dilution with water directly taken from water sources.

Regulations of Air Pollution

As the basic regulation of air environment in the Republic of Indonesia, "Government Regulations about air pollution Control" (Government Regulation No.41, 1999) is enacted based on Clause 2, Article 14 of the old act of environmental management (Law No. 23, 1997).

<Environmental Standards>

Environmental standards of air quality are stipulated in Clause 1, Article 4 of the government regulation. In Clause 2, the standards must be revised every 5 years, however, they has not been revised since 1999.

The environmental standards of air quality are shown in Table 7-19.

Table 7-19 The Environmental Standards of Air Quality

Item	Evaluation periods	Unit	Standard
SO_2	1 hour	$\mu g/Nm^3$	900
	24 hours		365
	1 year		600
CO	1 hour		30,000
	24 hours		10,000
	1 year		-
NO_2	1 hour		400
	24 hours		150
	1 year		100
O_3	1 hour		235
	1 year		50
HC	3 hours		160
PM_{10}	24 hours		150
$PM_{2.5}$	24 hours		65
	1 year		15
TSP	24 hours		230
	1 year		90
Pb	24 hours		2
	1 year		1
Dust fall	30 days	$t/km^2/month$	10
	30 days		20 (factories)
Total Fluorine	24 hours	$\mu g/Nm^3$	3
	90 days		0.5
Fluorine Index	30 days	μg (per $100cm^2$ of PbO_2)	40
HC	24 hours	$\mu g/Nm^3$	150
Sulfate Index	30 days	$mgSO_3$ (per $100cm^3$ of PbO_2)	1

7.2.2 Institution of Environmental Impact Assessment (EIA) in Republic of Indonesia

(1) Overview

As a basic regulation of EIA in the Republic of Indonesia, "Government Regulations about EIA" (Government Regulation No.27, 1999) is enacted. And operations of EIA under the low of environment protection and environment management are obligated by a substance of business and its scale. EIA committee is established to investigate the substance of EIA in each local government (country, province, and prefecture).

EIA is composed of implement plan (KA-ANDAL), EIA (ANDAL), and environmental monitoring plan (RTL).

"Government Regulations about EIA" is revising by "Act of Environmental Protection and Management" was enacted.

(2) Target Project of EIA

Targeted projects of EIA are stipulated in "Regulation of the Minister of Environment about Type of Business Plan and/or Activities that Required EIA" (Regulation No.11, 2006) based on Clause 2, Article 3 of Government Regulation (Government Regulation No.27, 1999). The

business plans or activities are classified into 13 types such as national defenses, agriculture, fishery, forestry, and transportation. Requirement of EIA differ by contents of plans or activities and its scale.

The conditions for projects of construction of disposal sites are shown in Table 7-20.

Table 7-20 The Condition to be Required EIA for Disposal Sites Construction

Type of Activities	Scale		Reasons
Domestic Waste Disposal Sites	Area for Landfill	More than 10ha	The potential impacts are air pollution, pollution from leachate, and public health risks.
	Total capacity	More than 10,000t	
Landfill on the tidal area	Area for Landfill	More than 5ha	The potential impacts are air pollution, odors, pollution from leachate, vectors of disease, and public health risks.
	Total capacity	More than 5,000t	
Transfer Station	Capacity	More than 1,000t/day	The potential impacts are air pollution, odors, vectors of disease, and public health risks.
Integrated Waste Treatment Plants	Capacity	More than 500t/day	The potential impacts are air pollution, odors, pollution from leachate, toxic gases, and public health risks.
Treatment with incinerators	Capacity	More than 500t/day	The potential impacts are fly ash and bottom ash, air pollution, emission of biogases, pollution of waste water and cooling water, odors, and public health risks.
Composting Plants	Capacity	More than 100t/day	The potential impacts are odors and public health risks.
Transportation of Waste by Trains	Capacity	More than 500t/day	The potential impacts are pollution from waste water and waste runoff, odors, public health risks and social aspects of society in the region through which the railway.

(3) Approval Procedure of EIA

EIA is approved by the committee which is established by a nation or local government. The establishment of the committee is stated on the Decree of the Ministry of Environment Number 40 Year 2000.

Promoter of project submits the implement plan (KA-ANDAL) to EIA committee, and EIA committee reviews it within 75 days after acceptance.

Promoter creates ANDAL (ESI), RKL (Environmental Management Plan), and RTL (Environmental Monitoring Plan) after the approval of EIA, and EIA committee reviews and accepts it within 75 days.

However, those approvals are withdraw when the cases below, and, in that case, it is need proceeding again.

1) The case that project has not been operated for 3 years after the approval.
2) The case that project site is changed
3) The case that design, process, capacity, and materials of project are changed
4) The case that Basic environment is changed because of natural phenomena or other reasons.

(4) Discloser of Information and Stakeholders Meetings

Project promoter or government agency must inform projects to local community before EIA is operated. While the government is able to use newspaper, publicity, and electronic media as the method of providing information, project promoter must use a bulletin board at the project site. Local community is able to report comments or suggestions about the project within 3 days.

All reports from the local community are must included in the project, discussed in EIA, or considered in RKL or RTL.

(5) Estrangement from JICA Guidelines for Environmental and Social Considerations (April 2010)

Addition to JICA guidelines for environmental and social considerations, World Bank safeguard policy was also referred to make sure the operation of land acquisition and EIA is proper. The comparative table of the JICA guidelines and World Bank safeguard policy and correspondence on this project are listed below.

Table 7-21(1) Comparison of JICA GL, WB OP4.12, and Governmental Regulation (Land acquisition)

Item	JICA guidelines for environmental and social considerations	World Bank safeguard policy Operation Policy(OP) 4.12/OP Annex	Indonesian Government Regulation No.3 2007	Correspondence on this project
Discloser of Information and Public Consultation	For projects that will result in large-scale involuntary resettlement, resettlement action plans must be prepared and made available to the public. In preparing a resettlement action plan, consultations must be held with the affected people and their communities based on sufficient information made available to them in advance. When consultations are held, explanations must be given in a form, manner, and language that are understandable to the affected people. It is desirable that the resettlement action plan include elements laid out in the World Bank Safeguard Policy, OP 4.12, Annex A.	6(a)(i) Displaced persons are informed about their options and rights pertaining to resettlement and consulted on, offered choices among, and provided with technically and economically feasible resettlement alternatives 13(a) Displaced persons and their communities, and any host communities receiving them, are provided timely and relevant information, consulted on resettlement options, and offered opportunities to participate in planning, implementing, and monitoring resettlement.	Article 31 Land Procurement Committee District set a place and date of discussion with government agencies and the owners. And the price estimated by committee is discussed between agencies and owners.	Verification of actual state listed below. There is no involuntary resettlement but needed to compensate for land acquisition. Land Procurement Committee District set a place of discussion to decide price, and proper compensation was accomplished by KIMRUM, West Java Provincial Government Human Settlement and Housing Agency.

Table 7-21(2) Comparison of JICA GL, WB OP4.12, and Governmental Regulation (Land acquisition)

Item	JICA guidelines for environmental and social considerations	World Bank safeguard policy Operation Policy(OP) 4.12/OP Annex	Indonesian Government Regulation No.3 2007	Correspondence on this project
Compensation by replacement cost	People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported by project proponents etc. in a timely manner. Prior compensation, at full replacement cost, must be provided as much as possible. Host countries must make efforts to enable people affected by projects and to improve their standard of living, income opportunities, and production levels, or at least to restore these to pre-project levels. It is desirable that the resettlement action plan include elements laid out in the World Bank Safeguard Policy, OP 4.12, Annex A.	6(a)(iii) Displaced persons are provided prompt and effective compensation at full replacement cost for losses of assets attributable directly to the project. Annex A-10 The methodology to be used in valuing losses to determine their replacement cost; and a description of the proposed types and levels of compensation under local law and such supplementary measures as are necessary to achieve replacement cost for lost assets.	Article 44 Based on decisions about the shape and / or amount of compensation referred to in Article 31, Land Procurement Committee District instructed the agencies to make payments compensation (in Article 31, it is stated that shape or price of compensations are decided based on the price estimated by the third party.	Verification of actual state listed below. KIMRUM paid same or more of its land price and properly compensated.

Table 7-21(3) Comparison of JICA GL, WB OP4.12, and Governmental Regulation (Land acquisition)

Item	JICA guidelines for environmental and social considerations	World Bank safeguard policy Operation Policy(OP) 4.12/OP Annex	Indonesian Government Regulation No.3 2007	Correspondence on this project
Consideration for vulnerable group	Giving special attention to the human rights of vulnerable social groups including women, indigenous peoples, persons with disabilities, and minorities when implementing cooperation projects.	8. Particular attention is paid to the needs of vulnerable groups among those displaced, especially those below the poverty line, the landless, the elderly, women and children, indigenous peoples, ethnic minorities, or other displaced persons who may not be protected through national land compensation legislation.	Article 43 Not only land owners, but land users also have a right to receive compensation.	Verification of actual state listed below. There were no squatters and residents in the project site. Land owners or users are not people in vulnerable group. (Reported by KIMRUM)

Table 7-21(4) Comparison of JICA GL, WB OP4.12, and Governmental Regulation (Land acquisition)

Item	JICA guidelines for environmental and social considerations	World Bank safeguard policy Operation Policy(OP) 4.12/OP Annex	Indonesian Government Regulation No.3 2007	Correspondence on this project
Grievance	Appropriate participation by affected people and their communities must be promoted in the planning, implementation, and monitoring of resettlement action plans and measures to prevent the loss of their means of livelihood. In addition, appropriate and accessible grievance mechanisms must be established for the affected people and their communities.	Annex-A 17 Affordable and accessible procedures for third-party settlement of disputes arising from resettlement; such grievance mechanisms should take into account the availability of judicial recourse and community and traditional dispute settlement mechanisms.	Article 37 Land Procurement Committee District ordered the government agency that requires land compensation deposit money into district court whose jurisdiction includes the location of the land for the construction work.	Verification of actual state listed below. There were no cases of conflict engaged in the Land Procurement Committee. (Reported by KIMRUM)
resettlement	People who must be resettled involuntarily and people whose means of livelihood will be hindered or lost must be sufficiently compensated and supported by project proponents etc. in a timely manner.	Annex-A 12 A combination of productive potential, locational advantages and other factors is at least comparable to the advantages of the old sites.	Article 64 Government agency is responsible for payment of compensation within 60 days after determination.	Verification of actual state listed below. There is no involuntarily settlement, and payment of compensation has been done by rule. (Reported by KIMRUM)

Table 7-22(1) Comparison of JICA GL, WB OP4.01, and Government Regulation (Environmental assessment)

Item	JICA guidelines for environmental and social considerations	World Bank safeguard policy Operation Policy(OP) 4.01/OP	Indonesian Government Regulation No.3/2007, No.27/1999	Correspondence on this project
Principle	Environmental impacts that may be caused by projects must be assessed and examined in the earliest possible planning stage. Alternatives or mitigation measures to avoid or minimize adverse impacts must be examined and incorporated into the project plan.	3. Environmental assessment is initiated as early as possible in project processing and is integrated closely with the economic, financial, institutional, social, and technical analyses of a proposed project.	Preamble b. By Analyzing environmental impacts in earlier stage of project, it is able to handle negative impacts and prepare for positive impacts.	Necessity of environmental considerations is stated in earlier planning stage, and there is no huge gap. In the master plan which decides the project site, alternative plans were assessed properly in accordance with national standard of Indonesia (SNI).

Table 7-22(2) Comparison of JICA GL, WB OP4.01, and Government Regulation (Environmental assessment)

Item	JICA guidelines for environmental and social considerations	World Bank safeguard policy Operation Policy(OP) 4.01/OP	Indonesian Government Regulation No.3/2007, No.27/1999	Correspondence on this project
Examination of Measures	Multiple alternatives must be examined in order to avoid or minimize adverse impacts and to choose better project options in terms of environmental and social considerations. In the examination of measures, priority is to be given to avoidance of environmental impacts; when this is not possible, minimization and reduction of impacts must be considered next. Compensation measures must be examined only when impacts cannot be avoided by any of the aforementioned measures.	2. EA evaluates a project's potential environmental risks and impacts in its area of influence; examines project alternatives; identifies ways of improving project selection, sitting, planning, design, and implementation by preventing, minimizing, mitigating, or compensating for adverse environmental impacts and enhancing positive impacts; and includes the process of mitigating and managing adverse environmental impacts throughout project implementation.	Article (1)(2) If the result of the assessment of the commission of assessment concludes that : a. the adverse major and significant impacts which will be brought about by the project concerned cannot be overcome by the technology Available. b. the cost of overcoming the adverse major and significant impact is bigger than the benefit of the favorable major and significant impacts which will be brought about the project concerned. The responsible government agency will decide that the plan for the project concerned is not environment-worthy. The authorized government agency will reject an application for a license to conduct a project concerned if the responsible government agency gives a decision.	Since devising a countermeasure is obligated, there is no huge gap. In this project, As the mitigation, complex intermediate treatment facility, cell design landfill, impermeable sheet, leachate processing facility was introduced.

Table 7-22(3) Comparison of JICA GL, WB OP4.12, and Government Regulation No.27/1999 (Environmental assessment)

Item	JICA guidelines for environmental and social considerations	World Bank safeguard policy Operation Policy(OP) 4.01	Government Regulation No.27 1999	Correspondence on this project
Examination of Measures	Appropriate follow-up plans and systems, such as monitoring plans and environmental management plans, must be prepared; the costs of implementing such plans and systems, and the financial methods to fund such costs, must be determined. Plans for projects with particularly large potential adverse impacts must be accompanied by detailed environmental management plans.	Annex-C 1 A project's environmental management plan (EMP) consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. Management plans are essential elements of EA reports.	Article 22 The authorized government agency will reject an application for a license to conduct project if environmental assessment plan, environmental management plan, and environmental monitoring plan is not satisfied the guidelines.	Environmental management plan and environmental monitoring plan is formulated, and there is no huge gap. Monitoring plan considered feature of this proposal was worked out based on existing EIA.

Table 7-22(4) Comparison of JICA GL, WB OP4.12, and Government RegulationNo.27/1999 (Environmental Assessment)

Item	JICA guidelines for environmental and social considerations	World Bank safeguard policy Operation Policy(OP) 4.01	Government Regulation No.27 1999	Correspondence on this project
Social consensus	Projects must be adequately coordinated so that they are accepted in a manner that is socially appropriate to the country and locality in which they are planned. For projects with a potentially large environmental impact, sufficient consultations with local stakeholders, such as local residents, must be conducted via disclosure of information at an early stage, at which time alternatives for project plans may be examined. The outcome of such consultations must be incorporated into the contents of project plans.	14. For all Category A and B projects proposed for IBRD or IDA financing, during the EA process, the borrower consults project-affected groups and local nongovernmental organizations (NGOs) about the project's environmental aspects and takes their views into account.	Article 33 An announcement constitutes the right of everybody to have information on the environment which is linked with the role in environmental management. Within a period of 3 working days as from the announcement of the plan for the project, the community members concerned will be entitled to put forward suggestions, opinions and responses regarding the implementation of the plan for the project. Those suggestions, opinions and responses will be submitted in writing to the responsible government agency.	Explanation toward community is obliged, and there is no huge gap. Although most residents knew about the project, residents who directly receive explanation are a few. This is because that briefing by project promoter was held toward representatives of each community, and representatives explained to residents.

7.2.3 Role of Relevant Organizations

The authorities to approve the project are EIA committees established by each local government (nation, province, and prefecture/city).
Each Committee is controlled by:

(1) Committee Established by a Nation

- Project closely related to national defense and classified information
- Project over more than 2 provinces or special administrative regions
- Scheduled project site is on border conflict areas or near the border
- Project implemented outside the territorial waters (more than 12 mile away from land)

(2) Committee Established by Province

- Project have great impact
- Project over several prefectures
- Scheduled project site is within the territorial waters (4~12 mile)

(3) Committee Established by Prefecture/City

- Other project

7.3 Scoping

7.3.1 The Overview of Scoping

Impacts of the projects were classified into the following 4 categories in each stage.

+/-A : the positive/negative impacts are significant.
+/-B : the positive/negative impacts are not significant.
C : the impacts are unclear.
D : the impacts are slight very much.

Draft scoping are shown in Table 7-23 and Table 7-24.

The projects are aimed at reducing and improving the environmental impacts, compared with usual FDSs, and adopt sanitary landfill system.

The result of scoping, any items will not have significant impacts with the projects. But they will have some negative impacts. Therefore, mitigation measures for these items are studied and are proposed.

Table 7-23(1) Draft Scoping for Legok Nangka

Items	Stage					Reasons
	T	a	b	c	d	
Social Environment						
Involuntary resettlement	D	D	D	D	D	There is no house including illegal residences in the project site and the operational road. Involuntary resettlement with the project does not occur.
Local economy such as employment and livelihoods	+B / -B	-B	+B	+B / -B	D	Most of lands in the project site are owned by public. But a few farmlands which are private lands should be moved. With the construction and the operation of the FDS, new jobs are created in the villages. Increase in the sales of local shops is expected because of a flow of construction workers and employees of the FDS into the villages. Regardless of whether the implementation of the project, the Sarimukti FDS which is in-service now will be full and be closed within the next 2 years. At that time, it has possibilities that scavengers in the Sarimukti FDS will move to the villages around the project site. Because illegal residents and workers will be managed in the project, the scavengers may lose their livelihoods.
Land use and use of local resources	D	D	D	D	D	Most of the project site is public land. This land will be used effectively by the construction of the FDS. Relocation of farmlands has been compensated adequately.
Social capital and social organizations	D	D	D	D	D	Impact on social capital or local decision-making organization is little.
Existing infrastructure and social services	+B	D	D	+B	D	With the operation of the FDS, improvement of waste management services is expected.
Poor people and minorities	D	D	D	D	D	There is no minority group around the project site. The project site is in mountainous area. There is no resident including illegal houses.

* In the Stage column, meanings of each sign are the followings.
T : Total, a : Land Acquisition, b : Under Construction, c : In-Service, d : After Closing

Table 7-23(2) Draft Scoping for Legok Nangka

Items	Stage					Reasons
	T	a	b	c	d	
Social Environment						
Deviation of damage and benefits	+B	D	D	+B	D	The amount of the compensation is set according to land taxes, market prices and distances from highways. After that, it is approved by the third party. Therefore, extreme deviation is not generated. Because new jobs which are not require any special skills such as separation of waste, etc. will be created with the operation of this FDS, existing social inequality is reduced.
Gender and children's rights	D	D	D	D	D	Illegal working of the socially vulnerable such as women and children will not newly generate with the project because illegal residents and workers are managed.
Cultural heritage	D	D	D	D	D	There is no cultural heritage in the project site according to interviews with environment management agency of Kabupaten Bandung and the existing EIA.
Conflict of interests in the area	D	D	D	D	D	Conflict of interests around the project site will not generate because the local residents will have the priority to be hired and vocational training for the locals is planed.
Infectious diseases such as HIV	-B	D	-B	-B	D	There is potential to expand the infection because of the inflow the construction workers and the employees of the FDS. Also, there is potential to expand the infection carried by flies which are induced by waste.
Working condition	-B	D	-B	-B	D	The construction workers and the employees of the FDS will have risks of accidents and infections.
Natural Environment						
Topography	-B	D	-B	D	C	Cut earth when landfill site is reclaimed may cause landslides. Compression of the buried waste may change landforms after closing the site operation
Soil runoff	-B	D	-B	D	C	Cut earth when landfill site is reclaimed may cause erosion. Discharged water from the FDS will drain into a river through channels. Compared to mess flowing, new soil erosion will be reduced. The landform changes by compression of the buried waste may be run out soil.

* In the Stage column, meanings of each sign are the followings.
T : Total, a : Land Acquisition, b : Under Construction, c : In-Service, d : After Closing

Table 7-23(3) Draft Scoping for Legok Nangka

Items	Stage					Reasons
	T	a	b	c	d	
Natural Environment						
Ground water	-A	D	D	-A	-A	Leachate from buried waste may penetrate into underground. Construction to disconnect the underground water vein or large-scale water pumping will not be performed.
Rivers and flow condition	-B	D	D	-B	-B	Hence the discharged water from the FDS will drain into a river through channels, the flux of the river will change.
Protected area	D	D	D	D	D	The project site is not designated as protected areas.
Coastal and sea area	D	D	D	D	D	The project site is far away from the coastal areas. The discharged water will flow into the sea after enough dilution.
Ecosystem	-B	D	D	-B	D	The project site is moor lands with a slight bush except the farmlands. There is no rare species according to the existing EIA. Increasing in the flies which are induced by waste may affect the ecosystem.
Meteorology	D	D	D	D	D	There is no impact on the weather.
Landscape	D	D	D	D	D	There is no impact on the landscape because the project site is in mountainous areas and is out of sight from the surrounding.
Global warming	D	D	D	D	D	There is no impact on global warming.
Pollution and provision for pollution						
Air pollution	D	D	D	D	D	Since the project site is more than 1km away from settlements, the construction of the project will not affect air quality of the settlements. As there is no settlement between the existing highway and the project site, the impacts of construction vehicles and waste transporter vehicle are little.
Water pollution	-A	D	D	-A	-A	If the discharged water from the FDS will not be handled properly, it may cause water pollution of the rivers.
Soil pollution	-A	D	D	-A	-A	Leachate from buried waste may penetrate into underground in the landfill area.
Waste	D	D	D	D	D	Waste soil will be reused as a covering material.

* In the Stage column, meanings of each sign are the followings.
T : Total, a : Land Acquisition, b : Under Construction, c : In-Service, d : After Closing

Table 7-23(4) Draft Scoping for Legok Nangka

Items	Stage					Reasons
	T	a	b	c	d	
Pollution and provision for pollution						
Noise and vibration	D	D	D	D	D	Since the project site is more than 1km away from settlements, noise and vibration by the construction and the operation of the project will not affect the settlements. As there is no settlement between the existing highway and the project site, the impacts of construction vehicles and waste transporter vehicle are little.
Land subsidence	D	D	D	D	D	There is no soft ground in the project site.
Bad odor	D	D	D	-B	D	Since the project site is more than 1km away from settlements, bad odor from the project site will not affect the settlements. The flow of leachate from buried waste will be a source of bad odor between the project site and rivers.
Bottom sediment	D	D	D	D	D	Pollutants which affect sediment in rivers around the project site will not be drained.

* In the Stage column, meanings of each sign are the followings.
T : Total, a : Land Acquisition, b : Under Construction, c : In-Service, d : After Closing

Table 7-24(1) Draft Scoping for Nambo

Items	Stage					Reasons
	T	a	b	c	d	
Social Environment						
Involuntary resettlement	D	D	D	D	D	There is no house including illegal residences in the project site and the access road by local government. Involuntary resettlement with the project does not occur.
Local economy such as employment and livelihoods	+B / -B	D	+B	+B / -B	D	The land of the project site is owned by National Forest Company and is acquired in exchanging land. No resident and farmland are moved. With the construction and the operation of the FDS, new jobs are created in the villages. Increase in the sales of local shops is expected because of a flow of construction workers and employees of the FDS into the villages. Regardless of whether the implementation of the project, the Cipayung FDS which is in-service now will be full and be closed within the next 2 years. At that time, it has possibilities that scavengers in the Cipayung FDS will move to the villages around the project site. Because illegal residents and workers will be managed in the project, the scavengers may lose their livelihoods.
Land use and use of local resources	D	D	D	D	D	The project site is a vacant land owned by National Forest Company. This land will be used effectively by the construction of the FDS.
Social capital and social organizations	D	D	D	D	D	Impact on social capital or local decision-making organization is little.
Existing infrastructure and social services	+B	D	D	+B	D	With the operation of the FDS, improvement of waste management services is expected. Moreover the access roads are developed as local infrastructure.
Poor people and minorities	D	D	D	D	D	There is no minority group around the project site. The project site is in mountainous area. There is no resident including illegal houses.

* In the Stage column, meanings of each sign are the followings.
T : Total, a : Land Acquisition, b : Under Construction, c : In-Service, d : After Closing

Table 7-24(2) Draft Scoping for Nambo

Items	Stage					Reasons
	T	a	b	c	d	
Social Environment						
Deviation of damage and benefits	+B	D	D	+B	D	Because new jobs which are not require any special skills such as separation of waste, etc. will be created with the operation of this FDS, existing social inequality is reduced.
Gender and children's rights	D	D	D	D	D	Illegal working of the socially vulnerable such as women and children will not newly generate with the project because illegal residents and workers are managed.
Cultural heritage	D	D	D	D	D	There is no cultural heritage in the project site according to interviews with environment agency of Kabupaten Bogor and the existing EIA.
Conflict of interests in the area	D	D	D	D	D	Conflict of interests around the project site will not generate because the local residents will have the priority to be hired and vocational training for the locals is planed.
Infectious diseases such as HIV	-B	D	-B	-B	D	There is potential to expand the infection because of the inflow the construction workers and the employees of the FDS. Also, there is potential to expand the infection carried by flies which are induced by waste.
Working condition	-B	D	-B	-B	D	The construction workers and the employees of the FDS will have risks of accidents and infections.
Natural Environment						
Topography	-B	D	-B	D	C	Cut earth when landfill site is reclaimed may cause landslides. Compression of the buried waste may change landforms after closing the site operation
Soil runoff	-B	D	-B	D	C	Cut earth when landfill site is reclaimed may cause erosion. Discharged water from the FDS will drain into a river through channels. Compared to mess flowing, new soil erosion will be reduced. The landform changes by compression of the buried waste may be run out soil.
Ground water	-A	D	D	-A	-A	Leachate from buried waste may penetrate into underground. Construction to disconnect the underground water vein or large-scale water pumping will not be performed.

* In the Stage column, meanings of each sign are the followings.
T : Total, a : Land Acquisition, b : Under Construction, c : In-Service, d : After Closing

Table 7-24(3) Draft Scoping for Nambo

Items	Stage					Reasons
	T	a	b	c	d	
Natural Environment						
Rivers and flow condition	-B	D	D	-B	-B	Hence the discharged water from the FDS will drain into a river through channels, flux of the river will change.
Protected area	D	D	D	D	D	The project site is not designated as protected areas.
Coastal and sea area	D	D	D	D	D	The project site is far away from the coastal areas. The discharged water will flow into the sea after enough dilution.
Ecosystem	-B	D	D	-B	D	The project site is moor lands with a slight bush except the farmlands. There is no rare species according to the existing EIA. Increasing in the flies which are induced by waste may affect the ecosystem.
Meteorology	D	D	D	D	D	There is no impact on the weather.
Landscape	D	D	D	D	D	There is no impact on the landscape because the project site is slightly hilly and is out of sight from the surrounding.
Global warming	D	D	D	D	D	There is no impact on global warming.
Pollution and provision for pollution						
Air pollution	-B	D	-B	-B	D	Since the project site is more than 1km away from settlements, the construction of the project will not affect air quality of the settlements. As the access roads are planned to avoid the settlement as far as possible, the impacts of construction vehicles and waste transporter vehicle are little. But dust will affect the settlement.
Water pollution	-A	D	D	-A	-A	If the discharged water from the FDS will not be handled properly, it may cause water pollution of the rivers.
Soil pollution	-A	D	D	-A	-A	Leachate from buried waste may penetrate into underground in the landfill area.
Waste	D	D	D	D	D	Waste soil will be reused as a covering material.

* In the Stage column, meanings of each sign are the followings.
T : Total, a : Land Acquisition, b : Under Construction, c : In-Service, d : After Closing

Table 7-24 (4) Draft Scoping for Nambo

Items	Stage					Reasons
	T	a	b	c	d	
Pollution and provision for pollution						
Noise and vibration	-B	D	-B	-B	D	Since the project site is more than 1km away from settlements, noise and vibration by the construction and the operation of the project will not affect the settlements. However the access roads are planned to avoid the settlement as far as possible, the impacts of construction vehicles and waste transporter vehicle are not little.
Land subsidence	D	D	D	D	D	There is no soft ground in the project site.
Bad odor	D	D	D	-B	D	Since the project site is more than 1km away from settlements, bad odor from the project site will not affect the settlements. The flow of leachate from buried waste will be a source of bad odor between the project site and rivers. However the access roads are planned to avoid the settlement as far as possible, the bad odor of from waste transporter vehicles will affect the settlements.
Land subsidence	D	D	D	D	D	Pollutants which affect sediment in rivers around the project site will not be drained.

* In the Stage column, meanings of each sign are the followings.
T : Total, a : Land Acquisition, b : Under Construction, c : In-Service, d : After Closing

7.3.2 Important Items

(1) Local Economy such as Employment and Livelihoods

Legok Nangka

For the relocation of the farmlands, unit prices of the compensation are approved and determined by the third party according to land taxes, market prices and distances from highways.

In the project site, the compensation rates are, class1:Rp132,000/m^2, Class2 : Rp46,000/m^2 and Class3 : Rp30,000/m^2. If the lands were owned by public, the compensation must be used to purchase alternative lands, and the compensation rates make them get wider lands. If the lands were private lands, a use of their compensation is not limited. Even the land is private, the compensation rates are as same as public lands and are enough to get alternative land.

Both Sites

Regardless of whether the implementation of the projects, the Sarimukti FDS and the Cipayung FDS which are in-service now will be full and be closed in the near future. At that time, a part of scavengers there will move to other FDSs which are in-service. Therefore it has possibilities that the scavengers move to the project sites. But the scavengers will not enter the Legok Nangka FDS and the Nambo FDS as a scavenger with current conditions since these FDSs are developed as sanitary landfill sites. Now, it is discussed with the West Java Government that the current scavengers are preferentially hired after vocational training.

(2) Topography

Both Sites

Cut earth to develop landfill sites since a sanitary landfill method is planned for the projects. Because the sites are mountainous areas, it has possibilities that erosion of the construction causes landslides.

(3) Ground Water and Soil Pollution

Both Sites

It has possibilities that the leachate from buried waste penetrates into ground. In addition, soil pollution accompanies the groundwater pollution.

(4) Rivers and Flow Condition

Both Sites

The quantities of treated water drained from water treatment facilities of the projects will be about 300 – 400 m^3/day, and it will be discharged into a river through channels. As the flow of the treated water is about 5.6 L/second, it may change the flow of the river depending on the size of the river.

(5) Ecosystem

Both Sites

The project sites are moor lands with a slight bush except the farmlands and have no rare species. But a lot of flies may be attracted the waste and gather in the project sites. Outbreaks of flies may affect the surrounding ecosystem. In addition, since flies can transmit pathogenic bacteria and virus, it could cause infections.

(6) Water Pollution

Both Sites

The quantities of the leachate from the projects will be about 300 – 400 m^3/day, and it will be discharged into the rivers after treatments in the facilities. Indonesia does not have their effluent standards for waste disposal sites. The effluent standards for general factories are applied to waste disposal sites. As a result of discussions with the ministry of environment of Indonesia, the standards are applied to the projects except for nitrogen and its compounds.

The rivers discharged the waste water are applied environmental standards of water quality. Since the standards contain nitrate-nitrogen which is nitrogen compounds, nitrate-nitrogen should be managed even the effluent standard is not applied.

(7) Bad Odor

Both Sites

The leachate from the buried waste in the landfill areas of the projects may run off through the surface of land or penetrate into underground, and then inflow the rivers. Run-off through the surface and the shallow underground flow will be sources of bad odor.

7.4 Impact Prediction

As a result of scoping, some items were evaluated ‘A’, ‘B’ and ‘C’. Without regard to positive or negative, the impacts of the items are predicted. Outlines of the prediction are shown in Table 7-25 and Table 7-26.

Table 7-25(1) Impact Predictions for Legok Nangka

Items	Effect Factors	Affected people	Affected area	Effects
Planning stage (Land acquisition)				
Local economy such as employment and livelihoods	Land acquisition	Owners and users of the project site	The project site	The land for the project site (about 70 ha) will be acquired, and not be used as farmlands.
Construction stage (Under Construction)				
Local economy such as employment and livelihoods	Securing the labor forces for the construction	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang Desa Simpen Kidul Desa Simpen Kaler	New jobs for the construction will be created.
	Inflow of new workers	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang	The inflow of the construction workers into the villages will make the sales of local shops increase. It also will cause new business opportunity.
Infectious diseases such as HIV	Inflow of new workers	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang	Because of the inflow of the construction workers into the villages, it is going to be more likely that new infections are carried into the villages.
Working condition	Generation of accidents and infections	Construction workers	The project site	The construction will increase the likelihood of accidents and infections.

Table 7-25(2) Impact Predictions for Legok Nangka

Items	Effect Factors	Affected people	Affected area	Effects
Construction stage (Under Construction)				
Topography	Cut earth to develop the land	Local people living in lower area of the project site	Around the project site Especially, Desa Nagreg Desa Ciherang Desa Simpen Kidul Desa Simpen Kaler	It will increase the chance for slides to collapse with the cut earth.
Soil runoff	Cut earth to develop the land	Local people living along the downstream	Cipancar River and its branches	The surface soil will run off and flow into the river as muddy water because of the erosion by cut earth and rainfall after tree-clearing. As a result, TSS will exceed the environmental standard.
Operation stage (In-service)				
Local economy such as employment and livelihoods	Securing the labor forces for the construction	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang Desa Simpen Kidul Desa Simpen Kaler	New jobs for the operation will be created.
	Inflow of new workers	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang	The inflow of the employees of the FDS into the villages will make the sales of local shops increase and cause new business opportunity.
		Scavengers in the existing FDS	—	Some of the scavenger moving from closed FDSs will lose their livelihood. Because Illegal trespasses, stay and working in the project site will not be tolerated.

Table 7-25(3) Impact Predictions for Legok Nangka

Items	Effect Factors	Affected people	Affected area	Effects
Operation stage (In-service)				
Existing infrastructure and social services	Operation of the facilities	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang	With the operation of the FDS, waste management services will be improved.
Infectious diseases such as HIV	Inflow of new workers	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang	Because of the inflow of the employees of the FDS into the villages, it is going to be more likely that new infections are carried into the villages.
Working condition	Generation of accidents and infections	Workers in the facilities	The project site	The operation will increase the likelihood of accidents and infections.
Ecosystem	Composting and landfill	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang Desa Simpen Kidul Desa Simpen Kaler	Flies and rats will be induced in waste such as garbage. It will disturb the ecosystem.
Ground water and Soil pollution	Leakage of the leachate	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang Desa Simpen Kidul Desa Simpen Kaler	The leachate penetrating into underground will contaminate ground water and soil. The quantity and the quality of the leachate are assumed below. BOD:4,000mg/L COD:5,000mg/L pH :4.5～7.5 SS : 400mg/L water volume:5-6L/s

Table 7-25(4) Impact Predictions for Legok Nangka

Items	Effect Factors	Affected people	Affected area	Effects
Operation stage (In-service)				
Water pollution	Leakage of the leachate	Local people living along the downstream	Cipancar River and its branches	The leachate penetrating into underground and running off through the surface will contaminate water in the river. The quality of the leachate is as descried above.
	Discharging of treated water	Local people living along the downstream	Cipancar River and its branches	Water treatment will be carried out as one of the mitigation measures. The impacts of the treated water will be follows. River（2011/04/13） BOD：2.5mg/L COD：3.8mg/L Treated water BOD： 50mg/L COD：100mg/L River after drained[1] BOD：2.8mg/L COD：4.4mg/L
Rivers and flow condition	Discharging of treated water	Local people living along the downstream	Cipancar River	To drain the treated water will increase less than 1% of the river flow. River（2011/04/13） 55,300m^3/day Discharged water 340m^3/day
Bad odor	Leakage of the leachate	Local people living between the project site and rivers	Around the project site Especially, Desa Ciherang, Desa Simpen Kaler	The leachate penetrating into underground and running off through the surface will cause bad odor.
	Presence of the waste	Workers in the facilities	The project site	The waste will be a source of bad odor.

[1] Predicted concentrations after drained are caluculated based on a following formulation.

$$Con_{af} = \frac{Flow_{river} \times Con_{river} + Flow_{disc} \times Con_{disc}}{Flow_{river} + Flow_{disc}}$$

Con_{af}：Concentrations in the river after drained
$Flow_{river}$：Current flow of the river (55.300m^3/day), Con_{river}：Current quality of the river
$Flow_{disc}$：Estimate flow of the drained water (340m^3/day),
Con_{disc}：Estimate quality of the drained water

Table 7-25(5) Impact Predictions for Legok Nangka

Items	Effect Factors	Affected people	Affected area	Effects
Post-operation stage (After closing)				
Topography	Compression of the buried waste	Local people living in lower area of the project site	Around the project site Especially, Desa Nagreg, Desa Ciherang, Desa Simpen Kidul, Desa Simpen Kaler	The compression of the buried waste may cause the landform change and landslides.
Soil runoff	Changing the landforms by compression of the buried waste	Local people living along the downstream	Cipancar River and its branches	The landform change by the compression may cause soil runoff and it may flow into the river.
Ground water and soil pollution	Leakage of the leachate	Local people living near the project site	Around the project site Especially, Desa Nagreg Desa Ciherang Desa Simpen Kidul Desa Simpen Kaler	Same as 'Operation stage'
Water pollution	Leakage of the leachate, Discharging of treated water	Local people living along the downstream	Cipancar River and its branches	Same as 'Operation stage'

Table 7-26(1) Impact Predictions for Nambo

Items	Effect Factors	Affected people	Affected area	Effects
Construction stage (Under Construction)				
Local economy such as employment and livelihoods	Securing the labor forces for the construction	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Bantar Jati Desa Gunung Putri Desa Leuwi Karet	New jobs for the construction will be created.
	Inflow of new workers	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Leuwi Karet	The inflow of the construction workers into the villages will make the sales of local shops increase. It also will cause new business opportunity.
Infectious diseases such as HIV	Inflow of new workers	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Leuwi Karet	Because of the inflow of the construction workers into the villages, it is going to be more likely that new infections are carried into the villages.
Working condition	Generation of accidents and infections	Construction workers	The project site	The construction will increase the likelihood of accidents and infections.
Topography	Cut earth to develop the land	Local people living in lower area of the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Leuwi Karet	It will increase the chance for slides to collapse with the cut earth.

Table 7-26(2) Impact Predictions for Nambo

Items	Effect Factors	Affected people	Affected area	Effects
Construction stage (Under Construction)				
Soil runoff	Cut earth to develop the land	Local people living along the downstream	Cijambe River and its downstream	The surface soil will run off and flow into the river as muddy water because of the erosion by cut earth and rainfall after tree-clearing. As a result, TSS will exceed the environmental standard.
Air pollution	Operation of construction vehicles	Local people living along the access roads	The roads from Desa Gunung Putri to Desa Lulut through Desa Bantar Jati	Air quality will be worse by the operation of the construction vehicles. However CO, NOx and SOx will not exceed the environmental standards, Dust will exceed the environmental standard.
Noise and vibration	Operation of construction vehicles	Local people living along the access roads	The roads from Desa Gunung Putri to Desa Lulut through Desa Bantar Jati	Noise level will increase by the operation of the construction vehicles. However the noise level nearby the roads will become 73 – 93 dB, 100m away from the roads will become 50 dB.

Table 7-26(3) Impact Predictions for Nambo

Items	Effect Factors	Affected people	Affected area	Effects
Operation stage (In-service)				
Local economy such as employment and livelihoods	Securing the labor forces for the construction	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Bantar Jati Desa Gunung Putri Desa Leuwi Karet	New jobs for the operation will be created.
	Inflow of new workers	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Leuwi Karet	The inflow of the employees of the FDS into the villages will make the sales of local shops increase and cause new business opportunity.
		Scavengers in the existing FDS	—	Some of the scavenger moving from closed FDSs will lose their livelihood. Because Illegal trespasses, stay and working in the project site will not be tolerated.
Existing infrastructure and social services	Operation of the facilities	Local people living near the project site	Around the project site Especially, Desa Nagreg, Desa Ciherang	With the operation of the FDS, waste management services will be improved. The access roads will be constructed and improved. The road network and the road capability will be improved.

Table 7-26(4) Impact Predictions for Nambo

Items	Effect Factors	Affected people	Affected area	Effects
Operation stage (In-service)				
Infectious diseases such as HIV	Inflow of new workers	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Leuwi Karet	Because of the inflow of the employees of the FDS into the villages, it is going to be more likely that new infections are carried into the villages.
Working condition	Generation of accidents and infections	Workers in the facilities	The project site	The operation will increase the likelihood of accidents and infections.
Ecosystem	Composting and landfill	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Leuwi Karet	Flies and rats will be induced in waste such as garbage. It will disturb the ecosystem.
Ground water and Soil pollution	Leakage of the leachate	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Leuwi Karet	The leachate penetrating into underground will contaminate ground water and soil. The quality of the leachate is assumed below. BOD:5,000mg/L COD:7,000mg/L pH :4.5～7.5 SS : 200mg/L

Table 7-26(5) Impact Predictions for Nambo

Items	Effect Factors	Affected people	Affected area	Effects
Operation stage (In-service)				
Water pollution	Leakage of the leachate	Local people living along the downstream	Cijambe River, Cileungsi River, etc.	The leachate penetrating into underground and running off through the surface will contaminate water in the river. The quality of the leachate is as descried above.
	Discharging of treated water	Local people living along the downstream	Cijambe River, Cileungsi River, etc.	Water treatment will be carried out as one of the mitigation measures. The impacts of the treated water will be follows. River（2001 - 2010） BOD：9.9mg/L COD： 35mg/L Treated water BOD： 50mg/L COD：100mg/L River after drained BOD：9.9mg/L COD： 35mg/L
Rivers and flow condition	Discharging of treated water	Local people living along the downstream	Cileungsi River	To drain the treated water will increase 0.1% of the river flow. River（2001 - 2010） 997,000m^3/day Discharged water 360m^3/day

*1) Predicted concentrations after drained are caluculated based on a following formulation.

$$Con_{af} = \frac{Flow_{river} \times Con_{river} + Flow_{disc} \times Con_{disc}}{Flow_{river} + Flow_{disc}}$$

Con_{af}：Concentrations in the river after drained

$Flow_{river}$：Current flow of the river (997.000m^3/day), Con_{river}：Current quality of the river

$Flow_{disc}$：Estimate flow of the drained water (360m^3/day),

Con_{disc}：Estimate quality of the drained water

Table 7-26(6) Impact Predictions for Nambo

Items	Effect Factors	Affected people	Affected area	Effects
Operation stage (In-service)				
Air pollution	Operation of waste transfer tracks	Local people living along the access roads	The roads from Desa Gunung Putri to Desa Lulut through Desa Bantar Jati	Air quality will be worse by the operation of the waste transfer tracks. However CO, NOx and SOx will not exceed the environmental standards, Dust will exceed the environmental standard.
Noise and vibration	Operation of waste transfer tracks	Local people living along the access roads	The roads from Desa Gunung Putri to Desa Lulut through Desa Bantar Jati	Noise level will increase by the operation of the waste transfer tracks. However the noise level nearby the roads will become 73 – 93 dB, 100m away from the roads will become 50 dB.
Bad odor	Leakage of the leachate	Local people living between the project site and rivers	Around the project site Especially, Desa Nambo Desa Lulut、 Desa Bantar Jati	The leachate penetrating into underground and running off through the surface will cause bad odor.
	Operation of waste transfer tracks	Local people living along the access roads	The roads from Desa Gunung Putri to Desa Lulut through Desa Bantar Jati	The garbage loaded on the tracks will be a source of bad odor when the tracks go through the access roads.
	Presence of the waste	Workers in the facilities	The project site	The waste will be a source of bad odor.
Post-operation stage (After closing)				
Topography	Compression of the buried waste	Local people living in lower area of the project site	Around the project site Especially, Desa Nambo Desa Lulut、 Desa Leuwi Karet	The compression of the buried waste may cause the landform change and landslides.

Table 7-26(7) Impact Predictions for Nambo

Items	Effect Factors	Affected people	Affected area	Effects
Post-operation stage (After closing)				
Soil runoff	Changing the landforms by compression of the buried waste	Local people living along the downstream	Cijambe River and its downstream	The landform change by the compression may cause soil runoff and it may flow into the river.
Ground water and soil pollution	Leakage of the leachate	Local people living near the project site	Around the project site Especially, Desa Nambo Desa Lulut Desa Leuwi Karet	Same as 'Operation stage'
Water pollution	Leakage of the leachate, Discharging of treated water	Local people living along the downstream	Cijambe River and its downstream	Same as 'Operation stage'

7.5 Mitigation Measures (Avoidance, Minimizing, Compensation)

Mitigation measures are examined for the items predicted the negative impacts based on the impact predictions. Mitigation measures shown in Table 7-27 and Table 7-28 are proposed.

Table 7-27(1) Mitigation Measures for Legok Nangka

Items	Mitigation measures
Planning stage (Land acquisition)	
Local economy such as employment and livelihoods due to the land acquisition	・The procedure of the land acquisition is carried out based on law and regulations. ・In the event of complaints, the ways to deal with the complaints are properly considered.
Construction stage (Under Construction)	
Infectious diseases such as HIV due to the inflow of new workers	・Hygienic education is provided for the workers and locals. ・A incidence of infection and their symptoms are regularly investigated in cooperation with the health agency of Kabupaten Bandung.
Working condition due to the generation of accidents and infections	・Arrangement and cleanness of the working places are managed. ・Safety education such as traffic safety and public health is provided for the workers and locals.
Topography due to cut earth to develop the land	・Stable gradients taken soil qualities in escavation points into consideration are adopted. ・Retaining walls are installed as needed.
Soil runoff due to cut earth to develop the land	・Balancing reservoirs are installed. ・The surface are coverd with sheets.
Operation stage (In-service)	
Local economy such as employment and livelihoods due to the inflow of new workers	・By contacts or employments rather than ‘toleration of illegal working’ currently being in Indonesia, the project promotes harmony with the people who are working as scavengers. ・To avoid conflicts with locals in the project site, the first priority of employments is local residents. When strangers are hired, the scavengers have the priority to be hired.
Infectious diseases such as HIV due to the inflow of new workers	・Hygienic education is provided for the workers and locals. ・A incidence of infection and their symptoms are regularly investigated in cooperation with the health agency of Kabupaten Bandung.
Working condition due to the generation of accidents and infections	・Arrangement and cleanness of the working places are managed. ・Safety education such as traffic safety and public health is provided for the workers and locals.

Table 7-27(2) Mitigation Measures for Legok Nangka

Items	Mitigation measures
Operation stage (In-service)	
Ecosystem due to composing and landfill	・The initial stage of compositng is to produce indoors as much as possible. ・Waste to landfill is daily covered with soil.
Water, ground water and soil pollution, and bad odor due to leakage of the leachate	・Waterproof sheets are placed on the bottom. ・The leachate is discharged after treatments in water treatment facilities.
Water pollution, rivers and flow condition due to discharging of treated water	・Channels are set up to a big river which has enough water throughout a year. ・Balancing reservoirs are installed to adjust the quantity of discharged water.
Bad odor due to presence of the waste	・The workers wear masks. ・In landfill area, daily covering with soil and regular covering with sheets are conducted.
Post-operation stage (After closing)	
Topography and soil runoff due to compression of the buried waste	・Waste are buried after compress enough.
Water, ground water and soil pollution due to leakage of the leachate	・The waterproof sheets are placed on the bottom. ・For a certain period after stopping the operation, the leachate is discharged after treatments in the water treatment facilities.
Water pollution, rivers and flow condition due to discharging of treated water	・The channels are set up to a big river which has enough water throughout a year. ・The balancing reservoirs are installed to adjust the quantity of the discharged water.

Table 7-28(1) Mitigation Measures for Nambo

Items	Mitigation measures
Construction stage (Under Construction)	
Infectious diseases such as HIV due to the inflow of new workers	・Hygienic education is provided for the workers and locals. ・A incidence of infection and their symptoms are regularly investigated in cooperation with the health agency of Kabupaten Bogor.
Working condition due to the generation of accidents and infections	・Arrangement and cleanness of the working places are managed. ・Safety education such as traffic safety and public health is provided for the workers and locals.
Topography due to cut earth to develop the land	・Stable gradients taken soil qualities in escavation points into consideration are adopted. ・Retaining walls are installed as needed.
Soil runoff due to cut earth to develop the land	・Balancing reservoirs are installed. ・The surface are coverd with sheets.
Air pollution, noise and vibration due to operation of construction vehicles	・The construction process is managed not to concentrate the operation of vehicles. ・The vehicles are regularly washed and maintained. ・The trafic speed is limited. ・Sprinkling the road is performed in the dry seasons.
Operation stage (In-service)	
Local economy such as employment and livelihoods due to the inflow of new workers	・By contacts or employments rather than 'toleration of illegal working' currently being in Indonesia, the project promotes harmony with the people who are working as scavengers. ・To avoid conflicts with locals in the project site, the first priority of employments is local residents. When strangers are hired, the scavengers have the priority to be hired.
Infectious diseases such as HIV due to the inflow of new workers	・Hygienic education is provided for the workers and locals. ・A incidence of infection and their symptoms are regularly investigated in cooperation with the health agency of Kabupaten Bogor.
Working condition due to the generation of accidents and infections	・Arrangement and cleanness of the working places are managed. ・Safety education such as traffic safety and public health is provided for the workers and locals.
Ecosystem due to composing and landfill	・The initial stage of compositng is to produce indoors as much as possible. ・Waste to landfill is daily covered with soil.

Table 7-28(2) Mitigation Measures for Nambo

Items	Mitigation measures
Operation stage (In-service)	
Water, ground water and soil pollution, and bad odor due to leakage of the leachate	・Waterproof sheets are placed on the bottom. ・The leachate is discharged after treatments in water treatment facilities.
Water pollution, rivers and flow condition due to discharging of treated water	・Channels are set up to a big river which has enough water throughout a year. ・Balancing reservoirs are installed to adjust the quantity of discharged water.
Air pollution, noise, vibration and bad odor due to operation of waste transfer tracks	・The operation process is managed not to concentrate the operation of tracks. ・The vehicles are regularly washed and maintained. ・The trafic speed is limited. ・Sprinkling the road is performed in the dry seasons.・ ・The tracks with tanks are used to prevent leakage of leachate.
Bad odor due to presence of the waste	・The workers wear masks. ・In landfill area, daily covering with soil and regular covering with sheets are conducted.
Post-operation stage (After closing)	
Topography and soil runoff due to compression of the buried waste	・Waste are buried after compress enough.
Water, ground water and soil pollution due to leakage of the leachate	・The waterproof sheets are placed on the bottom. ・For a certain period after stopping the operation, the leachate is discharged after treatments in the water treatment facilities.
Water pollution, rivers and flow condition due to discharging of treated water	・The channels are set up to a big river which has enough water throughout a year. ・The balancing reservoirs are installed to adjust the quantity of the discharged water.

7.6 Evaluation of the Impacts and Comparison of Alternatives

7.6.1 Evaluation of the Impacts

However the impacts of the projects are significant for some items, they are possible to be avoided or reduced by the implementation of the mitigation measures. Therefore, it is evaluated that the impacts of the projects will not significant negative.

But, the impacts of some items are not clear and some items cause significant impacts without mitigation measures. For that reason, the monitoring plans are formulated and the monitoring surveys are regularly implemented.

7.6.2 Comparison of Alternatives

Consideration of alternatives to the projects has been carried out by the West Java government when the master plans are developed. Several candidates has been compared their conditions in compliance with Indonesan national standards (SNI). SNI used in selecting the location of the FDSs is SNI 03-3241-1994, which is composed of evaluation items for general (social aspects) and physical environment.

(1) Legok Nangka

Since it was difficult to secure candidates around the project site of Legok Nangka, only two sites were compared. One is the current project site and the other is Pasir Citiis which locates in the southwest of the current project site. 5 items for general and 17 items of physical environments were evaluated in accordance with SNI, and the total evaluation was determined based on the score and the weight of each item. As a result of comparison, the score of Legok Nangka is relatively higher because Pasir Citiis is close to water sources and a part of Legok Nangka is owned by public. Ultimately Legok Nangka was selected.

Table 7-29(1) Evaluation of the Candidates in Accordance with SNI 03-3241-1994

No	Evaluation items	Weight	Score	Pasir Citiis	Legok Nangka
I. General					
1	Administrative boundary	5			
	a Within one administration		10	50	50
	b Beyond administrative boundary, but within a system of an integrated waste management		5		
	c Beyond administrative boundary, and outside of an integrated waste management system		1		
2	Land owners	3			
	a Central/Local government		10		30
	b Personal (single)		7	21	
	c Private company (single)		5		
	d More than one owner		3		
	e Social/religious organization		1		
3	Capacity of landfill	5			
	a More than 10 years		10	50	50
	b 5 years - 10 years		8		
	c 3 years - 5 years		5		
	d Less than 3 years		1		
4	The number of landowners	3			
	a 1 household		10	30	
	b 2 – 3 households		7		21
	c 4 – 5 households		5		
	d 6 – 10 households		3		
	e More than 10 households		1		
5	Public participation	3			
	a Active		-		
	b Passive		5		15
	c Negotiations		1	3	
Sub-total of I				154	166
II. Physical environments					
1	Land (upper than ground water)	5			
	a Coefficient of permeability :less than 10^{-9}cm/s		10		
	b Coefficient of permeability :10^{-9}cm/sec - 10^{-6}cm/s		7		
	c Coefficient of permeability : more than 10^{-6}cm/s		1	5	5

Table 7-29(2) Evaluation of the Candidates in Accordance with SNI 03-3241-1994

No	Evaluation items	Weigh t	Score	Pasir Citiis	Legok Nangka
II. Physical environments					
2	Ground water	5			
	a Coefficient of permeability is less than 10^{-6}cm/s, and the groundwater level is deeper than 10m		10		
	b Coefficient of permeability is less than 10^{-6}cm/s, and the groundwater level is shallower than 10m		8		
	c Coefficient of permeability is between 10^{-6}cm/s and 10^{-4}cm/s and the groundwater level is deeper than 10m		3		
	d Coefficient of permeability is between 10^{-6}cm/s and 10^{-4}cm/s and the groundwater level is shallower than 10m		1	5	5
3	Groundwater flow system	3			
	a Discharge area / Local		10		
	b Recharge area and local discharge area		5		
	c Regional and local recharge area		1	3	3
4	Relation to the use of groundwater	3			
	a Possibility to limit the use of low hydraulic		10		
	b Projected to be used with hydraulic limit		5		
	c Projected to be used without hydraulic limit		1	3	3
5	Danger of flood	2			
	a No denger		10	20	20
	b possibility > 25 years		5		
	c possibility > 25 years (without technology)		-		
6	Ground covering	4			
	a Enough		10	40	40
	b Enough to a half of lifespan		5		
	c Nothing		1		
7	Rainfall	3			
	a Less than 500mm/year		10		
	b 500mm/year - 1000mm/year		5		
	c More than 1000mm/year		1	3	3

Table 7-29(3) Evaluation of the Candidates in Accordance with SNI 03-3241-1994

No	Evaluation items	Weigh t	Score	Pasir Citiis	Legok Nangka
II. Physical environments					
8	Road condition	5			
	a flat with good condition		10		
	b flat with bad condition		5		
	c Up and down		1	5	5
9	Waste transportation (one way)	5			
	a Less than 15 mitutes from garbage transfer station		10		
	b 16 mitutes – 30 mitutes from garbage transfer station		8		
	c 31 mitutes – 60 mitutes from garbage transfer station		3	15	15
	d More than 60 mitutes from garbage transfer station		1		
10	Access roads	4			
	a Transfer tracks do not go through settlements		10		
	b Transfer tracks go through settlements in which population density is less than 300 persons/ha		5	20	20
	c Transfer tracks go through settlements in which population density is more than 300 persons/ha		1		
11	Traffic	3			
	a Located 500m from a main road		10	30	30
	b The distance from a main road with low traffic is less than 500m		8		
	c The distance from a main road with high traffic is less than 500m		3		
	d Located near a main road with high traffic		1		
12	Land use	5			
	a Little impact on a land use around		10		
	b Some impacts on a land use around		5	25	25
	c Big impacts on a land use around		1		
13	Farming	3			
	a No farmland		10		
	b No impact on farmlands around		5	15	15
	c Negative impacts on farmlands around		1		
	d Farmlands		1		

Table 7-29(4) Evaluation of the Candidates in Accordance with SNI 03-3241-1994

No	Evaluation items	Weigh t	Score	Pasir Citiis	Legok Nangka
II. Physical environments					
14	Conservation area	2			
	a No protected area and no conservation area around		10	20	20
	b No impact on protected area and conservation area		1		
	c Some impact on protected area and conservation area		1		
15	Habitat	3			
	a Low value for habitat		10	30	30
	b High value for habitat		5		
	c Critical habitat		1		
16	Noise and bad odor	2			
	a Buffer zone		10		20
	b Limited buffer zone		5		
	c No buffer zone		1	2	
17	Landscape	3			
	a Landfilling operations are not visible from outside.		10		30
	b Landfilling operations are slightly visible from outside.		5		
	c Landfilling operations are visible from outside.		1	3	
Sub-total of II				244	289
Total				395	455

(2) Nambo

Around the project site of Nambo, 6 candidates (Nambo, Candali, Kp.Wates, Gorowong, Kp.Baru, PasirGaok) have been compared taking into account physical environments of the entire Kabupaten Bogor based on a method established in 1980. Nambo was chosen because of following reasons.

- A permeability of soil is low and it is difficult to penetrate water into ground.
- Since land is owned by National forest company, there is no need for compensation relating to land acquisition.

Table 7-30 Comparison of the Candidates

No	Items	Nambo	Candali	Kp.Wates	Gorowong	Kp.Baru	PasirGaok
1	Slope	0–5%	0–5%	5–15%	0–5%	0–5%	0–10%
2	Foundation rock	Clay stone	Tufa	Tufa pasiran	Clay stone	Clay stone	Tufa
3	Type of soil	Clay	Clay tufa	Silt tufa	Clay	Clay	Clay tufa
4	Permeability	10^{-6} cm/s	10^{-6} cm/s	10^{-5} cm/s	10^{-6} cm/s	10^{-6} cm/s	10^{-5} cm/s
5	Groundwater level	Deeper than 10m	5–7m	6m	Deeper than 10m	5–7m	3–4m
6	Reservoir area	Non	Non	Non	Non	Non	Non
7	Rapids area	Non	Non	Non	Non	Non	Non
8	Land stability	Stable	Stable	Stable	Stable	Stable	Stable
9	Distance from a big river	More than 1km	300m	150 –300m	150 –300m	150 –300m	75–150m
10	Distance from wells	Very far	500m	500m	500m	500m	500m
11	Distance from a settlement	More than 1km	More than 500m	More than 500m	More than 500m	More than 500m	500m
12	Distance from a main road	More than 1km	More than 1km	500m	500m	1km	1km
13	Current land use	Dry rice field	Dry rice field	Rubber plantation	Rubber plantation and Dry rice field	Dry rice field	mixed farm

7.7 Monitoring Plans (Structers and Methods)

7.7.1 Monitoring Items and their Methods

Monitoring items and their methods are shown in Table 7-31.

For the project site of Legok Nangka, the monitoring items are 5 which are water quality of the river, quality of groundwater, soil pollution, topography and ecosystem. For the project site of Nambo, the items are 6 which are air quality, water quality of the river, quality of groundwater, soil pollution, topography and ecosystem.

The monitoring methods will be adopted suitable methods taking local conditions into account.

If significant impacts such as pollution will be identified as a result of monitoring surveys, additional mitigation measures will be discussed and implemented to reduce the impacts.

Table 7-31 Monitoring Items and these Methods

Items			Site	Methods
1	Air quality	Dust CO NO_2 SO_2	Nambo	Air is sampled at the height of pollutant generation on road boundaries near a protected target which is affected the most by the project. And then the sampled air is analized in a laboratory.
2	Water quality of rivers	Items shown in PP No.82 of 2001	Both sites	Water is sampled at the same point as the baseline surveys which are in rivers discharged the treated water and are springs and wells for locals. And then the sampled water is analized in a laboratory.
3	Quality of ground water	Items shown in Permenkes No416 /MenKes/PER/IX/1990		
4	Soil pollution	Items concerned with soil pollution shown in Permenkes No416 /MenKes/PER/IX/1990	Both sites	The monitoring surveys of soil pollution is implemented when significant pollution of groundwater is comfirmed. Soil between the landfill area and the sampling points of groundwater is sampled, and then is analized in a laboratory.
5	Topography	Situation of Landslide	Both sites	Situation of landslide is confirmed by visual surveys.
6	Ecosystem	Situation of species	Both sites	Abnormal breeding and death of fauna and flora are confirmed by visual surveys.

7.7.2 Monitoring Points and their Frequencies

The monitoring points and their frequencies are shown in Table 7-32. The monitoring in the construction stage and the operation stage will be modified accordingly in consideration of the contents of the project activities.

Table 7-32 Monitoring Points and their Frequencies

Items		Monitoring points		Frequency		
				Construction stage	Operation stage	Post-operation stage
1	Air quality	Nambo	Along the access roads ・Settlements of Bantar Jati ・Settlements of Lulut	Twice a year	Twice a year	-
2	Water quality of rivers	Legok Nangka	Rivers discharged the treated water ・Cadasgantung River ・Cipancar River	-	Four times a year ・Twice in dry season ・Twice in rainy season	Twice a year ・Once in dry season ・Once in rainy season (for 10 years)
		Nambo	Rivers discharged the treated water ・CiLeungsi River, Upstream and downstream of the junction with Cijambe River			
3	Quality of groundwater	Legok Nangka	Springs of the settlements nearby ・Cikole Dua	-	Four times a year	Twice a year (for 10 years)
		Nambo	Wells of settlements nearby ・Cikukulu			
4	Soil pollution	Legok Nangka	Between the landfill area and the sampling points of groundwater	-	As needed	
		Nambo				
5	Topography	Legok Nangka	Landfill area	Twice a year	-	Twice a year (for 10 years)
		Nambo				
6	Ecosystem	Legok Nangka	All over the project sites	Properly		Properly (for 6 months)
		Nambo				

7.7.3 Criteria of Evaluation

Criteria of evaluation of monitoring results are shown inTable 7-33, Table 7-34 and Table 7-35. Environmental standards are adopted for Air quality.

Table 7-33 Environmental Standards of Air Quality [μ g/Nm^3]

	One hour	24 hours	One year
TSP	-	230	90
SO_2	900	365	600
CO	30,000	10,000	-
NO_2	400	150	100

Source : 'Government Regulations about air pollution Control'
(Government Regulation No.41, 1999)

For water quality of rivers, environmental standards of water (Category II) are basically adopted. Some items whose criteria are not required refer to the standards of Category I.

Table 7-34 Environmental Standards of Water (Extract)

Items	Unit	Category		Notes
		I	II	
Water temperature	°C	±3		Maximum value of temperature change from natural conditions
TDS	mg/L	1,000		Maximum value
TSS		50		Maximum value
pH	-	6-9		Range
BOD	mg/L	2	3	Maximum value
COD		10	25	Maximum value
DO		6	4	Maximum value
NO_3 (N)		10		Maximum value
NH_3-N		0.5	-	Maximum value
NO_2 (N)		0.06		Maximum value

*'-' means the criteria are not required.
Source : 'Management of Water Quality and Control over Water Pollution'
(Government Regulation No. 82, 2001)

Criteria for groundwater are standards of drinking water in maximum acceptable level provided by the ministry of health.

Table 7-35 Maximum Acceptable Levels of Drinking Water (Extract)

Items	Unit	Maximum acceptable level for drinking water	Notes
Water temperature	°C	±3	Temperature change from natural conditions
TDS	mg/L	1,000	
Smell	-	No smell	
Taste	-	No taste	
NO_3 (N)	mg/L	10	
NO_2 (N)		1.0	
Number of Coliforms	parcel/100ml	0	

Source : 'Conditions and Control of Water Quality'
(Regulation of the ministry of health No.416, 1990)

7.7.4 Implementation Structures

The environmental monitorings are basically conducted by Human settlement and Housing agency of West Java, and are supervised by Environmental management agency of Kabupaten Bandung and Kabupaten Bogor. Therefore, Human settlement and Housing agency of West Java will report the implementation of the monitorings to Environmental management agencies of each Kabupaten.

The monitoring surveys of air quality in Nambo are implemented in cooperation with concerned agencies in charge of garbage collection in Kabupaten Bogor, Bogor city and Depok city.

7.8 Clarification of Budget, Financial Resources and Implementation Structures

The EIA procedures of the projects are carried out by Human settlement and Housing agency of West Java with the budget of West Java Province.
The financial resources and the implementation structures of the mitigation measurements for the future are embodied under the consultation of West Java government and SPC.

7.9 Support to Hold the Stakeholder Meetings (Purpose, Participants, and Its Contents)

7.9.1 The Flow of Stakeholder Meetings

Stakeholder meetings have been conducted in each stage of the projects such as the feasibility studys, the detailed designs, the EIAs, and the land acquisitions.

In the later part of the series of the stakeholder meetings, community development plans based on the implementation of the projects are explained and are coordinated.

Community development plans are composed of 3 main topics which are infrastructure development, economic development and social development, and are to carry out the following development in each community.

1. Infractructure	:	To develop infrastructures such as roads, sewerage, waterworks for washing and the public toilet.
2. Economic	:	To assist financially such as assistance to association and small companies.
3. Social	:	To support socially such as scholarships, vocational training of recycling, composting and operating of machines, issuance to children under 5 years old

Community action plans are principle how project owners will implement these development actually in response to the community development plans. They are the plans aimed implementation after coordicating the roles with concerned organizations.

7.9.2 Legok Nangka

Around the project site of Legok Nangka, the stakeholder meetings have been conducted continuously since 2007 by Human settlement and Housing agency of West Java with the progress of the project. The surrounding villages including the downstream regions which are Desa Simpen Kidul and Desa Simpen Kaler in Kab. Garut have agreed with the project and its location.

The records of the stakeholder meetings conducted in the past are not left. The outlines of the stakeholder meetings conducted in recent years about the community development plans and the community action plans are shown in Table 7-36.

In the meetings, an overview of the project such as the contents and constructions of infrastructure associated with the project has been provided. In addiction, the concerns of the residents such as how to handle garbage and the influence of water sources have been discribed. Therefore the risks of the project are well known.

Moreover, public consultations were held more than once. The residents include women are well known the contents and the influence of the project.

Table 7-36 (1) Outlines of the Stakeholder Meetings for Legok Nangka

No	Date	Place	Participants	Contents	Result	Plans from now on
1	April, 2009	Meeting room of Kecamatan Nagreg	KIMRUM, P3JB, BAPPEDA, DISPERTASIH, BPN, Desa Nagreg, Desa Ciherang, Community	Socialization development concerned with the project	Community (landowners) in the project site acknowledged and agreed the development in FDS, and approved the land acquisition.	Meetings in order to socialize with the community will begin immediately.
2	May, 2009	Meeting room of Kecamatan Nagreg	KIMRUM, P3JB, BPMKL, Kecamatan Nagreg	Socialization development concerned with the project	Community aspirations: 1)The public concerns about the impacts. 2)Replacement of clean water sources (9 points) are disrupted. 3)Developments of facilities and infrastructure are needed as compensation. 4)Attention to the potential impacts of the project.	The Legok Nangka FDS will be well managed according to existing regulations. Improvements of facilities will be discussed further in the preparation of DED and EIA.
3	March, 2010	KIMRUM	BPSR in KIMRUM, NGO joint forum observer of Nagreg Environment NGO	Socialization development concerned with the project	1)The nees of people aroun Jatinangor for landfills is very high. 2)Methods of processing waste in the FDS is not using the open dumping. 3)Development process of the project should not interfere with the site Kendan.	Socialization needs to be done further by using the tools of leaflet, poster or other communication media.

* KIMRUM : Human Settlement and Housing Agency of West Java
BPSR : Regional Solid Waste Management Division, P3JB : BPSR previous organization,
BAPPEDA : Regional Development Planning Agency of West Java
DISPERTASIH : Housing, Spatial and Cleansing Agency of Kabupaten Bandung
BPN : National Legislative Board, BPMKL : Construction and Environmental Quality Testing Division

Table 7-36(2) Outlines of the Stakeholder Meetings for Legok Nangka

No	Date	Place	Participants	Contents	Result	Plans from now on
4	April, 2010	KIMRUM	Archaeologists Association, BPLHD, KIMRUM, DISPARBUD, BPLH, DISDIKBUD, Kecamatan Nagreg, Desa Nagreg, Desa Ciherang, Culture Image Community, Community History (NGO)	Research on the site KENDAN Evaluation of the site KENDAN in the development of the project	1)Necessary to identify the historical values of the site KENDAN. 2)Preservation of historical values is set in Law No.5, 1992 and the regulation of West Java No.7, 2003.	Need to set up working groups to draw up a plan to preserve the site KENDAN. ・Delineation of the site. ・Master Plan to handle cultural heritage.
5	June, 2010	Meeting room of Kecamatan Nagreg	BPN, DISPERTASIH, DISRANBUNHUT, Kabupaten Bandung, Kecamatan Nagreg, Desa Nagreg, Desa Ciherang	Evaluation of land ownership Land acquisition nominative list	Land procurement committee has submitted and declared data, as a result of the inventory identification to the landowner.	For a submissions community (landowners), the cemetery are planned to re-build with village officials.
6	July, 2010				The committee has submitted land acquisition.	
7	February, 2011	Meeting room of Desa Simpen Kaler	Desa Simpen Kaler, NGO, PKK, Community	Community action plan	Communiy development plans for Desa Simpen Kaler was received.	In 2011, BPSR will organize the preparation of the implementation of the community action plan as well as structuring the environment in Desa Simpen Kaler.

* BPLHD : Environmental Management Agency of West Java
BPLH : Environmental Management Agency of Kabupaten Bandung
PKK : Family Welfare Program

7.9.3 Nambo

Around the project site of Nambo, the stakeholder meetings have been conducted continuously since 2008 with the progress of the project.

The records of the stakeholder meetings conducted in the past are not left. The outlines of the stakeholder meetings conducted in recent years about the community development plans and the community action plans are shown in Table 7-37.

Moreover, public consultations were held more than once. The residents include women are well known the contents and the influence of the project.

Table 7-37 Outlines of the Stakeholder Meetings for Nambo

No	Date	Place	Participants	Contents	Result	Plans from now on
1	July, 2009	Meeting room of Kecamatan Klapanunggal	Desa Nambo, Desa Lulut, Related institutions	EIA and socialization of the project	Information about the project may be communicated.	To implement EIA
2	June, 2011	Meeting room of Kecamatan Klapanunggal	BPSR of KIMRUM, BAPPEDA, BPLHD, Cleaning department of Kabupaten Bogor, Desa Nambo, Desa Lulut, Desa Banjar tari, Desa Leuwi Kalet, Desa Gunung Putri	Development plan of the project	More clarify development plans. All parties are ready to accept the project.	Comfirm desires of 3 Desa to make the process of Community action plan (Bantar Jati, Leuwi Karet, Gunung Putri).

7.10 Land Acquisition

7.10.1 Progress of the Land Acquisition

The project site of Legok Nangka is totally 75 ha and mainly used as a field. Therefore, there is no involuntary resettlement because no person is living in the site. All of land owners in the site have agreed with the project. The procedure of land acquisitions including payments has been finished by 2010.

The project site of Nambo is totally 100 ha. The entire site is owned by National Forest Company under the Ministry of Forestry. Therefore, there are no involuntary resettlement and no compensation for land owners. The land acquisition is not trade with money but with the land which is same natural environment and same area in the same regency. Land exchanging procedure is going on and almost agreed between the government of West Java and the National Forest Company.

The National Forest Company agreed to develop 10 ha of 100 ha although the land exchange has not be finished. Kabupaten Bogor is developing the land of 10 ha.

Kabupaten Bogor has a 5ha-land adjoining to the project site. Kabupaten Bogor and West Java agreed to use the 5ha-land for this project.

7.10.2 The compensation Policy and the Methods

(1) Basic Policy

Based on land acquisition regulation for public purposes, land, plantations and buildings are compensated if any.

(2) Procedure of the Compensation for Lost Properties based on Replacement Costs

Farmlands

To settle on the land prices, an independent consultant are hired to investigate relevant prices based on prices determined by a tax agency and market prices, then based on the consultant result, Negotiation of the price is carried out with land owners, subsequently the head of the land acqusition comittee will formally establish the price.

For the project site of Legok Nangka, farmlands are categorized 3 classes. Compensation rates of each class are, class1 : Rp132,000/m^2, Class2 : Rp46,000/m^2 and Class3 : Rp30,000/m^2. If the land were owned by public, the compensation must be used to purchase alternative land, and the compensation rates make them get wider land. If the land were private land, a use of the compensation is not limited. Even the land is private, the compensation rates are as same as public land and are enough to get alternative land.

Plantation and buildings

To settle on the building and plantation compensation, the land acquistion comittee apoint a team to measure and identified related bulidings and plantation. Then based on standard prices based on mayor/regent decision, the comittee announce the compensation rates. The building owner or farmer could negotiate the conpensation rates based on the condition of the building or the number of plants. Negotiation of the compensation rates is conducted at the same time with negotiation for land price.

(3) Measures for Livelihood Rehabilitation to Improve Living Standard of Project Affected People

Based on the act of Rubbish Management (Law No.18, 2008), local peoples who affected by the project can recieve the compensation. But, measurements or identification for the affected people are still under discussion since no technical guidelines yet. Therefore, the methods of the compensation are decided by the discussion with concerned organizations.

(4) Grievance Mechanism

Based on the act of Rubbish Management (Law No.18, 2008), the FDS manager should handle complaints directly and create respond immediately. There is no technical guidelines yet, specific term and the way to deal with are not fixed.

The land acquisition for the Legok Nangka FDS has already finished and no complaint are generated now.

(5) Identification of Responsible Organization, and their Obligation

For public purposes, local government (Kabupaten Bandung for the Legok Nangka FDS) appoint a comittee for land acquisition. The committee is composed of land agency, law bureau, housing agency, plantation agency and related sub-district or village governments. Their obligation is to conduct public consultations, price negotiation and establishment, settle on paying mechanism and draw land acquisition map.

(6) Costs and Financial Resources

Total expenditure for land acquisition in Legok Nangka was Rp. 28.744.022.940 for total 74.6 ha. All of them were funded budget fiscal year 2009 and 2010 by Provincial Government of West Java.

7.11 Review of Existing Studies

7.11.1 The Existing EIA

The EIAs in Indonesia is composed of 4 books which are the report of implement plan (KA-ANDAL), the report of EIA (ANDAL), the reports of environmental management plan (RKL) and the reports of environmental monitoring plan (RPL). In the RKL, the mitigation measurements are examined.

The environmental management plan, and the prediction and the evaluation of impacts for environment are arranged items in each stage which are before construction, during construction, during operation, and after operation.

(1) Legok Nangka

The outlines of ANDAL are shown in the followings.

Created by: Human Settlement and Housing Agency of West Java
Condition of Approval: In July or August 2011, it will be approved.
Approval agency: Environmental Management Agency of Kabupaten Bandung

Table 7-38(1) The Outlines of ANDAL

Items	Outlines of Evaluation
Construction Stage	
Air Quality caused by Tools and Material Mobilization	Environmental management and monitoring will be conducted because air quality within 60ha around the project site and along roads, especially dust concentration, will exceed the standard.
Noise	While the impact of noise from construction machineries will not be so significant, the impact of noise from transporters will be significant (noise level at the road side will be 62.9 dB(A) (70dB(A) on standard), and 50.5 dB(A) (55 dB(A) on standard) at ordinary environment). Because of this, appropriate environmental management will be conducted.
Surface Water caused by Tools and Material Mobilization	Although 20 percent of soil eroded by rainfall will be entering into surface water, the impact intensity will be small because construction period is limited.
Operation Stage	
Air Quality	It is predicted that concentration of CO_2, CO, NOx, SOx, Pb, HC at the roadside will be increased in operation stage because of increasing of 214 vehicles for waste transport a day (27 vehicles increase an hour). It is also predicted that methane and CO_2, will be generated from sanitary landfills, and bad odor will be generated in processing stage.

Table 7-38(2) The Outlines of ANDAL

Items	Outlines of Evaluation
Operation Stage	
Noise	Power level of waste transporter is 80–85dB(A), it is predicted that noise level at the roadside will be maximum 75–95dB(A) when waste transporters are passed by.
Surface Water	BOD concentration of the leachate from the sanitary landfill will be 2,000–3,000mg/L, also COD will be3,000–4,500mg/L. Because these values exceed standard, leachate treatment facilities will be installed. And leachate will be processed by them.
Grand Water	BOD concentration of the leachate from the sanitary landfill will be 2,000–3,000mg/L, also COD will be3,000–4,500mg/L. Because these values exceed standard, leachate treatment facilities will be installed. And leachate will be processed by them.
Quality of Soil	People living around the site use grand water as drinking water, contaminating soil causes grand water contamination they use. Leachate processing facility will be installed and leachate will be processed by them.
Job Fields and Job Opportunity	The effects of creating more employment opportunities such as employment as a recycler will continue for long time and regarded as a good influence.
Security and Public Order Problem	The competition between the immigrant scavengers and the local scavengers gradually or rapidly cause social conflict. The needs for some type of managements are described.
Post-operation Stage	
Air Quality and Noise	The activity of equipment and construction dismantling and demobilization will be conducted short affection. The air quality will be gradually recovered since there would be no more activity of waste processing.
Surface and Ground Water Quality	The leachate water will be produced after the operational activity. The impact will continue in the post-operation stage.
Soil Quality	
Re-vegetation and Re-forestation	Re-forestation and re-vegetation will bring positive impact to vegetation covering, CO_2 absorption, oxygen supply increase, biodiversity increase and recovered habitat for land fauna.
Leachate Water Production	The leachate water will be produced after the general operation activity is closed. The operator must be responsible to treat water for 5 years after the other operational activities are closed.

The outlines of RKL are shown in Table 7-39.

Table 7-39(1) The Outlines of RKL

Items	Outlines of Management
Planning Stage	
Anxiety and concern of the locals due to the project	・In order to minimize the anxiety of the locals, the correct information is provided.
Anxiety and concern of the locals due to the land acquisition	・Land Acquisition committee is set up, and the procedure is proceeded based on the law.
Construction Stage	
Air quality due to material mobilization, land development and construction works	・The construction vehicles are traveling at 40 km per hour or less. ・The roads which the construction vehicles pass frequently are sprinkled regularly. ・In order to prevent the spread of dust from the project site, temporary enclosures of 2m are set up. ・To prevent falling and scattering the materials, the construction vehicles are coverd with canvas.
Water quality due to material mobilization, land development and construction works	・To maintain the stability of slopes in the slope area,the green buffer zone is maximized. ・Balancing reservoirs are created and rainwater are temporary stored.
Soil runoff due to material mobilization, land development and construction works	・Soil works are carried out during the dry season. ・A drainage system on both sides of the road is created. ・To increase the stability of the soil, retaining walls are placed.
Expanding employment opportunities	・Recruit information is provided to the community of the village level. ・Creation of job opportunities for the locals are prioritized. ・Vocational education and trainings are conducted for locals to acquirethe necessary knowledge and skills.
Anxiety of the locals	・The council is established to hear opinions and complaintsof the locals in addition to providing information.
Operation Stage	
Air quality due to waste mobilization	・To prevent falling and scattering the waste, the tracks are coverd with nets.
Water quality	・Leachate treatment facilities are built. ・The treatment facilities and leachate collection lines are regularly mainteined. ・Drains for leachate are constructed.

Table 7-39(2) The Outlines of RKL

Items	Outlines of Management
Operation Stage	
Ground water	・Impermeable layers are installed on the basis of sanitary landfill. ・The drainage systems are regularly maintained.
Expanding employment opportunities	・Recruit information is provided to the community of the village level. ・Creation of job opportunities for the locals are prioritized. ・Vocational education and trainings are conducted for locals to acquirethe necessary knowledge and skills.
Anxiety of the locals	・The council is established to hear opinions and complaintsof the locals in addition to providing information.
Business opportunity	・Knowledge of the process of recycling, the role of people, goods prices are transferred to people who are interested in.
Post-Operation Stage	
Air quality due to the dismantling of the facility	・Planting in buffer zone and elsewhere is done. ・Watering is regularly performed.
Surface water, ground water, and Soil quality	・Maintenance of the impermeable layers is continued. ・The leachate treatments and their monitorings are continued.

(2) Nambo

The outlines of ANDAL are shown in the followings.

Created by : Human Settlement and Housing Agency of West Java
Condition of Approval : Approved 12th November, 2010
(An approval letter : Number :658.1/61/Kpts-DAM/BLH)
Approval agency : Environment Agency of Kabupaten Bogor

Table 7-40 (1) The Outlines of ANDAL

Items	Outlines of Evaluation
Construction Stage	
Employments	During the construction stage of 2 years, locals can earn a steady income (Rp.40,000/day) by being hired.
Planting	Planting has posibilities to prevent erosion and landslides, and to reduce air pollution, noise and bad odor. It is also expected recovery of vegetation phase and animal habitats.

Table 7-40(2) The Outlines of ANDAL

Items	Outlines of Evaluation
Construction Stage	
Air quality	Because of the transport tracks driving, it is expected that NOx,SO_2, CO_2 and dust are generated. Air quality is degreded by dust generation because of using bulldozers and back hoes.
Noise	Noise increases because about 40 tracks transporting comstruction materials pass through per hour.
Soil erosion	There is a probability of soil erosion due to Slope excavation and digging for the construction of facilities. Soil erosion due to rainfall is expected.
Operation Stage	
Employment	Job opportunities in the operation stage are 132. It becomes the guarantee of long-term safety income (Rp. 600,000 ～ 1,200,000/month) for the locals. The locals of 75 households in the surrounding villages can earn the amount of the above. In employment, jealousy and conflicts between immigrants (such as scavengers) and locals may occur.
Air quality	Dust and bad odor around the project site are generated, because 3144.8m^3 of waste per day are transferd in the site. Air quality is affected by the transport vehicles (CH_4, H_2S, NH_3).
Noise	Noise increases due to the transportation and landfill of waste.
Ecosystem	The accumulation of waste generates pathogenic mediating organisms such as flies, mosquitoes and rats.
Groundwater	The quality of discharged wate from the landfill are followings. BOD concentration is 5000mg/L, COD concentration is 7000mg/L, pH is a range of 4.5 to 7.5, SS concentration is 200mg/L, and TOC concentration is 1500mg/L. The quality of water become worse because of the discharged water from the landfill site. Leachate from the landfill site flow into ponds.
Soil	Leachate from the landfill site penetrates into ground and makes soil quality be worse.

Table 7-40(3) The Outlines of ANDAL

Items	Outlines of Evaluation
Post-Operation Stage	
Groundwater	The quality of discharged wate from the landfill are followings. BOD concentration is 5000mg/L, COD concentration is 7000mg/L, pH is a range of 4.5 to 7.5, SS concentration is 200mg/L, and TOC concentration is 1500mg/L. The quality of water become worse because of the discharged water from the landfill site. Leachate from the landfill site flow into ponds.
Soil	Leachate from the landfill site penetrates into ground and makes soil quality be worse.
Planting	Planting has posibilities to prevent erosion and landslides, and to reduce air pollution, noise and bad odor. It is expected recovery of animal (especially birds, mammals, amphibians and reptiles) habitats, feeding grounds and the shelter. It is also expected to become a new habitat for endemic species that are protected by law.
Employment	Employees hired by the government move to other sites. Employees hired by private lose their job and their source of income.

The outlines of RKL are shown in Table 7-41.

Table 7-41(1) The Outlines of RKL

Items	Outlines of Management
Construction Stage	
Planting	・If there is space in and around the site, trees are planted.
Air quality	・Transporting vehicles are equipped containers to avoid spills of leachate on the surrounding environment. ・Drivers of the vehicles wear the masks. ・Temperature falls thanks to planting at the side of the transportation roads ・In order to reduce the dust, sprinkle and speed limit of the transporting vehicles (40km per hour) are carried out.
Operation Stage	
Soil erosion	・Discharging water facilities are provided. ・Soil is compressed. ・A preliminary soil luggage is created, managed. And the soil is carried to out side. ・Enbankments are carried out during the dry season. ・For environmental management, a cross-sectional view of the landscape is created. ・Terraces are created and plant grass and bamboo there. ・Grass is planted around the project site.
Road condition	・Before the heavy equipments pass through, the roads are improved. ・Even if the transportation is not finished, damage of the roads are repaired immediately. ・The extra load put on the roads is avoided by finishing the transportation within the period scheduled.
Air quality	・To prevent falling and scattering the waste, the tracks are coverd with nets.
Noise	・Noise is reduced by the management of the accumulation of waste and vehicle running.
Water	・The leachate treatment facilities are installed. ・The leachate is accumulated periodically and is discharged through pipes. ・Channels for the leachate are created to prevent leakage outside of the project site.

Table 7-41(2) The Outlines of RKL

Items	Outlines of Management
Post-Operation Stage	
Groundwater	・The water resistant layer is maintained to prevent the leachate runoff. ・The water treatment facilities are properly maintained.
Employment	・Education is provided to develop human resources to other business for the locals and migrants. ・'Cooperative' is created and managed by the locals and migrants. ・Not only the economic and technical training but also education of mental health are carried out to consider the measure asa coexistence with other people.
Water	・The leachate treatment facilities are maintained after the operation is completed.
Planting	・Holes are prepared in advance and put the soil there. It becomes possible to plant in the land calcified ・Before foresting, the fertility of the soil is checked. When it is not fertile, it is coped.

(3) Gap Analysis of Existing EIA and JICA GL (Lack Items of Existing EIA)

As eesults of EIA review, stakeholder meetings have been carried out multiple times at different stages of the planning phase and EIA phase. Not only the project site, but also the surrounding villages downstream are covered. In addition, the social impacts of these villages are also considered in EIA.

For the site of administration, reforestation and continuous monitorings of water quality has been planned even after the operation has been completed.

However, predictions and evaluations in terms of the impacts of the leachate were not enough since the lack of knowledge in Indonesia. The nitrogen that is particularly a problem in Japan was not mentioned. For this reason, the predictions and the evaluations has become very simple. The current predictions, evaluations and the mitigation measures can not eliminate the effects of nitrogen. Therefore, in this study, the methods to handle the leachate were reconsidered, then to prevent underground seepage of the leachate, and to carry out appropriate treatment including nitrogen were proposed. In addition, the sites were explored, and then rivers to discharge the treated leachate were selected. The water quality of the current situation of the rivers was investigated.

Water wells and springs in the settlements nearby are also surveyed as well as the rivers discharged leachate as a preparation for monitorings and managements in the operation stage.

Because of the lack of consideration for the employment of scavengers who move from the existing landfill, sampling surveys targeted scavengers in the existing landfill were conducted.

Table 7-42 (1) Gap Analysis for Legok Nangka

Items	Gap analysis
Construction Stage	
Air quality due to material mobilization	It has been satisfied with Indonesian standards of air quality. But it predicted that dusts exceed the standards. The mitigation measures are feasible and its effects are expected. Therefore, it is valid.
Noise	It predicted that noise satisfy Indonesian standards. Based on the status of local settlements, it is valid.
Water quality due to material mobilization	Inpacts during construction is temporary. And possible mitigation measures are considered. Therefore, it is valid.
Operation Stage	
Air quality	It predicted that the project affects air quality. But the local settlements are away from the project site and the operation roads. Therefore, it is no problem.
Noise	It predicted that the project cause noise. But the local settlements are away from the project site and the operation roads. Therefore, it is no problem.

Table 7-42(2) Gap Analysis for Legok Nangka

Items	Gap analysis
Operation Stage	
Surface water	It predicted BOD and COD exceed Indonesian standards and considerd the mitigation measures. But the nitrogen that is a problem in Japan was not mentioned. The methods to handle the leachate were reconsidered, then to prevent underground seepage of the leachate, and to carry out appropriate treatment including nitrogen were proposed. The rivers to discharge the treated water were selected and their water quality was investigated.
Groundwater	It predicted BOD and COD exceed Indonesian standards and considerd the mitigation measures. But, Water uses in the settlements nearby are studied as a preparation for monitorings and managements in the operation stage. The current water quality of water place was surveyed.
Soil quality	The leachate treatments are considerd taking water use in the surrounding settlements into consideration. But the nitorogen was the lack of consideration. The methods of the treatments are reconsidered.
The wide of jobs and job opportunities	Provision of recruit information to the local village level and vocational training are examined. But a mention of scavengers is missing. Therefore, sampling interviews targeted scavengers in the existing disposal sites were implemented.
Safety and morals	The mitigation measures to reduce friction with the locals and migrants such as prior employments of the locals were considered. Therefore it is valid.
Post-operation Stage	
Air quality and noise	Temporary impacts during decommissioning and feasible mitigation measures were considered. Therefore it is valid.
Surface water and groundwater	It predicted the impacts would continue after the operation is finished. And the monitorings were planned. It is valid. However, as same as the operation stage, due to the lack of knowledge about the nitrogen, the monitoring plans are revised.
Soil quality	As with water quality, it predicted the impacts after the operation is finished. But because of the monitoring plans were only for water quality, the monitoring of soil is considered depending on the situation.
reforestation of vacant lots	It predicted the positive impacts qualitatively. It is valid.
Generation of leachate	It predicted generation of the leachate continues for 5 years after the operation is finished. The monitorings are planned. It is valid. However, as same as the operation stage, due to the lack of knowledge about the nitrogen, the monitoring plans are revised.

Table 7-43(1) Gap Analysis for Nambo

Items	Gap analysis
Construction Stage	
Employment	It predicted the positive impacts qualitatively. It is valid.
Planting	It predicted the positive impacts qualitatively. It is valid.
Air quality	It predicted the dusts exceed the standards. The mitigation measures are feasible and its effects are expected. So it is valid.
Noise	It predicted there are the impacts of noise. However the settlements are away from the project site and the number of construction vehicles is 40 per hour. It does not become a problem.
Soil erosion	It studied the soil erosion by rainfall. It is valid.
Operation Stage	
Employment	The mitigation measures to reduce friction with the locals and migrants such as prior employments of the locals were considered. Therefore it is valid. But a mention of scavengers is missing. Therefore, sampling interviews targeted scavengers in the existing disposal sites were implemented.
Air quality	It predicted that the project affects air quality. But the local settlements are away from the project site and the access roads are planned away from the settlements. Therefore, it is no problem.
Noise	It predicted there are the impacts of the noise. The feasible mitigation measures are considered. So it is valid.
Ecosystem	The generations of pathogenic mediating organisms are predicted. So it is valid.
Groundwater	It predicted BOD and COD exceed Indonesian standards and considerd the mitigation measures. But, Water uses in the settlements nearby are studied as a preparation for monitorings and managements in the operation stage. The current water quality of water place was surveyed.
Soil quality	It predicted soil quality would get worse because of the leachate. So it is valid. But the nitorogen was the lack of consideration. The methods of the treatments are reconsidered.

Table 7-43(2) Gap Analysis for Nambo

Items	Gap analysis
Post-operation Stage	
Groundwater	It predicted the impacts would continue after the operation is finished. And the monitorings were planned. It is valid. However, as same as the operation stage, due to the lack of knowledge about the nitrogen, the monitoring plans are revised.
Soil quality	As with water quality, it predicted the impacts after the operation is finished. But because of the monitoring plans were only for water quality, the monitoring of soil is considered depending on the situation.
Planting	It predicted the positive impacts qualitatively. It is valid.
Employment	It predicted unemployment after closing. The mitigation measures are also considered. It is valid.

7.11.2 Existing Social Studies around the Project Sites

At the selection of the project site around Legok Nangka, a social study has been carried out. The summary of the study are shown in Table 7-44.

Around the project site of Nambo, social studies have not been implemented in the past.

Table 7-44 The Summary of the Existing Study (around Legok Nangka)

Time	2007
Targeted Area	- Cota Bandung - Cota Cimahi - Kabupaten Bandung - Kabupaten Garut - Kabupaten Sumedang
Proposed Sites	- Legok Nangka - Pasar Citiis
Contents	- Workshops : Twice - Questionnaire survey
Results	- 98% of respondents have been understood the waste utilization. The main utilizations are to be made fertilizer/composts, to be sold to the merchant, and to be reused. - 67% of respondents know the plan of construction of the final disposal site. - The biggest reason to accept the plan was to increase job opportunity. Other reasons are to open business opportunity, that the village becomes moderate economically and physically. - The biggest reasons to oppose the plan were conformability problems and pollutions. Concrete reasons were water pollution, air pollution, aesthetics and decreasing of land price. - Residents' opinions about final disposal sites are depending on quality of treatment facilities. If a project owner adopts facilities like as Leiwogajah, people will oppose the plan. But, local people know fertilizer/compost are made with good treatment facilities and rests are resolved.

8. PPP Project Plan

8.1 Service Fee

It is necessary to optimize the service fee levels though the study and analysis of; the market prices for similar Waste Management PPP projects in Indonesia; the payment capacity and financial conditions of the provincial government; the flexibility of the provincial government in terms of changes in the service fees; and the waste collection fee unit prices from the residents.

(1) The Mechanism of Service Fees and Waste Collection Fees

As PPP Waste Management Project is unprecedented in the West Java Proving, there is no established mechanism for service fee payments for private business operators. Currently, for the operation of final disposal sites managed by the provincial government, the following fee collection flow is formulated.

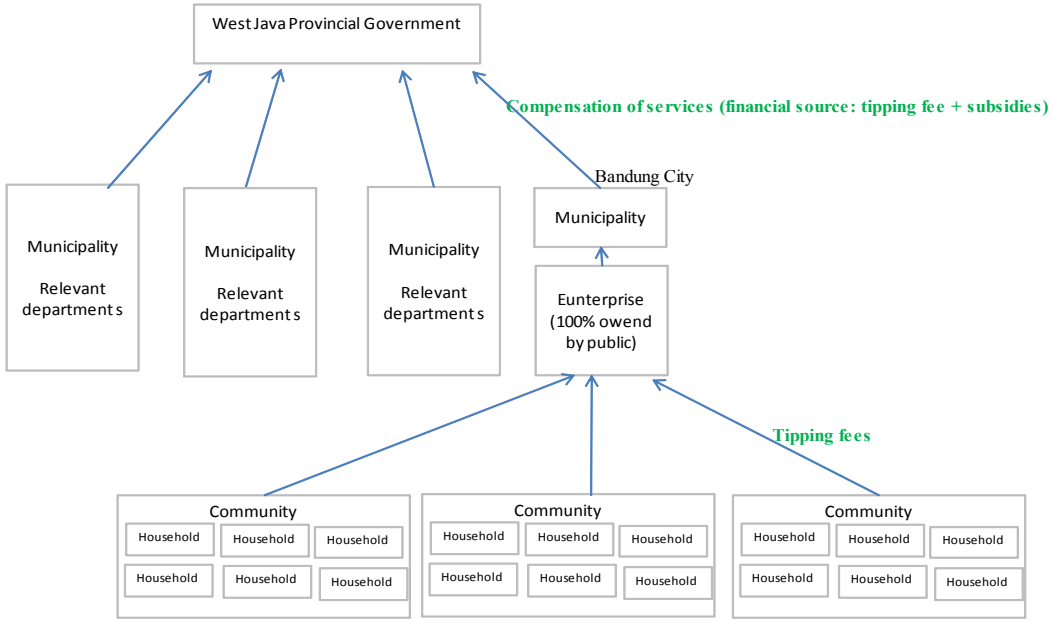


Figure 8-1 Fee Collection Flow

1) Each community collect tipping fees from users (households). Tariffs of tipping fees stipulated in the regulations of municipalities.
2) Municipalities (or enterprises owned by municipalities) have responsibilities for collections of tipping fees from communities.
3) Municipalities have obligation to make payments of Compensation for Services set in agreements. Financial sources are tipping fees. if not cover, subsidies from tax revenues, to the Provincial Government.
4) Collected Compensation for Services from Municipalities are deposited to general budget in Provincial Government as non-earmark.
5) Provincial Government make a budget for annual operational expenditure in each year and expend it.

8.2 The Financial Situation of the West Java Provincial Government

8.2.1 Brief Description of Public Financial System in Indonesia

Laws and regulations governing the implementation of the public management and financial system at the national, provincial and local levels in Indonesia, as well as the actual revenues/ expenditures are shown below. (Categories/items directly related to the waste disposal facilities are shown in bold letter.) As for the expenditure side, the government is now initiating and preparing the "Multi-Years Budgeting" for the Direct Expenditure for Investment for certain project priorities such as public infrastructure projects.

- Law no17/2003 on State Finance and Government Regulation no 58/2005 on Local-Financial Management;
- Law no 32/2004 on Decentralization and Local autonomy;
- Law no 34/2004 on Balance Fund between the central and local governments.

Table 8-1 Detailed Category of Government Revenue

CATEGORY	NOTES
GENUINE LOCAL REVENUE	
Local Taxes	Taxes collected by the Provincial Government are different from those collected by the Kabupaten/Municipal governments
Retributions	
Revenues from Local Government Owned Enterprises	The user charges (tipping fees) for solid waste public service provision are included here.
Other Revenues	
BALANCE FUND FROM CENTRAL GOVERNMENT	Funding allocation from the Central Government to the Provincial and Local authorities.
Tax and Non Tax Allocation Fund	
General Allocation Fund (DAU)	Distributed to regions based on a formula consisting of variables area of the region, number of population and other related variables.
Specific Allocation Fund (DAK)	Determined by the requests of sectors/regions and approval from the Central Government. Central Government may also allocate funds in certain regions for the purpose of national objectives.
OTHER LEGAL REVENUES	
Grant	
Contingent	
Tax Allocation Fund from other Provinces	
Allocation Fund for Special Otonomous Region	Applicable for Kabupaten and Cities
Assistant Fund from other Regions	
Other Revenues	

Table 8-2 Detailed Category of Local Taxes

Level	Category of Local Taxes
Provincial	Motor Vehicle, Change of Motor Vehicle Ownership, Motor Vehicle Gasoline, Surface Water Use, Cigarette
Kabupaten/Municipal	Hotel, Restaurant, Entertainment, Advertisement, Land/Building, Parking, Ground Water, Land Gain, Street Lighting

Table 8-3 Detailed Category of Retribution

General Category	Detailed Category
Public Service Retribution	Health Service, **Solid Waste/Cleaning Service**, Identity Card Service, Funeral Service, Public Parking Service, Market Service, Motor Vehicle Test, Fire Fighting Service, Liquid Waste Processing Service, Educational Service, Telecommunication Control Service
Other Service Retribution	Government's Assets Use, Grocery Store and Shop, Auction, Bus Terminal, Port Service, Recreation Facility, Motel, Villa
Retribution for certain Permits	Building Construction Permit, Alcoholic Beverages Permit, Permit for Disturbance, Route Permit, Production Permit

Table 8-4 Detailed Category of Government Expenditure

CATEGORY	NOTES
INDIRECT EXPENDITURE	
Salary	
Others	Includes Interest, **Subsidy**, Grants Social Assistance, Expenditure for Sharing, Financial Assistance
DIRECT EXPENDITURE	
Salary/Honorarium	
Goods & Services	Includes expenditure for operation and maintenance of waste disposal facilities.
Investments	Includes expenses for the construction of waste disposal facilities.
Others	

8.2.2 Analysis of Past and Current Financial Situation and Trend

(1) West Java Provincial Government

Revenue

Table 8-5 Average Annual Growth of Each Income Category and Their Proportion to Total Revenue of the West Java Provincial Government 2007–2009

Description	2007 (000 Rp)	2008 (000 Rp)	2009 (000 Rp)	Annual Rate of Growth (%)	Proportion to Total Revenue (%)
TOTAL REVENUE	**6,008,260,131**	**7,275,007,134**	**7,787,181,567**	**14.06**	**100.00**
GENUINE LOCAL REVENUE	**4,221,668,696**	**5,275,051,500**	**5,520,994,690**	**14.81**	**70.70**
Local Taxes	3,889,839,394	4,926,338,153	4,979,386,048	13.86	63.60
Retributions	30,807,390	35,398,710	38,008,734	11.14	0.64
Revenues from Local Government Owned Enterprises	122,316,435	138,674,865	179,835,133	21.53	2.31
Other Legal Revenues	178,705,475	174,639,775	323,764,774	41.56	4.15
BALANCE FUND FROM CENTRAL GOVERNMENT	**1,756,094,284**	**1,903,729,826**	**2,172,729,233**	**11.27**	**25.16**
Tax and Non Tax Allocation Fund	822,658,284	999,370,911	1,188,431,409	20.20	15.15
General Allocation Fund	933,436,000	904,358,915	984,297,824	2.86	10.01
OTHER LEGAL REVENUES	**30,497,150**	**96,225,804**	**93,457,644**	**106.32**	**4.14**
Allocation Fund for Special Otonomous Region*)	-	-	24,646,761	-	1.15
Assistant Fund from other Regions	9,904,917,324	14,299,481,677	10,925,216	10.39	0.43
Other Revenues	20,592,233,464	81,926,322330	57,885,665	134.25	2.56

Source: BPS West Java Provincial Government 2005-2008, 2009, 2010
Notes:
*) Applicable for Kabupatens and Municipalities

Expenditure

Table 8-6 Actual Expenditure of West Java Provincial Government 2006–2008

CATEGORY OF EXPENDITURE	2006		2007		2008	
	(000 Rp)	%	(000 Rp)	%	(000 Rp)	%
TOTAL EXPENDITURE	**4,907,738,249**	**100.00**	**5,341,776,466**	**100.00**	**6,050,017,000**	**100.00**
INDIRECT EXPENDITURE	**3,238,140,943**	**65.99**	**3,898,928,424**	**72.79**	**4,313,026,000**	**71.09**
Salary	760,462,303	15.50	714,125,564	13.17	892,348,000	14.75
Others	2,477,678,640	50.49	3,184,802,860	59.62	3,420,678,000	56.34
DIRECT EXPENDITURE	**1,669,597,306**	**34.01**	**1,442,848,042**	**27.21**	**1,736,991,000**	**28.91**
Salary/Honorarium	340,366,071	6.93	261,363,145	4.88	290,335,000	4.80
Goods & Services	698,599,050	14.23	820,793,985	15.37	1,030,521,000	17.03
Investments	630,632,185	12.85	360,690,912	6.75	416,135,000	6.88

Sourcer: Statistik Keuangan Daerah Provinsi-Provinsi di Indonesia 2005-2008, BPS

(2) Kabupaten and Municipal Governments in West Java Province

Revenue

Table 8-7 Revenues of Kabupaten/Municipal Government in West Java Province 2008

Municipality/ Kabupaten	2008						
	Total Revenue	Genuine Local Revenue		Balance Fund		Others	
	000 Rupiah	000 Rupiah	%	000 Rupiah	%	000 Rupiah	%
Kab. Bandung	1,383,144,000	132,310,000	9.57	1,118,231,000	80.85	132,603,000	9.59
Kab. Bekasi	1,192,025,272	186,182,167	15.62	873,464,310	73.28	132,378,795	11.11
Kab. Bogor	1,702,386,000	282,554,000	16.60	1,269,846,000	74.59	149,986,000	8.81
Kab. Ciamis	1,100,705,743	46,416,963	4.22	1,001,635,983	91.00	52,652,797	4.78
Kab. Cianjur	1,050,159,217	66,675,209	6.35	896,870,512	85.40	86,613,496	8.25
Kab. Cirebon	1,097,241,819	121,757,691	11.10	870,238,773	79.31	105,245,355	9.59
Kab. Garut	1,275,131,268	84,068,694	6.59	1,162,908,060	91.20	28,154,514	2.21
Kab. Indramayu	996,062,000	61,336,000	6.16	850,798,000	85.42	83,928,000	8.43
Kab. Karawang	1,069,392,279	98,488,451	9.21	854,265,000	79.88	116,638,828	10.91
Kab. Kuningan	817,462,924	45,679,466	5.59	696,033,660	85.15	75,749,798	9.27
Kab. Majalengka	850,877,935	44,613,447	5.24	731,815,228	86.01	74,449,260	8.75
Kab. Purwakarta	613,910,890	59,386,627	9.67	509,989,607	83.07	44,534,656	7.25
Kab. Subang	989,962,000	56,156,000	5.67	864,272,000	87.30	69,534,000	7.02
Kab. Sukabumi	1,210,743,928	73,960,603	6.11	1,009,931,134	83.41	126,852,191	10.48
Kab. Sumedang	854,719,779	80,193,408	9.38	701,106,707	82.03	73,419,664	8.59
Kab. Tasikmalaya	98,1445,000	32,035,000	3.26	906,044,000	92.32	43,366,000	4.42
Kota Bandung	186,6251,039	327,508,555	17.55	1,245,945,050	66.76	292,797,434	15.69
Kota Bekasi	120,1549,000	185,000,000	15.40	79,4023,000	66.08	222,526,000	18.52
Kota Bogor	648,616,000	75,792,000	11.69	495,940,000	76.46	76,884,000	11.85
Kota Cirebon	559,689,040	66,221,948	11.83	421,311,127	75.28	72,155,965	12.89
Kota Depok	795,988,872	80,425,378	10.10	565,079,346	70.99	150,484,148	18.91
Kota Sukabumi	409,002,000	47,373,000	11.58	330,400,000	80.78	31,229,000	7.64
Kota Tasikmalaya	583,611,396	59,000,174	10.11	487,089,789	83.46	37,521,433	6.43
Kota Cimahi	469,511,925	60,198,393	12.82	368,268,552	78.44	41,044,980	8.74
Kota Banjar	309,380,000	24,000,000	7.76	256,512,000	82.91	28,868,000	9.33
Kab. Bandung Barat	-	-	-	-	-	-	-

Source: Pemerintah Provinsi Jawa Barat, 2009
Notes:

Service Area of Legok Nangka FDS
Service Area of Nambo FDS

Expenditure

Table 8-8 Expenditure of Kabupaten/Municipal Governments in West Java Province 2008

	Total Expenditure 000 Rp	Indirect Expenditure		Direct Expenditure	
		000 Rp	%	000 Rp	%
Kab. Bandung	1,618,754,800	900,317,504	55.6	718,437,296	44.5
Kab. Bekasi	1,060,180,100	496,926,499	45.9	563,253,601	54.1
Kab. Bogor	1,374,744,400	318,754,433	23.1	1,055,989,967	76.9
Kab. Ciamis	844,845,004	87,263,366	10.3	757,581,638	89.7
Kab. Cianjur	876,657,029	448,404,368	51.1	428,252,661	48.9
Kab. Cirebon	865,932,795	438,126,103	50.8	427,806,692	49.2
Kab. Garut	1,018,892,435	698,748,805	68.4	320,143,630	31.6
Kab. Indramayu	781,235,140	474,376,478	60.7	306,858,662	39.3
Kab. Karawang	947,900,610	479,291,303	44.2	468,609,307	55.8
Kab. Kuningan	606,300,320	370,518,962	61.1	235,781,358	38.9
Kab. Majalengka	612,378,010	361,603,841	58.9	250,774,169	41.1
Kab. Purwakarta	482,552,812	253,345,904	52.4	229,206,908	47.6
Kab. Subang	681,954,890	380,046,385	55.8	301,908,505	54.2
Kab. Sukabumi	932,880,101	431,659,736	46.2	501,220,365	53.8
Kab. Sumedang	668,515,192	365,153,292	54.6	303,361,900	45.4
Kab. Tasikmalaya	896,206,076	447,119,439	49.8	449,086,637	50.2
Kota Bandung	1,301,547,185	642,530,335	49.3	659,016,850	50.1
Kota Bekasi	881,862,420	273,209,259	30.9	608,653,161	69.1
Kota Bogor	545,381,081	278,687,982	51.0	266,693,099	49.0
Kota Cirebon	405,967,650	217,049,905	53.5	188,917,745	46.5
Kota Depok	581,345,467	250,417,305	43.0	330,928,162	57.0
Kota Sukabumi	321,257,498	164,565,755	51.0	156,691,743	49.0
Kota Tasikmalaya	480,853,089	226,254,472	47.0	254,598,617	53.0
Kota Cimahi	388,389,983	139,977,958	35.8	248,412,025	64.2
Kota Banjar	249,880,933	80,121,539	32.1	169,759,394	67.9
Kab. Bandung Barat	-	-		-	

Table 8-9 Composition of Kabupaten/Municipal Governments' Expenditure 2008 (in %)

	Total Expenditure	Indirect Expenditure		Direct Expenditure		
		Salary	Others	Salary	Goods & Services	Invest.
Kab. Bandung	100	41.45	14.17	12.22	13.93	18.23
Kab. Bekasi	100	19.68	27.19	15.17	3.97	33.99
Kab. Bogor	100	2.30	20.88	41.29	10.42	25.11
Kab. Ciamis	100	1.34	8.99	65.68	8.43	15.56
Kab. Cianjur	100	37.70	13.45	16.00	14.90	17.95
Kab. Cirebon	100	35.17	15.42	15.02	13.84	20.54
Kab. Garut	100	54.91	13.67	14.89	9.34	7.18
Kab. Indramayu	100	45.04	15.68	10.50	8.69	20.09
Kab. Karawang	100	30.33	20.23	16.22	11.54	21.67
Kab. Kuningan	100	48.86	12.25	8.83	16.51	13.55
Kab. Majalengka	100	48.38	10.67	8.75	21.26	10.94
Kab. Purwakarta	100	39.60	12.91	19.48	18.15	9.87
Kab. Subang	100	38.36	17.37	20.85	9.61	13.81
Kab. Sukabumi	100	31.42	14.85	11.58	35.36	6.79
Kab. Sumedang	100	38.98	15.64	19.01	9.41	16.96
Kab. Tasikmalaya	100	38.14	11.75	18.42	5.60	26.09
Kota Bandung	100	31.26	18.11	23.57	19.06	8.00
Kota Bekasi	100	20.39	10.59	23.46	11.93	33.63
Kota Bogor	100	36.15	14.95	6.06	15.70	27.14
Kota Cirebon	100	39.55	13.91	7.94	20.28	18.31
Kota Depok	100	26.30	16.77	14.88	13.43	28.62
Kota Sukabumi	100	40.86	10.36	10.75	15.31	22.72
Kota Tasikmalaya	100	35.60	11.46	15.09	13.03	24.82
Kota Cimahi	100	22.87	13.17	20.72	21.76	21.48
Kota Banjar	100	22.48	9.58	13.70	15.54	38.70
Kab. Bandung Barat						

Source: Same as above.
Notes: Same as above.

8.2.3 Analysis of Potential Genuine Local Revenue (GLR)

In this section, one of the criteria for measuring the success of mobilizing regional/local funds is the increasing amount of revenue generated from Genuine Local Revenue (GLR). In the case of West Java Provincial Government, the percentage of GLR to the Total Revenue (TR) was 70.70% during the period 2007–09. Relatively, this number was a significant contribution to the TR of the West Java Government.

To identify the potential amount of GLR and how to achieve it, two methods are applied. The first is to estimate the relative potential GLR based on comparison with other regions in Indonesia. In this regard, the achievement in mobilizing fund of the West Java Provincial Government will be compared with other provincial regions in Indonesia. This measurement will be based on the premise of relationships between dependent variables of GLR and Local Taxes Revenue (LTR), and independent variables of per capita income of the region and level of urbanization. The findings will show whether the actual GLR and LTR of West Java Provincial Government are higher or lower than the potential ones. An index of GLR and LTR gaps are

calculated based on the following formula[1]. A positive gap index represents the actual amount below the potential one and vice-versa.

GLR Gap Index = 100% − (Actual GLR/Potential GLR ×100%)
Local Tax Gap Index = 100% − (Actual LTR/Potential LTR × 100%)

The second method is bench-marking with best practices based on the literature. Devas[2] stated that willingness of tax payers to pay their taxes is shown by the proportion of GLR per- per-capita to Income per-capita. The proportion of 2% or more represents strong willingness of tax payers to pay their taxes.

In her previous study in West Java Province based on the regression analysis of cross-section data of the 27 provinces in Indonesia in 1990/1991, Alisjahbana stated that both GLR and LTR dependent variables have strong correlation with per-capita income of the region and level of urbanization. Calculation of Index of Local Tax shows that West Java and Central Java Provinces had not yet achieved their potential Local Tax Revenues. Jakarta and East Java Provinces had already achieved their potential levels.

Table 8-10
Regression Analysis Based on 27 Provincial Data 1990/1991

Independent Variables	Dependent Variables	
	GLR	LTR
Per capita Income (Non Oil and Mining)	0.72 (2.55)	0.53 (1.83)
Urbanization Level (Ratio Urban to Total Population)	0.67 (2.55)	1.07 (3.97)
R^2 (adjusted)	0.71	0.77

Source: Alisjahbana, 1998
Notes: ( ) value of the t test

Table 8-11
Index of Tax Gap of Several Provinces 1990/1991 (%)

	(Actual LTR/ Potential LTR) x 100% (1)	Index of Tax Gap 100 % -(1) (2)
DKI Jakarta	194	-94.0
West Java	**75.5**	**24.5**
Central Java	83.8	16.2
East Java	117.8	-17.8

Source: Alisjahbana, 1998

Multivariate regression analysis based on 33 provincial data in 2004 supports the result of the previous study conducted by Alisjahbana. However, after more than ten years, there was a significant change in the Index of Tax Gap. West Java, Central Java and East Java provinces had achieved their potential GLR and LTR, while Jakarta could not maintain its previous performance. Several dynamic factors have altered the situation.

[1] Alisjahbana, Arlinda. 1998. "Potensi dan Prospek Pengembangan Pendapatan Asli Daerah Dati I Jawa Barat". *Journal Studi Pembangunan Vol 1 No1. 1998*
[2] Devas, Nick. 1988. "Local Taxation in Indonesia: Opportunity for Reform". *Bulletin of Indonesian Economic Studies*

Table 8-12
Regression Analysis Based on 33 Provincial Data 2004

Independent Variables	Dependent Variables	
	GLR	LTR
Per capita Income (Non Oil and Mining))	0.986 (0.048)	1.039 (0.003)
Urbanization Level	1.447 (0.035)	1.549 (0.002)
R	0.747	0.755
R^2	0.557	0.570
R^2 ***(adjusted)***	0.525	0.555

Notes: ( ) value of the t test

Table 8-13
Index of Tax Gap of Several Provinces 2004 (%)

Province	Actual GLR/ Potential GLR (%)	Index of Tax Gap (%)
Jakarta	94.30	5.70
West Java	**106.55**	**−6.55**
Central Java	110.40	−10.40
East Java	107.43	−7.43
	Actual LTR/ Potential LTR (%)	**Index of Tax Gap (%)**
Jakarta	94.84	5.16
West Java	**106.55**	**−7.77**
Central Java	111.92	−11.92
East Java	108.84	−8.84

Based on the regression model, high per-capita income and high level of urbanization will result in high GLR and accordingly high LTR. However, other variables—e.g., willingness of tax payers to pay taxes and the implementation of tax regulations—may influence such relationships. Assessment of the percentage of GLR per-capita to Income per capita of the West Java region, explains that although the West Java Provincial Government have achieved its Potential GLR and LTR the willingness to pay of tax payers was still below expectation shown by low percentage of 1.44% less than 2%. Efforts to enhance the willingness of tax payers and to improve effective implementation of tax regulations are required for the purpose of maintaining and increasing GLR.

Table 8-14 Percentage of GLR Per Capita to Income Per Capita of Several Provinces 2008

Province	Income Per capita (Rp) (1)	GLR Per capita (Rp) (2)	(2)/(1) x 100%
West Java	**6,881,444**	**99,147**	**1.44**
Central Java	4,812,667	103,227	2.14
East Java	8,174,137	96,868	1.21

The financial situation at the kabupaten/municipal level is significantly different with the provincial level. The proportion of GLR to the TR was very low (12%); Kabupaten/municipal revenue was heavily dependent on the Balance Fund from the Central Government. Kabupaten/municipal governments are left with a variety of small and unsatisfactory taxes --e.g., non-motorized vehicles, pets, radio and others. Many of these are expensive to collect, inequitable in their incidence, and often create more disturbance than revenue. Charges for public services are not related to the costs of those services, and are not revised in line with inflation. Revenue collection systems are ineffective and inefficient.

8.2.4 Observations and Conclusions

1) Analysis of potential Local Tax Revenue shows that West Java Provincial has achieved its potential Genuine Local Revenue (GLR) and its potential Local Tax Revenue (LTR). However, assessment of the percentage of GLR per-capita to Income per capita of the West Java region, explains that the tax payers' willingness still has a room for improvement.

2) The revenue of West Java Province has expanded by annual average of 14% through 2005–09, owing a lot to strong GLR-base, which accounts for approximately 70% of the total revenue, with motor vehicle gasoline tax as a major part.

3) The proportion of the Indirect Expenditure to the Total Expenditure of the West Java Provincial Government was approximately 70%. Almost three forth of the Indirect Expenditure was spent for interest, subsidy, grants, sharing expenses, social assistance and financial assistance. In the past significant amount of money had been spent for the subsidy including subsidy for the provision, operation and maintenance for waste disposal facilities and services. In addition, about 16 % of the Total Expenditure had been spent for operation and maintenance cost for public services under the Goods and Services - Direct Expenditure budget line.

4) In general, the financial situation at the Kabupaten/Municipal Government in West Java was worse in comparison with the situation at the Provincial Government. In 2008 the governments' revenue ranged from 0.3 trillion IDR to 1.8 trillion IDR, and the average proportion of GLR to the Total Revenue was approximately 12% which was significantly worse than the Provincial Government. The Total Revenue of the Kabupaten/Municipalities was dependent upon the Balance Fund (approximately 82% of the Total Revenue), implying significant weakness in fiscal capacity. One major reason has been the big allocation of for salaries, which accounts for more than 50% of the Total Expenditure.

5) Successful delivery of waste disposal services will be dependent upon the contribution of several parties—local community, Kabupaten/Municipal governments, Provincial government and private sectors. Weaknesses and constraints in the management and financial matter at a certain level may affect the operation of the whole system. Given the financial weaknesses and constraints at each level of government, different strategy may be employed to improve the effectiveness of public waste disposal services.

   - Efforts to mobilize GLR, if possible, should be conducted in a more extensive way to include other sources rather just motor vehicle tax. In addition, the willingness to pay of tax payers should be improved. In addition, self-sustained management strategy should be employed by the Provincial Government in the operation of Regional Final Disposal Facilities.
   - Given the financial weaknesses and constraints at the local level, the Kabupaten/ Municipal governments should concentrate on a strategy for improving the recording and collection of tipping fees for solid waste services.

8.3 Public Finance for Waste Management in the Municipalities, Subsidiaries of the Provincial Government

This section examines the financial capacity of provincial and local governments in managing the Legok Nangka and Nambo proposed FDS. The discussion starts with an analysis of current financial waste management in related municipalities/regencies. It follows with the rational for providing and operating new regional-sanitary landfill- FDSs for the solid waste. The next step concerns with changes in the waste management expenditure as consequences of the application and operation of the new FDSs. The changes include expenditure for waste transportation and collection cost and expenditure for service fee. In this step, subsidies required for those expenditures are discussed. The sub-sequent steps deals with formulation of financial scenario for managing new FDSs. Based on the financial scenario, the financial capacity of the WJPG to provide subsidy, and the financial capacity of municipalities/regencies to manage new FDSs are assessed.

8.3.1 Financial Condition of Current Waste Management in Related Municipalities/Regencies

Present situation of waste management in municipalities/regencies within the service area of Legok Nangka and Nambo FDSs is shown in Table 8-15. Waste volume produced by each

municipality/regency ranges from 897 ton/day (Bandung City) to 7 ton/day (Sumedang Regency). 60% of the waste volume, currently, is sent to the FDSs in Sarimukti, Babakan, Cibereum, Pasir Bajing, Cipayung, and Galuga. The distances to the existing FDSs varies from 43 km to 8.5 km. The existing FDS service fees are different from one to the others. Sarimukti FDS applies an amount of service fee Rp 33,500/ton to include social cost Rp 4,500/ton. In this regard, West Bandung local government has the privilege to pay less than Rp 33,500/ton, because Sarimukti FDS is located in this regency. The other FDSs use service fee from Rp 15,000/ton to Rp 17,500/ton. All of those FDSs utilize open dumping technique.

Current financial condition of waste management in those municipalities/regencies is depicted in Table 8-16 and Table 8-17. House hold tariff for waste collection is usually very low, ranges from Rp 1,500 to Rp 9,000/hh/month regardless the amount of waste to be collected. The West Bandung Regency has introduced a relatively high tariff for waste collection, which is ranged from Rp 35,000 to Rp 50,000/hh/month. Different tariffs are applied for commercial areas and markets.

Based on the current data on budget available and expenses for waste management, most of municipalities/regencies face financial difficulties, due to the limited budget available and exceeding expenses. Table 8-17 shows a more detailed break-down of the expenditure on waste management. 3 (three) type of expenses are recognized, they are: (1) Expenses for waste transport and collection cost; (2) Expenses for FDS service fee; and (3) Expenses for 3 R. Current total expenses for waste management ranges from Rp 59,490 Million to Rp 2,337 Million (2010). Expenses for waste transport and collection cost ranges from Rp 25,763 Million to Rp 954 Million, while expenses for FDS service fee varies from Rp 6,509 Million to Rp 60 Million in 2010. No appropriate data available for 3R expenses. Both of annual expenses for waste transportation & collection cost and service fee for FDSs are quite high. However, expenses for waste transport and collection cost is almost four times of the expenses for service fee for FDSs. It is understood, since the existing FDSs are still using the open dumping technology. The variation of waste transport and collection expenses is dependent upon: (1) the spatial distribution and numbers of waste temporary stations and commercial areas; (2) the volume of waste to be delivered; (3) the distance from temporary stations to the FDSs.

The operation of all those existing FDSs will be terminated and the sites will be closed in the near future because the capacity of the dump sites is limited. Furthermore, Law no: 8/2008 on Waste Management stipulates that all open dumping FDSs should be closed in 2013. Therefore, new sanitary landfill FDSs should be provided and operated. In responding to such an issue, the Provincial Government of West Java Province and the related Municipalities/Regencies have decided to develop new sanitary landfill FDSs located in Legok Nangka and Nambo.

Table 8-15 Current Waste Management (2010): Physical Breakdown

#	Entity	Waste Volume Produced (Ton/day)	Waste Volume Delivered to FDS* (Ton/day)	Distance to FDS (Km)	Population	FDS	FDS Service Fee (Rp/Ton)
1	West Java Provincial Government	–	–	–	–	–	–
2	Bandung City	897	538	43	2,300,941	Sarimukti	33,500
3	Cimahi City	100	60	37	541,139	Sarimukti	33,500
4	West Bandung Regency	40	24	20.5	1,581,128	Sarimukti	29,000
5	Bandung Regency	143	85	25.2	3,181,798	Babakan	33,500**
6	Sumedang Regency	7	5	8.5	1,154,262	Cibeureum	33,500**
7	Garut Regency	215	129	17.2	2,401,248	Pasir Bajing	15,000
8	Depok City	215	129	15	1,639,173	Cipayung	17,500
9	Bogor City	498	280	20	928,422	Galuga	15,000–17,500
10	Bogor Regency	156	94	31.2	4,700,000	Galuga	15,000–17,500

Note: 2–7 = Legok Nangka Target Area; 8–10 = Nambo Target Area
* 60% are delivered to FDS
** Tipping Fee Similar to Sarimukti

Table 8-16 Current Waste Management (2010): Financial Breakdown 1

#	Entity	Household Tariff (Rp/Month)	Enterprise Tariff (Rp/m^3)	Budget (Rp)	Expenditure (Rp)
1	West Java Provincial Government	–	–	–	–
2	Bandung City	2,000–20,000	Hotel: 15,000	57,532 M (2009)	59,490 M (2009)
3	Cimahi City	1,500–7,500	Enterprise: 15,000 Market 250–500 Rp/stand/day	932 M	8,315 M
4	West Bandung Regency	35,000–50,000	Hotel & Rest: 15,000	2,676 M (2009) 3,054 M (2010)	2,192 M (2009) 2,337 M (2010)
5	Bandung Regency	4,000–9,500	Enterprise: 35,000 Market 1,000–3,000 Rp/day	na	8,483 M (2009) 8,765 M (2010) Excluding staff salary
6	Sumedang Regency	3,000	Na	na	4,413 M (2009) 4,512 M (2010)
7	Garut Regency	2,000–3,000	Hotel 25,000–250,000 Rp/month Industry/Market 30,000–300,000 Rp/month	na	3,569 M (2009) 4,596 M (2010)
8	Depok City	3,500–17,500	Hotel& Rest:15,000 Rp/m^3 Market 1,000–3,000 Rp/day	2,380 M (2010)	37,919 M (2009) 33,824 M (2010)
9	Bogor City	Na	Na	na	na
10	Bogor Regency	4,000–32,500	30,000	5,153 M	10,000 M

Table 8-17 Current Waste Management (2010): Financial Breakdown 2

#	Entity	Total Expenditure in Waste Management (Rp)	Expenditure in Waste Collection and Transport (Rp)	Expenditure in FDS Services (Rp)	Expenditure in 3R (Rp)
1	West Java Provincial Government	–	–	–	–
2	Bandung City	59,490 M	25,763 M	6,488 M *)	316.M
3	Cimahi City	8,315 M	5,608 M	607 M	740 M
4	West Bandung Regency	2,192 M (2009) 2,337 M (2010)	994 M (2009) 954 M (2010)	250 M *)	na
5	Bandung Regency	8,483 M (2009) 8,765 M (2010) Excluding staff salary	Na	1,025 M *)	na
6	Sumedang Regency	4,413 M (2009) 4,512 M (2010)	Na	60 M *)	na
7	Garut Regency	3,569 M (2009) 4,596 M (2010)	3,401 M (2009) 4,378 M (2010)	168 M (2009) 218 M (2010)	0
8	Depok City	37,919 M (2009) 33,824 M (2010) (Excluding staff salary)	9,831 M (2009) 11,9 07 M (2010)	10,378 M (2009) 6,509 M (2010)	17,217 M (2009) 15,407 M (2010)
9	Bogor City	Na	Na	1,764 M *)	na
10	Bogor Regency	10,000 M	5,777 M	873 M	775 M

Note: Calculated using the formula: Waste Volume Delivered to the Existing FDS × Service Fee × 360 days/year

8.3.2 Changes in Waste Management Expenditure due to the Provision and Operation of "LN" And "N" New FDSs

(1) Changes in Annual Expenditure for Waste Transportation & Collection Costs

Table 8-18 shows changes in the average distances from temporary disposal stations to the location of new FDSs for each municipality/regency. The changes range from 1.47 % to 577.5 %. If we disregard those two out-layers, the average change is approximately 50 %. Based on such figures, the difference of expenditure for waste transport & collection cost (between the year 2010 and after the operation of new FDSs) varies among municipalities/regencies, starting from Rp 85 Million to Rp 5,715 Million (assuming linear correlation between the change in distance and the change in cost). I should note here that reliable data for Bandung Regency, Sumedang Regency and Bogor City are not available.

In 2010 (before the operation of new FDSs), expenditures of municipalities/regencies for transport & collection cost was Rp 25,763 Million for Bandung City and Rp 954 Million for West Bandung Region respectively. After the operation of the new FDSs, expenditures of municipalities/regencies for transport & collection cost will become Rp 28,692 Million/year for Bandung City, and Rp 2,356 Million for West Bandung Region. The calculation shows significant increase in absolute value of the expenditure for waste transportation & Collection costs

(2) Changes in Annual Expenditure for Service Fee for the New FDSs

Table 8-19 shows annual expenditure for service fee in 2010, waste volume delivered to the new FDSs, and annual expenditure for service fee during the operation of new FDSs. Waste volume delivered to the new FDSs will increase in line with the increasing capacity of the new FDSs. The capacity of the Legok Nangka and Nambo FDS will become 1,000 ton/day respectively. Annual expenditures for service fee of each municipality/regency during the operation of new FDSs, will be significantly higher than those in 2010. Two causes of changes of annual expenditure for service fee can be distinguished, they are the increasing volume of the waste (in line with maximizing the capacity of the new FDSs) and the increasing service fee/ton to become USD 19.74 /ton and USD 18.65 /ton for Legok Nangka and Nambo respectively. Changes in expenses for service fee caused by the increasing volume of waste is shown in column 6 of Table 8-19, while changes in expenses for service fee caused by the increasing service fee/ton is shown in column 7. Table 8-19 indicates that increasing service fee/ton for the FDSs as consequences of the utilization of sanitary land fill technology has resulted in a significant amount of the annual expenses for FDSs service fee.

(3) Annual Subsidy Required

Given the limited budget available at the municipal/regency level, and significant amount of the existing expenditures required for waste transport & collection and service fee for FDSs, therefore the financial consequences of changes of technology and location of the FDSs should not become the responsibilities of related municipalities/regencies. Changes of expenses on the waste transport & collection and service fee due to the increasing waste volume will be the responsibility of related municipalities/regencies. However, changes of expenses on the waste transport & collection and service fee caused by the increasing distance to the new FDS locations and service fee/ton will be subject to the negotiation between the Provincial governments and municipalities/regencies.

Table 8-18 shows the amount of subsidy required from the provincial government for closing the gap between expenditures for waste transport & collection before and after operation new FDSs located in Legok Nangka and Nambo.

Table 8-19 indicates the amount of subsidy required from the provincial government for closing the gap between the existing (before the project) and the new (after the project) expenditures for FDS service fee.

Table 8-18 Changes in Expenditure for Waste Transport and Collection Costs and Annual Subsidy Required

#	Entity	(1) Expenditure in 2010 (Rp)	(2) Change Rate (%)*)	(3) Change = (1) * (2) (RP)	(4) Expenditure After the Iperation of New FDS without Subsidy = (1) + (3) (RP)	Annual Subsidy Required form WJPG (Rp)	
						Case 1: Subsidize 50% of Change	Case 2: Subsidize 100% of Change
1	West Java Provincial Government						
2	Bandung City	25,763 M	+ 11.4%	2,929 M	28,692 M	1,465 M	2,929 M
3	Cimahi City	5,608 M	+ 67.44%	3,782 M	9,390 M	1,891 M	3,782 M
4	West Bandung Regency	954 M	+ 147.8%	1,402 M	2,356 M	701 M	1,402 M
5	Bandung Regency	na	+ 71.4%	na	na	na	na
6	Sumedang Regency	na	+ 577.5	na	na	na	na
7	Garut Regency	4,378 M	+ 95.26%	4,170 M	8,548 M	2,085 M	4,170 M
8	Depok City	11,907 M	+ 48.1%	5,715 M	17,622 M	2,858 M	5,715 M
9	Bogor City	na	+ 36.0%	na	na	na	na
10	Bogor Regency	5,777 M	+1.47%	85 M	5,862 M	43 M	85 M
	Total					9,043 M **)	18,083 M **)

Notes *) Caused by changes in distances to the new FDS
**) Excluding Bandung Regency, Sumedang Regency, and Bogor City

Table 8-19 Changes in Annual Expenditure on FDS Service Fee and Annual Subsidy Required

#	Entity	(1) Annual Expenditure (Rp)	(2) Waste Volume Delivered to New FDS *) (Ton/day)	(3) Annual Expenditure on New FDS Service Fee Without Subsidy (RP)**)	Change (RP)		Annual Subsidy Required by WJPG (Rp)	
					(4) Change Caused by Increase in Waste Volume	(5) Change Caused by New FDS Service Fee	Case 1: Subsidize 50% of Change	Case 2: Subsidize 100% of Change
1	West Java Provincial Government							
2	Bandung City	6,488 M	725	43,790 M	2,255 M	35,047 M	17,524 M	35,047 M
3	Cimahi City	607 M	81	4,892 M	253 M	4,132 M	2,066 M	4,132 M
4	West Bandung Regency	250 M	33	1,993 M	93 M	1,634 M	817 M	1,634 M
5	Bandung Regency	1,025 M	116	7,006 M	361 M	5,607 M	2,804 M	5,607 M
6	Sumedang Regency	60 M	7	423 M	24 M	339 M	170 M	339 M
7	Garut Regency	218 M	173	10,449 M	237 M	9,700 M	4,850 M	9,700 M
8	Depok City	6,509 M	247	14,096 M	1,423 M	6,164 M	3,082 M	6,164 M
9	Bogor City	1, 764 M	573	32,700 M	3,354 M	27,402 M	13,701M	27,402 M
10	Bogor Regency	873 M	180	10,272 M	1,037M	8,362 M	4,181 M	8,362 M
	Total					98,387 M	49,154 M	98,387 M

Notes: *) Based on the capacity of Legok Nangka and Nambo FDSs 1,000 ton/day respectively
**)Service Fee for Legok Nagka 19.74 USD/ton = 19.74 x 8,500 Rp = 167,780 Rp / Ton
Sevice Fee for Nambo 18.65 USD/ton = 18.65 x 8,500 Rp = 158,252 Rp / ton
***) Based on the Formula: Change in waste volume x 360 x Rp 33,500 (using the existing Sarimukti Service Fee for the Basis)

8.3.3 Financial Scenario for Managing the New FDSs

(1) Financial Scenario for the WJPG to Provide Subsidy

Table 8-20 shows financial scenario for the WJP to provide annual subsidy to the municipalities /regencies. Two types of subsidy are recognized, they are subsidy for waste transport & collection cost and subsidy for service fee for the FDSs. Two types of financial scenarios are introduced including 50 % subsidy and 100% subsidy. Row 3 of Table 8-20 indicates annual subsidy required to fill out the gap of the municipalities/regencies' expenditures for waste transport & collection and for FDSs service fee before and after the new FDSs. The amount of 100 % subsidy given by the provincial government to the local government for FDSs service fee is approximately Rp 100 Billion, and the amount of 100% subsidy for waste transport and collection is approximately Rp 20 Billion. Given the significant amount of subsidy, the WJPG may be reluctant to deliver all of those amounts. Instead of providing all of those amounts, the WJPG may ask the local governments to use cost-sharing method. Such a method may be appropriate for both sides. Since the financial situation of the municipalities/regencies varies, negotiation and bargaining may be adequate.

Table 8-20 Financial Scenario for West Java Provincial Government to Provide Subsidy

Type of Annual Subsidy	Subsidy for Waste Transport and Collection Cost*)		Subsidy for FDS Service Fee	
Scenario	Case 1: 50% Subsidy	Case 2: 100% Subsidy	Case 1: 50% Subsidy	Case 2: 100% Subsidy
Rp	9,043 M*)	18,083 M*)	49,154 M	98,387 M

(2) Financial Scenario for the Municipalities/Regencies in the Provision and Operation of New FDSs

Table 8-21 shows financial scenario for the WJP to provide annual subsidy to the municipalities/regencies. Two types of subsidy are recognized, they are subsidy for waste transport & collection cost and subsidy for service fee for the FDSs. Three types of financial scenarios are introduced including: without subsidy, 50 % subsidy and 100% subsidy.

Table 8-21 Financial Scenario for West Java Provincial Government to Provide Subsidy

#	Scenario / Entity	Annual Expenditure Required for Waste Collection and Transport			Annual Expenditure Required for Service Fee of New FDS		
		Without Subsidy (RP)	With 50% Subsidy (Rp)	With 100% Subsidy (Rp)	Without Subsidy (RP)	With 50% Subsidy (Rp)	With 100% Subsidy (Rp)
1	West Java Provincial Government						
2	Bandung City	28,692 M	27,227 M	25.763. M	43,790 M	26,266 M	8,743 M
3	Cimahi City	9,390 M	7,499 M	5,608 M	4,892 M	2,826 M	760 M
4	West Bandung Regency	2,356 M	1,655 M	954.M	1,993 M	1,176 M	359 M
5	Bandung Regency	na	na	Na	7,006 M	4,202 M	1,399 M
6	Sumedang Regency	na	na	Na	423 M	253 M	84 M
7	Garut Regency	8,548 M	6,463 M	4,378 M	10,449 M	5599 M	749 M
8	Depok City	17,622 M	1,4764 M	11,9 07 M	14,096 M	11,014 M	7,934 M
9	Bogor City	na	na	Na	32,700 M	18,999 M	5,298 M
10	Bogor Regency	5,862 M	5814 M	5,777 M	10,272 M	6,091 M	1,910 M

Source: Study Team

The annual expenditure of Bandung City and West Bandung Region for transport & collection cost were Rp 25,763 Million and Rp 954 Million respectively in 2010 (before the operation of new FDSs). After the operation of the new FDSs, expenditures of the Bandung City for transport & collection cost without subsidy will become Rp 28,692 Million/year, and for West Bandung Region Rp 2,356 Million. The calculation shows significant increase in absolute value of the expenditure for Waste transportation & Collection costs without subsidy.

Table 8-20 and Table 8-21 indicate that increasing service fee/ton for the FDSs as consequences of the utilization of sanitary land fill technology has resulted in a significant value of the annual expenses for FDSs service fee without any subsidy from the WJPG.

8.3.4 Financial Capacity of Provincial and Local Governments in the Provision and Operation of New FDSs

(1) Financial Capacity of the WJPG to Provide Subsidy

Chapter 8.2 indicates that the financial capacity of the West Java Provincial Government is strong as shown by: (1) high absolute value of the total revenue (Rp 7,787,181 M in 2009); (2) high proportion of Genuine Local Revenue (PAD, 71 % of the total revenue); (3) high mobilization of local tax resources; and (4) high willingness to pay of the tax payers.

Tables 8-24 and 8-25 show annual subsidy required to fill out the gap on expenditures for waste transport & collection and for FDSs service fee. The percentages of annual subsidies to the total revenue and to the GLR are relatively small. This situation indicates that the WJPG has an appropriate financial capacity to provide subsidy required for the provision and operation of new FDSs. However, WJPG may argue that the burden to fill out the gap should be the responsibilities of both, the provincial and local levels, since the WJPG's intention is to minimize the subsidy

Table 8-22 Financial Capacity of West Java Provincial Government to Provide Subsidy

Revenue of the WJPG	Revenue, 2009 (Rp)	Annual Expenditure Required for Waste Collection and Transport		Annual Expenditure Required for Service Fee of New FDS	
		Case 1: 50% Subsidy 9,043 M*)	Case 2: 100% Subsidy 18,083 M*)	Case 1: 50% Subsidy 51,167M	Case 2: 100% Subsidy 103,133M
Total Revenue	7,787,181 M	0.12 %	0.24 %	0.66%	1.32%
Genuine Local Revenue (GLR)	5,520,994 M	0.17 %	0.34 %	0.89 %	1.79 %
Balance Fund	2,172,729 M	-	-		
Others	93,457 M	-	-		

Source: Study Team
Note: Does not include Bandung Regency, Sumedang Regency, and Bogor City

(2) Financial Capacity of the Municipalities/Regencies in the Provision and Operation of New FDSs

In general, the financial capacities of municipalities/regencies within the service area of Legok Nangka and Nambo are characterized as weak, heavily dependent on the Balance Fund from Central Government, low GLR, and very high proportion of expenditure for operational expenses, mainly for wages (Table 8-9). Table 8-24 and 8-25 show the assessment of financial capacity of related municipalities/regencies based on the financial scenario for managing the Legok Nangka and Nambo FDSs. These tables support the general characteristic of the financial capacity of related municipalities/regencies.

Therefore the burden for filling out the gap expenses should be shifted to the Provincial Government, especially for regencies with low revenue. For the Bandung city, Kabupaten Bandung and Kabupaten Bogor, which are categorized as having better financial capacity, option of cost sharing between the WJPG and related municipality/regency might be appropriate.

Table 8-23 Revenues of Kabupaten/Municipal Government in West Java Province 2008

No	Entity	2008						
		Total Revenue	Genuine Local Revenue		Balance Fund		Others	
		Million Rupiah	Million Rupiah	%	Million Rupiah	%	Million Rupiah	%
1	West Java Provincial Government							
2	Bandung City	1,866,251	327,508	17.55	1,245,945	66.76	292,797	15.69
3	Cimahi City	469,511	60,198	12.82	368,268	78.44	410,440	8.74
4	West Bandung Regency	-	-	-	-	-	-	-
5	Bandung Regency	1,382,549	132,310	9.57	1,118,231	80.85	132,603	9.59
6	Sumedang Regency	854,719	80,193	9.38	701,106	82.03	73,419	8.59
7	Garut Regency	1,275,131	84,068	6.59	1,162,908	91.20	28,154	2.21
8	Depok City	795,988	80,425	10.10	565,079	70.99	150,484	18.91
9	Bogor City	648,616	75,792	11.69	495,940	76.46	76,884	11.85
10	Bogor Regency	1,702,386	282,554	16.60	1,269,846	74.59	149,986	8.81

Source: Pemerintah Provinsi Jawa Barat, 2009

Table 8-24 Financial Capacity of Local Governments to Provide Waste Transport & Collection Cost of New FDS

#	Entity	Genuine Local Revenue (GLR) 2009 (Rp)	% of Annual Expenditure on Waste Transport and Collection on the GLR		
			Without Subsidy (RP)	With 50% Subsidy	With 100% Subsidy
1	West Java Provincial Government				
2	Bandung City	327,508 M	8.7%	8.3%	7.8%
3	Cimahi City	60,198 M	15.5%	12.4%	9.3%
4	West Bandung Regency	na	na	na	na
5	Bandung Regency	132,310 M	na	na	na
6	Sumedang Regency	80,193 M	na	na	na
7	Garut Regency	84,068 M	10.2 %	7.6 %	5.2 %
8	Depok City	80,425 M	21.9 %	18.3 %	14.8 %
9	Bogor City	75,792 M	na	na	na
10	Bogor Regency	282,554 M	20.8 %	20.6 %	20.4 %

Source: Study Team

Table 8-25 Financial Capacity of Local Governments to Provide Service Fee for New FDS

#	Entity	Genuine Local Revenue (GLR) 2009 (Rp)	% of Annual Expenditure on Service Fee to New FDS on the GLR		
			Without Subsidy (RP)	With 50% Subsidy	With 100% Subsidy
1	West Java Provincial Government				
2	Bandung City	327,508 M	13.3%	8.0%	2.1%
3	Cimahi City	60,198 M	8.1%	4.6%	1.4%
4	West Bandung Regency	na	na	na	na
5	Bandung Regency	132,310 M	5.2%	2.8%	0.3%
6	Sumedang Regency	80,193 M	0.5%	0.3%	0.1%
7	Garut Regency	84,068 M	12.4%	7.0%	0.7 %
8	Depok City	80,425 M	16.6%	12.1%	9.0 %
9	Bogor City	75,792 M	40.9%	22.8%	4.8%
10	Bogor Regency	282,554 M	38.5%	19.8%	5.0%

Source: Study Team

9. Study of Law and Regulations Related Contracts

9.1 PPP Infrastructure Rules and Regulations

(1) Scheme for PPP

According to Presidential Regulation No. 67 of 2005, dated 9 November 2005 on Cooperation between the Government and Private Entities in Infrastructure Procurement as amended by Presidential Regulation No. 13 of 2010, dated 28 January 2010 and lastly amended by Presidential Regulation No. 56 of 2011 dated 9 September 2011 ("**Partnership Regulations**"), cooperation projects can be held through following schemes:

(i) A partnership agreement ("**Partnership Agreement**") entered into by the Minister/Head of Institution/Head of Region ("**Government**") and a private entity, or
(ii) A business license granted by the Government to a private entity for infrastructure procurement.

The Partnership Agreement means a written agreement for infrastructure procurements made between the Government and a private entity. The business license means a license for infrastructure procurements granted by the Government to a private entity.

In the context above, if the SPC has already entered into a partnership agreement for infrastructure projects then the SPC will not be required to obtain a business license. However, please note that there may be an additional requirement requiring the SPC (which already entered into a partnership agreement with the Government) to obtain a specific business license if the SPC intends to work on the infrastructure project in certain businesses/fields.

For example, in the business/field of waste management, under Law No. 18 of 2008 on Waste Management ("**Law 18/2008**"), any business related to the Regulated Waste is required to be licensed by the regional head. According to this law, a private entity which already entered into a partnership agreement with the Government is also required to obtain a specific license (from the regional head) in order to conduct any business activities related to the Regulated Waste. This specific license should be different from the business license mentioned in the Partnership Regulations.

However, based on our reading on West Java Province Regional Regulation No. 12 of 2010 on Waste Management in West Java, it seems that the specific license required by Law 18/2008 will not be required if the waste management business activities are conducted through a partnership agreement. Therefore, it is advisable that this point should be confirmed by applicable ministries and agencies.

This project is expected to be conducted by entering into a Partnership Agreement as mentioned in (i) above. Although the counterparty in Partnership Agreement shall be determined according to the scale of project, in this project, given that (i) the project will be conducted in more than 1 city or regency in the province of West Java and (ii) the waste originates from at least 2 cities/regencies in the province of West Java, the counterparty must be the West Java government.

(2) Contents and Availability of Compensation

<Summary>

- According to the Partnership Regulation, entities including foreign companies submitting a proposal as "Unsolicited Project" as approved by the Minister/Institution Head/Regional Head may be granted the following types of compensation:

(a) the granting of additional value;
(b) the granting of the right to make a bid by the initiator entity to the best bidder (right to match) in accordance with the results of the evaluation in the tender process; or
(c) the purchase of the Partnership Project initiative.

- This project is likely to be determined as "Solicited Project", because a similar project has already been included in a regional master plan prepared by West Java Province.

<Details>

Contents of compensation

Granting of additional value ((a) above): The granting of additional value which is granted to the project initiator shall be 10% (at the maximum) of the tender appraisal of the initiator and shall expressly be stated in the tender document.

Granting of right to match ((b) above): The granting of the right to change the bid (right to match) shall be the granting of the right to the initiator entity of the Partnership Project to change the bid if (based on the tender results) there is another entity submitting a better bid. Note that the maximum period within which the initiator entity may apply for the right to change the bid shall be 30 days from the stipulation of the best bid of the public tender for the Partnership Project based on the appraisal criteria of the relevant sector.

Granting of purchase of the Partnership Project initiative ((c) above): The purchase of the Partnership Project initiative shall be a reimbursement by the Minister/Institution Head/Regional Head or by the successful bidder for the direct costs associated with the preparation of the Partnership Project and which have been spent by the initiator entity. The costs incurred by the initiator entity shall be determined by the Minister/Institution Head/Regional Head based on the appraisal made by the independent appraiser appointed by the Minister/Institution Head/Regional Head.

Availability of Unsolicited Project

According to the Partnership Regulations, in order to submit a project as an Unsolicited Project, the project shall meet the following criteria:

(a) it shall not be included in the master plan in the relevant sector;
(b) it shall be technically integrated with the master plan in the relevant sector;
(c) it shall be economically and financially feasible; and
(d) it shall not require government support namely fiscal contributions in the form of financial supports.

With respect to the criteria (a) above, it should be examined what similar projects in *Legok Nangka* and *Nambo* are listed in the PPP Book (2010-2014), BAPPENAS. In this regard, we believe that the PPP Book is not the same as Master Plan. There is no clear definition of the "Master Plan" under the Partnership Regulations, however, based on our informal research at BAPPENAS, the Master Plan can be divided into two, i.e. (1) strategic plan prepared by the central government and (2) mid-term development plan prepared by local governments. This project is likely to be determined as "Solicited Project", because a similar project (i.e. a waste management in *Legok Nangka* and *Nambo*) has already been included in a regional master plan prepared by West Java Province.

With respect to the criteria (d) above, although this project is to be guaranteed under the PT Indonesia Infrastructure Guarantee Fund (IIGF), we believe that the guarantee does not consist of any government support in the form of fiscal contributions. Please note that there is no clear definition of the "fiscal" contribution under the Partnership Regulations. However, from the

way it is drafted, fiscal contribution can be in the form of tax incentives. The Partnership Regulations, in the mean time, differentiate between the Government's contribution (including fiscal contribution) and the Government's guarantee. Therefore, the entity can still get a government guarantee in this matter. In addition, based on our informal research at BAPPENAS, an entity can still get a government guarantee even if the project is submitted as an "Unsolicited Project".

However, despite the interpretation of the applicable laws mentioned above, the availability of "Unsolicited Project" is likely to be determined on the basis of the political consideration by Indonesian government. Therefore, it is advisable that the interpretation should be confirmed by applicable ministries and agencies. Please note that the BAPPENAS is the primary body who is responsible for the PPP scheme in Indonesia, and such its interpretations are significant in the matter.

[Relevant Laws]

- Presidential Regulation No. 67 of 2005, dated 9 November 2005 on Cooperation between the Government and Private Entities in Infrastructure Procurement as amended by Presidential Regulation No. 13 of 2010, dated 28 January 2010
- Minister of National Development Planning/Head of National Development Planning Agency (*Menteri Negara Perencanaan Pembangunan Nasional/Ketua Bapennas*) Regulation No. 4 of 2010, dated 21 June 2010 on General Guidelines of Implementation of Cooperation
- Regional Regulation of West Java Province No. 2 of 2009 re. Mid-Term Development Program of the West Java Province in 2008–2013

(3) Regional Government Regulations

In addition to specific regulations on waste management and PPP, any cooperation made between the Government and a private entity is also subject to Law No. 32 of 2004, dated 15 October 2004 on Regional Government as lastly amended by Law No. 12 of 2008, dated 28 April 2008 ("**Regional Government Law**") and Government Regulation No. 50 of 2007 on Procedures of Implementation of Regional Cooperation ("**GR 50/2007**").

Under GR 50/2007, any plan of cooperation between the Government and a private entity, which (i) necessitates the utilization of regional government's assets and (ii) imposes a burden on citizens residing in the region (e.g. as a result of the cooperation, people are obliged to pay a sum of money), should be approved by the Regional House of Representatives if costs and expenses for the cooperation have not been included in the Regional State Budget.

In light of the Regional Government Law, there is a categorization of authorities and this has a repercussion as to who the contracting party is to any cooperation made between the Government and a private entity. In this project, we believe that the West Java state will be the counterparty and will be the contracting party.

[Relevant Laws]

- Law No. 32 of 2004, dated 15 October 2004 on Regional Government as last amended by Law No. 12 of 2008, dated 28 April 2008
- Government Regulation No. 50 of 2007 on Procedures of Implementation of Regional Cooperation

(4) Availability of Entity Conducting a Feasibility Study to Participate in a Bid

There is no prohibition with respect to an entity which conducts a Feasibility Study to participate in a bid. In addition, because this Feasibility Study is organized by the Japanese

Government (JICA), we believe that the entities which conducted it may be permitted to participate in the bid.

(5) Government Support and Government Guarantee

<Summary>

- As we have described above, Government Support namely fiscal contribution in the form of financial supports need not be granted if this project will be submitted as an Unsolicited Project.
- In this project, Government Guarantee may be granted. And this Government Guarantee can be given by PT Indonesia Infrastructure Guarantee Fund (IIGF). In certain conditions (e.g. insufficient assets owned by IIGF), IIGF may propose to the Ministry of Finance so that the government via the Ministry of Finance can also provide a guarantee to private entities.

<Details>

Government Support

Although Government Support consists of the both "fiscal" and "non-fiscal" contributions under the Partnership Regulations, there is no clear definition of these contributions. However, from the way it is drafted, fiscal contribution can be in the form of tax incentives, etc. As for non-fiscal contribution, it can be in the form of licensing and land procurement.

As we have discussed above, one of the requirements of the Unsolicited Projects is that they are not given Government Support namely fiscal contribution in the form of financial supports. Therefore, if this project is submitted as an Unsolicited Project, the fiscal contribution in the form of financial supports may not be given.

Government Guarantee

Contents of Government Guarantee:

Government Guarantee can be given under the PT Indonesia Infrastructure Guarantee Fund (IIGF) against infrastructure risks.[1] Please note that the Partnership Regulations differentiate between the Government's contribution (including fiscal contribution) and the Government's Guarantee. Therefore, Government Support can be given even if this project is submitted as an Unsolicited Project.[2]

Under Minister of Finance Regulation No. 260/PMK.011/2010, dated 31 December 2010 on Implementation Guidelines of Infrastructure Guarantee in the Cooperation Projects made between the Government and Private Entities, risks which can be guaranteed are the ones whose occurrences are due to from the following:

a. actions conducted, or absence of actions of the Government either as the contracting party to a partnership agreement or as an institution;
b. policies issued by the Government either as the contracting party to a partnership agreement or as an institution;
c. arbitrary decisions taken by the Government either as the contracting party to a partnership agreement or as an institution; and

[1] Under certain conditions (e.g. insufficient assets owned by IIGF), IIGF may propose to the Ministry of Finance so that the Government via the Ministry of Finance can also provide a guarantee to private entities. If it is approved, a guarantee to private entities will be granted by IIGF along with the Minister of Finance. Any guarantee arrangement process must be conducted through IIGF. No private entity is allowed to request Government Guarantees directly from the Minister of Finance.

[2] Please see 9.1 (2) above.

d. breaches of the contract of the Government as the contracting party to a partnership agreement.

Requirement of Government Guarantee:
According to the Partnership Regulation, in order to be given the Government Guarantee, the Partnership Agreement must contain the following: (Please note that the Government Guarantee is required to be stipulated in the public or auction document.)

(i) distribution of risks,
(ii) efforts to mitigate risks,
(iii) total financial obligation of the Government,
(iv) sufficient period for the Government to pay its financial obligations,
(v) procedures to determine that the Government is in default (in paying its financial obligation),
(vi) choice of forum for dispute settlement, and
(vii) laws of the Republic of Indonesia as the governing law.

It is also stipulated in Presidential Regulation No. 78 of 2010, dated 21 December 2010 on Infrastructure Guarantee in the Cooperation Projects made between the Government and Private Entities conducted through the Infrastructure Guarantee Private Entity ("**PR 78/2010**") that the guarantee may be given if the Government as the contracting party to a partnership agreement is willing to:

(i) issue a statement letter on the validity of the partnership agreement, and
(ii) provide a written commitment to a guarantor, IIGF that the Government will
  (a) perform its best effort to control, manage or prevent any risks, and
  (b) pay Regres as stipulated in an agreement made between the Government (given its status as the contracting party to a partnership agreement) and a guarantor (i.e. IIGF). Regres means the guarantor's rights to claim from the Government items including monies which have been paid by the guarantor to the private entity.

[Relevant Laws]

- Minister of Finance Regulation No. 260/PMK.011/2010, dated 31 December 2010 on Implementation Guidelines of Infrastructure Guarantee in the Cooperation Projects made between the Government and Private Entities
- Presidential Regulation No. 78 of 2010, dated 21 December 2010 on Infrastructure Guarantee in the Cooperation Projects made between the Government and Private Entities conducted through the Infrastructure Guarantee Private Entity

(6) Budgetary Resolution to Commit Long-Term Payment

For the West Java provincial government to commit the long-term payment, it must be approved by the Regional House of Representatives if this commitment has not been included in the regional state budget.

(7) Reimbursement/Repayment of Land Use Fees

According to the Partnership Regulations, the Government supports can be in the form of land procurement in which the Government will provide the land (as applicable) for the project. It is determined at the Government's discretion if the SPC should repay the costs of land acquisition. Please note that the Government must put in the tender document if the Government wants the SPC to reimburse the Government in part or in full.

(8) Obligations on and Potential Liability of Owners of Project Properties

The obligations and potential liability of owners of project properties should be included in the Partnership Agreement made between the Government and a private entity. Therefore, the risk allocation with respect to project properties should be determined based on the Partnership Agreement.

9.2 Information in Relation to Any National, Governmental or Provincial Rules and Regulations Relevant to the Waste Disposal Sector

(1) Analysis of whether Private Entities/Foreign Companies could carry on Waste Disposal Activities

<Summary>

- Private entities may carry on waste disposal activities by entering into a Partnership Agreement with West Java Government if the waste originates from at least 2 cities/regencies in the province of West Java.[3]
- Foreign entities may be permitted to carry on waste disposal activities through a Partnership Agreement with West Java Government. In this context, a foreign entity needs to be first declared as a tender winner. To participate in a public tender; a foreign company does not need to establish Indonesian Limited Liability Company yet. A foreign company is required to establish a limited liability company within 6 months after the Government conducting a public tender grants the foreign company the tender award.

<Details>

Establishment of SPC

Prior to establishing a limited liability company in Indonesia ("**SPC**"), prospective foreign shareholders of the SPC will need to also apply with the Investment Coordinating Board ("**BKPM**") for the establishment of the SPC.

One of the items that need to be inserted in the application is the SPC's line of business. The line of businesses which may not be allowed for foreign companies are listed in Presidential Regulation No. 36 of 2010 on List of Business ("**Negative List**").

According to the Negative List, private cleaning service is closed to foreign investment. However, we believe there are rooms to negotiate that the Negative List refers to private cleaning service only and does not refer to any other business activities (i.e. a foreign company is allowed to carry on waste disposal activities other than private cleaning service). However, based on one recent case that we handled, we've learned that BKPM has indicated it will give its approval in regard to 100% foreign ownership of "garbage processing service" as the SPC's line of business.

Please see Appendix 2 for detail information regarding establishment procedure of SPC.

[Relevant Laws]

- Presidential Regulation No. 36 of 2010 on List of Businesses which are Closed and Open with Requirements in the Field of Capital Investment
- Head of Central Statistics Bureau Regulation No. 57 of 2009

[3] Please see 9.1 (1) above

Capital Requirement for SPC
The SPC is required to be established and maintained by at least 2 shareholders. There is no regulatory requirement on minimum or maximum capital to be inserted in a BKPM application for the establishment of the SPC. Based on BKPM's current policy, the total investment of a service company shall be at least US$250,000 of which at least US$150,000 must be in the form of share capital (equity), with the remainder (if any) being in the form of loans. The equity portion as stated in the BKPM Application will need to be injected into the SPC immediately after the signing of the deed of establishment of the SPC (i.e. after BKPM's approval for the SPC has been obtained).

Debt-to-Equity Ratio (DER) for SPC
In relation to debt to be made by the SPC, in our experience, BKPM would usually require a debt-to-equity ratio of 3:1 ("DER") for the SPC. Therefore, the maximum amount of loans which can be obtained by the SPC is 3 times the amount of its share capital (equity). The DER (3:1) is not governed under a specific regulation but more on a policy issued by BPKM. Therefore, based on our experience, the DER may be negotiable.

Timing for the establishment of SPC
If foreign investors are stipulated as awardees of a public tender, they are required to establish a local Indonesian entity (SPC) within 6 months after they win a public tender. Please note that to participate in a public tender, a foreign company does not need to establish a limited liability company.

(2) License for Waste Management

<Summary>

- Under Law 18/2008, in order to carry out the waste disposal activities, [SPC] is required to be licensed by head of the West Java Government as stipulated in the relevant regional government regulation.. However, from Perda 12/2010, it seems like a specific waste license is not required if the waste disposal activities are conducted through a Partnership Agreement.

<Details>
Waste management is specifically regulated in Law No. 18 of 2008, dated 7 May 2008 on Waste Management (**"Law 18/2008**") and Minister of Domestic Affairs Regulation No. 33 of 2010, dated 30 April 2010 on Guideline of Waste Management ("**Permendagri 33/2010**") (collectively, Law 18/2008 and Permendagri 33/2010 are referred to as "**Waste Management Regulations**").

According to the Waste Management Regulations, any business activities related to Regulated Waste (as defined below) management is required to be licensed by the regional head. What is regulated by the Waste Management Regulations is limited to (i) household waste, (ii) household-like waste and (iii) specific waste. Household waste originates from daily household activities and which mostly consists of organic waste excluding feces and specific waste. Household-like waste does not originate from households but from commercial areas, industrial areas, special areas, public facilities and/or other facilities. Specific waste is defined as waste which by its types, concentrations, and/or volume is required to be managed particularly including waste containing hazardous and toxic materials and waste generated as a result of disasters (collectively, household waste, household-like waste and specific waste are referred to as "**Regulated Waste**"). Any wastes which do not fall under the categorizations of Regulated Waste will be governed by specific ministerial regulations.

Because the West Java government is responsible for dealing with and administering Regulated Waste management regulations in this project, the license should be granted by head of the West Java government. Under West Java Province Regional Regulation No. 12 of 2010, dated 23 August 2010 on Waste Management in West Java ("**Perda 12/2010**"), waste management involving private entities can be made if the waste originates from at least 2 cities/regencies in the province of West Java. The involvement of private entities is through (i) a partnership agreement or (ii) a license issued by the West Java Government.

Waste Management Regulations explicitly require any party conducting waste management to be licensed by the regional head. However, per Perda 12/2010, it seems like the license will not be required if waste management is conducted through a partnership agreement..

[Relevant Laws]

- Law No. 18 of 2008, dated 7 May 2008 on Waste Management
- Minister of Domestic Affairs Regulation No. 33 of 2010, dated 30 April 2010 on Guideline of Waste Management

West Java Province Regional Regulation No. 12 of 2010, dated 23 August 2010 on Waste Management in West Java

9.3 Government Procurement

(1) Type of the Government Procurements and Availability of Foreign Company

<Summary>

- In order to participate in a public tender, a foreign company does not need to establish a limited liability company. However, there are certain requirements which need to be fulfilled for having a participation of a foreign company in the procurement of the Government goods/services (as elaborated below).

<Details>

Types of government procurements

Government procurement is regulated under Presidential Regulation No. 54 of 2010, dated 6 August 2010 on Procurement of Government Goods/Services ("**PR 54/2010**"). PR 54/2010 classifies "services" as (i) construction work; (ii) consultancy services, and (iii) other services.

Under PR 54/2010, the selection method of providers depends on the type of services to be provided to the Government. In general, the selection method is as follows:

(1) Construction Work Procurement is implemented through:

a. Public tender;

b. Limited tender, applicable to complex assignments in which bidders are known to be very limited in number;

c. Direct selection, applicable if the work procurement is considered non-complex and worth a maximum of Rp. 200 million;

d. Direct appointment, applicable only in "special conditions" and for "special Goods/Construction Work/Other Services". This kind of selection is conducted through negotiation from a technical and financial perspective to come up with a fair value and technically accountable proposal; or

e. Direct procurement, applicable to the procurement of Goods/Construction Work/Other Services which is worth a maximum of Rp. 100 million to the extent

that: (1) it meets the operational needs of the relevant institution, (2) it uses simple technology, (3) it poses minimal risk, and/or (4) it is implemented by an individual and/or a small business entity or cooperative.

(2) Consultancy Services Procurement is implemented through:
   a. Selection, consisting of public and simple selection. Simple selection is applicable if the public selection is considered inefficient in terms of costs. It can be performed for procurement which is simple and worth a maximum of Rp. 200 million.
   b. Direct appointment is applicable only under "special conditions".
   c. Direct procurement is applicable if the procurement is for the operational needs of the relevant institution and/or worth a maximum Rp. 50 million.
   d. Contest is applicable only to creative, innovative and domestic cultural industries.

(3) Goods/Other Services Procurement is implemented through:
   a. Tender, consisting of public tender and simple tender. A simple tender is applicable if the work procurement is considered non-complex and worth a maximum of Rp. 200 million.
   b. Direct appointment of one (1) bidder, applicable only under "special conditions" and for "special Goods/Construction Work/Other Services". This kind of selection is conducted through negotiations from a technical and financial perspective to come up with a fair value and technically accountable proposal.
   c. Direct procurement, applicable to procurement of Goods/Construction Work/ Other Services which is worth a maximum of Rp. 100 million to the extent that (1) it meets the needs of the relevant institution, (2) it uses simple technology, (3) it imposes minimal risk, and (4) it is implemented by an individual and/or small business entity or cooperative.
   d. Contest/competition (*sayembara*), applicable only to creative, innovative and domestic cultural industries.

   * In light of construction work and goods/other services procurement as mentioned in points (1) and (3) above, "special conditions" or "special Goods/Construction Work/Other Services" refer to, among other things, a situation where there is only one person/entity who can provide the services.

Please note that the procurement for the PPP project should be conducted based on the procedures which are described in the Partnership Regulations.

Availability of foreign company

Under the PR 54/2010, there are no regulations which exclude a foreign company from participating in Government procurement except that the value of the work must fulfill the following requirements:

a. for construction work whose value is more than Rp.100,000,000,000 equal to US$11,111,111;
b. for consultancy services whose value are more than Rp.10,000,0000,000 equal to US$1,111,111; and
c. for other services whose value are more than Rp.20,000,000,000 equal to US$2,222,222.

Note that a foreign entity is required to cooperate with a national entity if there is one which capable in the relevant field.

[Relevant Laws]

- Presidential Regulation No. 54 of 2010, dated 6 August 2010 on Procurement of Government Goods/Services

(2) Availability of Integrated Bid

What is Integrated Bid?
"Integrated Bid" means a simultaneous bid in relation to the ODA-based final landfill facility and the project finance-based intermediary treatment facility, with both bids being appraised on an aggregate basis (i.e. conducting two types of bids simultaneously, and selecting a person who has earned the highest points (in total) in both bids as a successful bidder. This Integrated Bid would be beneficial for risk management and the efficiency of the project because the two different projects are carried out by one successful bidder.

Availability of the Integrated Bid
There is neither a prohibition nor a provision on the Integrated Bid under the Partnership Regulations. We believe that there is room to propose an "integrated bid" in the Projects presented to the Government.

9.4 Foreign Investment

(1) Ownership of Land/Buildings by a Foreign Company

Land titles which need to be held by the SPC
Any (limited liability) companies including the SPC can hold the following basic land titles:

- Right to Cultivate ("**HGU**");
- Right to Build ("**HGB**");
- Right to Use ("**HP**");
- Right to Lease ("***Hak Sewa"***); and
- Right of Ownership over a Condominium Unit ("**HMSRS**").

The SPC will need to have HGB, HP and/or Hak Sewa depending the on the land.

The SPC will be able to build and hold the disposal facility on the basis of HGB or HP either in the BTO or BOT structure, and both structures are not prohibited by the Indonesian Investment Law.

In BTO structure, the SPC will be allowed to build the disposal facility on the basis of HGB. (Because the definition of "use" in HP is very broad, which may include building the disposal facility, the SPC will be able to build the disposal facility on the basis of HP. However, the downside of holding HP compared with HGB is in, among other things, the time period.) Then, because the SPC will transfer the ownership of the disposal facility to the West Java government, after that, the SPC will not need to lease the land from the West Java government in order to hold the disposal facility on the land. Please note that although the SPC will operate the disposal facility during operating term, the SPC will not be required to acquire the HP other than HGB because the SPC will be allowed to conduct such operation on the basis of the HGB.

In BOT structure, the SPC will be allowed to build the disposal facility on the basis of the HGB (or HP). In this structure, then the SPC will be able to continue to hold the ownership of the disposal facility on the land on basis of the HGB (or HP) without entering into land lease

agreement with the West Java government. In this context, if the SPC has already held the HGB, the SPC will not be required to hold the HP or other license.

Notwithstanding of the above, for building of, or operating the disposal facility, SPC is also required to hold several general licenses prior to building or operating the disposal facility namely, among other things, location permit, building permit and hindrance permit. Those are issued by the relevant local government.

Details of each land title

(i) HGB

HGB is basically the right granted by the State to establish and construct (buildings). According to the Indonesian Investment Law, HGB granted to foreign investment companies can be given for the period of 50 years and may be renewed for another 30 years.

(ii) HP

HP is the right to use and/or collect products from the land directly administered by the State such as State land. This means that HP title can be created on top of these land titles and is not an independent title in the land itself. According to the Indonesian Investment Law, HP granted to foreign investment companies can be given for a period of 45 years and may be renewed for another 25 years.

(iii) Hak Sewa

Hak Sewa is a land title that gives its holder a right to construct a building on another person's land, upon payment of rent.

(2) Any Rules and Regulations (Particularly Those in Relation to Customs) which Apply to the Importation of Building Materials/Machinery

<Overview>

- Importation may only be carried out by a company which has obtained an Importer Identification Number issued by the Minister of Trade and a Customs and Excise Identification Number. Further, depending on the types of goods imported, the importer may also need to apply for additional importer's licenses and registrations.

<Details>

An Importer Identification Number ("**API**")

Importation may only be carried out by a company which has obtained an Importer Identification Number ("**API**") issued by the Minister of Trade, which could be in the various types including General Importer's Identification Number ("**APIU**"), Producer Importer's Identification Number ("**API-P**"), and Limited Importer's Identification Number ("**API-T**"). Types of the API depend on the nature of the importer (domestic company or foreign investment company) and the types of goods imported.

To obtain the API, the Importer must also has Trade Business License (SIUP) issued by the Minster of Trade or (i) in the case of a foreign-owned company, an investment license from the BKPM, (ii) for other companies relevant business licenses from the technical Government institutions, and (iii) for all companies, Company Registry Certificate (TDP) issued by the Minister of Trade.

A Customs and Excise Identification Number (NIK)

In addition to the licenses above, an importer must also obtain a Customs and Excise Identification Number (NIK).

Additional importer's licenses and registrations
Further, depending on the types of goods imported, the importer may also need to apply for additional importer's licenses and registrations. In the case of building materials or machinery, these have a categorization as well. Non-new machines and machinery equipment, for example, may only be imported by (a) direct user companies for the need of production of their industries, etc.; (b) reconditioning companies for restoration and repairing of non-new machines and machinery equipment. Furthermore, companies which are able to import non-new machines or machinery equipment are required to have a business license, API and tax payer registration number.

Another example is metal or steel as part of building materials. Apart from the general import licenses above, importing metal or steel also requires a specific license from Minister of Trade.

9.5 Information in Relation to Applicable Labor Laws

(1) Rules and Regulations in Relation to Employment and Labor Relations with Respect to Waste Facilities

<Overview>
There are no specific laws in relation to employment and labor relations with respect to waste facilities, yet there are general laws relevant to occupational health and safety which need to be upheld for employees working in waste facilities.

<Details>
Employers are required to observe following general laws relevant to occupational health and safety.

Law No. 13 of 2003 on Labor ("Labor Law")
Under the Labor Law, every employee has the right to protection for work safety and health in accordance with human standards and dignity and religious values. In order to protect the employees' safety and achieve the optimum work productivity, employers should implement work safety and health efforts by way of work accident and disease prevention, hazard control in the work place and health promotion.

Furthermore, the Labor Law also requires companies to enforce work safety and a health management system that is integrated into the company's management system. The work safety and management system covers the organization structure, planning and implementation that are necessary to develop the application of work safety and health policies in connection with risk management related to work activities in order to create a safe, efficient and productive work place.

Law No. 1 of 1970 on Work Safety ("Law 1/70")
Law 1/70 requires employers to:

(i) display in writing at places that can be clearly seen and read in the workplace all work safety requirements, and a copy of Law 1/70 and any of its implementing regulations which are applicable for the relevant workplace;

(ii) display at places that can be clearly seen and read in the workplace all required work safety symbols and other safety developmental materials;

(iii) provide, free of charge, all self-protection equipment required for employees as well as other persons who enter the workplace, along with the necessary use instructions.

(iv) display and explain to all new employees the conditions and dangerous events that could occur in the workplace and all security and protection equipment required in the workplace, etc.

(v) conduct development program for all employees on accident prevention, fire prevention and fire-fighting methods, as well as for the increase of work health and safety and first-aid assistance for an accident;

(vi) fulfill and observe all terms and conditions applicable to the business and work place.

Law No. 3 of 1992 on Workers Social Security ("Law 3/92")
Law 3/92 and its implementing regulations also require employers having at least 10 employees or paying salary in a total amount of Rp. 1.000.000 to enroll its employees in the mandatory Workers' Social Security ("Jamsostek") provided by PT Jamsostek (Persero). There are 4 programs covered by Jamsostek, i.e.:

(i) Occupational Accident Security (Jaminan Kecelakaan Kerja or "JKK");
(ii) Death Security (*Jaminan Kematian* or "JK");
(iii) Old Age Security (*Jaminan Hari Tua* or "JHT"); and
(iv) Health Care Security (*Jaminan Pemeliharaan Kesehatan* or "JPK").

JKK, JK and JHT are mandatory. However, a company may be exempted from enrolling the employees in JPK if the company provides a health care benefit which is not lower than the JPK.

Employees who experience accidents or are injured during work will be entitled to receive benefits from JKK under Jamsostek, which is provided by PT Jamsostek (Persero).

[Relevant laws]
- Law No. 13 of 2003 on Labor
- Law No. 1 of 1970 on Work Safety
- Law No. 3 of 1992 on Workers Social Security

(2) Employment of Foreigners (including Immigration Laws in Relation to the Laborers Hired for the Purpose of Construction/Maintenance)

<Overview>
The SPC is allowed to employ expatriates, yet there are some requirements for both employers and employees.

<Details>
A permit for employment of foreigners
The Labor Law requires any employer intending to employ expatriates to obtain a written permit (currently known as "IMTA"), from the Minister of Manpower and Transmigration ("Minister of Manpower") or the authorized officials. Employers who fail to obtain an IMTA from the Minister of Manpower or the authorized official may be subject to a criminal sanction of imprisonment for a minimum of 1 year and a maximum of 4 years and/or a fine of a minimum of Rp.100,000,000 and a maximum of Rp.400,000,000.

Requirements for employment
Foreigners intended to be employed by employers in Indonesia must have (i) education and/or working experience of at least 5 (five) years appropriate to the positions to be held and (ii) willingness to provide statements of transfer of skill and expertise to Indonesian employees, particularly to the expatriates' counterparts at the company or organization.

In addition, the foreigner is required to be able to "communicate" in the Indonesian language. It is not certain what method the Department of Manpower will apply to ascertain that the expatriate indeed speaks Indonesian.

If the position to be held by the expatriates has a standard of competence, the expatriate is required to fulfill the standard.

Appointment of counterpart workers

The Labor Law requires that for every foreigner employed, the employer must appoint an Indonesian as the counterpart worker of the relevant expatriate, for the purpose of technology and expertise transfer. The only exception from the requirement to appoint an Indonesian counterpart worker is if the expatriate is holding the position of a director or commissioner of the company.

The Labor Law, however, does not specify who should qualify to become an Indonesian counterpart worker of the foreigner. Ideally, an Indonesian counterpart worker should be the subordinate of the foreigner worker.

Documentation Required

Aside from IMTA, various other expatriate documents must be processed, among others, as follows:

(i) Foreign Personnel Utilization Plan (Rencana Penggunaan Tenaga Kerja Asing/ "RPTKA");
(ii) a recommendation letter for visa application for working purposes or known as "TA.01 recommendation";
(iii) a Visa Tinggal Terbatas (Temporary Stay Visa/"VITAS" pre-approval or also known as telex VITAS);
(iv) a VITAS approval; and
(v) a Limited Stay Permit ("KITAS"), Multi Exit Re-Entry Permit ("MERP") and Immigration Control Book ("Blue Book").

Prohibitions

Minister of Manpower and Transmigration Regulation No.PER.02/MEN/III/2008 on Procedures in Using Expatriates ("Decree 2/2008") prohibits the employer from assigning an expatriate to more than one position. The Decree also prohibits the employer from employing an expatriate who is employed by another employer. The latter prohibition, however, does not apply to expatriates who are appointed as directors or commissioners at other companies based on a resolution of a General Meeting of Shareholders.

In this matter, it is worth noting that the Labor Law prohibits expatriates from holding positions in which they "manage personnel" or other specific positions as stipulated by Ministerial Decree.

Compensation

In implementation of the Labor Law that obliges the employer to pay compensation for each of its expatriate workers, Decree 2/2008 sets the amount of compensation fund to be US$100 per month and regulates that this compensation must be paid in advance annually. The payment should be transferred to an account at a Government Bank stipulated by the Minister of Manpower and Transmigration. Failure to pay compensation is subject to administrative penalties, ranging from warnings to revocation of licenses.

[Relevant laws]

- Law No. 13 of 2003 on Labor
- Minister of Manpower and Transmigration Regulation No. PER.02/MEN/III/2008 on Procedures in Using Expatriates

9.6 The Service Agreement (Partnership Agreement)

9.6.1 General Overview

This paragraph considers the key provisions which should be contained in a partnership agreement. Article 23(1) of Presidential Regulation No.67/2005 (as amended by Presidential Regulation No.13/2010 and lastly amended by Presidential Regulation No. 56 of 2011 dated 9 September 2011) concerning the Cooperation between the government and the Business Entities in the Provision of Infrastructure (the ***PPP Laws***) provides that the following need to be set out in a partnership agreement:

(a) scope of work
(b) period
(c) performance bond
(d) rate and adjustment mechanisms
(e) rights and obligations, including risk allocation
(f) service performance standards
(g) transfer of shares before the partnership agreement project commercially operates
(h) sanctions in case the parties fail to comply with the provisions of the agreement
(i) termination of agreement
(j) Business Entity's financial statements in the framework of implementing the agreement, annually audited by an independent auditor, and any announcements thereof in the nationwide print media
(k) dispute settlement mechanisms related in stages, namely deliberation to reach a consensus, mediation, and arbitration/court
(l) mechanisms of supervision over Business Entity's performance in procurement implementation
(m) Use and ownership of infrastructure assets
(n) Return of infrastructure assets and/or management thereof to the Minister/Institution Head/Regional
(o) force majeure
(p) representations and warranties of the parties that the partnership agreement is valid and binding on the parties and has complied with the prevailing laws and regulations
(q) the use of language in the partnership agreement, i.e. Indonesian language, or if it is necessary, the agreement can be made in Indonesian language and in English language
(r) the prevailing law shall be the laws of Indonesia

In addition to the above, according to the Presidential Regulation No.78/2010 on Infrastructure Guarantee in the Cooperation Projects made between the Government and Private Entities conducted through the Infrastructure Guarantee Private Entity, in order to receive a state-issued guarantee, the partnership agreement between the government and private enterprise needs to contain the following:

(a) allocation of risks, including in relation to infrastructure
(b) risk prevention and mitigation of the effects of any risk should they actuate
(c) where infrastructure risk should be borne by the government, the amount which the government should pay or (if such amount cannot be determined at the date of the partnership agreement) the method by which such amount is to be calculated

(d) the period during which the government owes an obligation to make payment
(e) the manner in which a default is determined in respect of the obligation in (d) above
(f) dispute resolution mechanism
(g) Indonesian law as the governing law

In addition to above, it is thought that the provisions set out in the following section are required to be included in a partnership agreement. The content of such provisions and any points to note are as set forth below. Furthermore, the concept of the risk allocation described on "Model of Risk Allocation Table for the Intermediate Waste Treatment / Final Disposal Site / Operation & Maintenance in Legok Nangka, Nambo, West Java province, Indonesia" (Exhibit in Chapter 10) need to be provided in the partnership agreement.

9.6.2 The Provisions

A. Matters in relation to the overall business

A-1 Objective of the agreement

The objective of the agreement is to set out all of the terms necessary to ensure that the public body and the private enterprise cooperate to effectively carry out the relevant business.

A-2 Respecting the objective of the business

The agreement shall confirm that the private enterprise understands and respects the public nature of the relevant business and that the public body understands and respects that the relevant business will be carried out by a private enterprise.

A-3 Term

The term of the agreement (the term of the business) shall be determined. The agreement shall be effective from the date of execution thereof and shall remain in effect until a specified date (or a date falling a certain period from the date the facility is offered for use).

A-4 Business Schedule

Key deadlines in relation to the relevant business (e.g. date for commencing design and construction, inspection of completed works, confirming operational readiness, transfer, commencing maintenance and operations, ending maintenance and operations etc.) shall be set out in a business schedule and the private enterprise shall be required to adhere to such schedule in carrying out the relevant business.

A-5 Outline of business

An outline of the business which the private enterprise will need to carry out in accordance with the partnership agreement needs to be set out (to confirm the understanding between the parties). For example, where the relevant business involves a build-transfer-operate scheme, details in relation to design of the facility, construction of the facility, transfer to the public body, maintenance and operation of the facility and procurement of funds for the business should be set out.

[Note]

- It is usually the case that details of the business including the required standards statement (including the descriptions in relation to service performance criterion) shall be attached documents to the partnership agreement since they include technical matters.

A-6 Application and priority of rules

This provision will determine the relationship between provisions in the partnership agreement in relation to the relevant business and those in other related agreements. As the private enterprise will be carrying out the relevant business in accordance with (amongst other

things) the partnership agreement, bid explanatory materials and proposals from bidders, where discrepancies exist between any such documents, this provision will determine what prevails.

A-7 Procurement of funds by the private enterprise

This will set out the obligation of the private enterprise to procure funds. Also, where the private enterprise owes an obligation to make efforts to provide financial support, a cooperation obligation in respect thereof shall be imposed on the public body.

A-8 Representations and warranties

Representations and warranties in relation to the validity and effectiveness of the partnership agreement, the binding effect thereof on the parties and compliance with laws shall be set out.

A-9 Provision of the relevant site (lease)

It shall be provided that the public body shall provide (lease) the relevant site to the private enterprise. In addition, provisions in relation to additional costs or liability as a result of any delay on preparing the project site (including the access road in Nambo, and the tentative place for cover soil in Legok Nangka) or any latent defects (including land contamination etc.) shall be provided.

[Note]

- Provisions setting out the conditions in respect of the lease of land are usually set out in a separate lease agreement.

A-10 Acquiring licenses and permits

The obligation on the private enterprise to acquire all necessary permits and licenses to carry out the relevant business (together with the pubic body's duty to cooperate in relation thereto) shall be set out. Where the public body is required to acquire certain permits and licenses, an obligation will be imposed on the public body for the acquisition thereof (together with the private enterprise's duty to cooperate in relation thereto). Furthermore, provisions in relation to additional costs as a result of any delay on acquiring the necessary permits and licenses shall be provided.

A-11 Explanation to neighbors

The obligation of the private enterprise to carry out the business in accordance with relevant laws and regulations, to provide explanations to persons living proximate to any facility being constructed, and to carry out investigations (at its own cost and responsibility) in relation to the impact of any facility being constructed to persons living in the proximity of the facility to be set out. Also, where the public body deems necessary, the public body shall cooperate with the private enterprise in providing explanations to persons living proximate to any facility being constructed. Furthermore, provisions in relation to additional costs as a result of delay or interruption of this project, or termination of the relevant agreements caused by resident's campaigns or litigation that oppose this project shall be provided.

A-12 Elimination of risks concerning the final disposal facility constructed through yen loan

It shall be set out that any damages, expenses and losses in relation to issues concerning the final disposal facility constructed by means of yen loan shall not be borne by the private enterprise, and that the private enterprise shall not be responsible for failure to carry out the PPP business due to such issues (i.e., the consideration payable may not be reduced or withheld).

A-13 Arrangement of related infrastructure

Provisions in relation to job delay, additional costs (including the costs needed to repair or re-establishment of infrastructures) caused by shut down or incompletion of infrastructures

(such as electricity, water, gas pipeline, and access road and other traffic route etc.) shall be provided.

A-14 Environmental treatment

Provisions in relation to (1) environmental maintenance cost necessary for execution of this project (including rectification cost of environmental destruction caused due to execution of this project), (2) research costs (including monitoring cost and measuring cost etc.), needed to identify the cause of environmental destruction, (3) environmental repairing cost as a result of decrease in quality of compost, and (4) additional costs as a result of environmental or air pollution caused by the RDF that has been transferred to Pt. Indonesia shall be provided.

A-15 Third party liability

Provisions in relation to (1) resident's compensation cost against environmental destruction / obstruction which is unavoidable during execution of job such as scene, shadow, electric wave, underground water, soil collation etc., (2) increased cost of private enterprise due to job delay start up / cessation / cancellation of contracts caused by environmental destruction / obstruction which is unavoidable during execution of job such as scene, shadow, electric wave, underground water, soil collapse, (3) third party bodily injury / property damage liability (and / or compensation) during execution of the job (including accidental environmental liability), (4) cost of suit or liability charged on the public body against the accident caused during execution of job shall be provided.

A-16 Employer liability

Provisions in relation to workers' accident compensation during execution of the job and liability as an employer shall be provided.

B. Matters in relation to the design and construction of the facility

B-1 Designing the facility

It shall be an obligation of the private enterprise to design the facility at its own cost and responsibility in accordance with (amongst other things) the partnership agreement, bid explanatory materials and proposals from bidders. Provisions in relation to (1) the design of the facility and the preparation of a plan and (2) changes to the design shall be included.

[Note]

- Provision in relation to increased cost for change and / or delay in job scope or planning, in design by the open congress shall be provided.
- Provisions in relation to (1) cost and/or additional cost of re-assessment and/or re-design of land (soil, land, environmental condition and under ground cultural property etc.) due to fault in information provided by public body, (2) loss or damage of the facilities and/or third party liability caused due to fault in information provided by public body, and (3) increased cost due to job delay start up, cessation due to fault in information provided by public body shall be provided.

B-2 Construction of the facility

It shall be an obligation of the private enterprise to construct the facility in accordance with (amongst other things) the partnership agreement, bid explanatory materials and proposals from bidders. Provisions in relation to (1) construction of the facility, (2) transfer of the relevant plot of land, (3) submission of a execution plan in relation to the construction, (4) subcontracting, (5) management of the construction, (6) changes to deadlines, (7) damage to third parties (design/construction phase) and (8) damage or additional cost caused by force majeure or change in laws shall be included.

[Note]

- "Change in laws" shall contain (1) change in laws with respect to water quality standard (such as standard for polluted water and sewer water), (2) change in taxation, and (3) change in standard for government guarantee under IIGF.
- Provision in relation to increased cost for change and/or delay in job scope or planning, in design or planning of facilities influenced by the open congress shall be provided.

B-3 Confirmation by the public body

In order to ensure that the construction works are taking place in accordance with the partnership agreement, the public body shall be entitled to confirm progress made by the private enterprise during the construction phase. Provisions in relation to (1) site inspection (2) inspection of completed works and (3) maintenance, management and operation shall be included.

B-4 Transfer of the facilities

The transfer of the facilities upon completion of construction from the private enterprise to the public body needs to be provided for (in a build-transfer-operate scheme, transfer takes place after notification of confirmation of completion; in a build-operate-transfer scheme, transfer takes place after expiration of the contract). Provisions in relation to (1) transfer of the facility (2) delay in transfer (or start of operations) and (3) defects and liability shall be included.

C. Maintenance, management and operation of the facility

C-1 Maintenance, management and operation

It shall be an obligation of the private enterprise to maintain, manage and operate the facility at its own cost and responsibility in accordance with (amongst other things) the partnership agreement, bid explanatory materials and proposals from bidders.

C-2 Delegation to third parties of maintenance, management and operation

As with the design and construction of the facility, the delegation of maintenance, management and operation of the facilities by the private enterprise to a third party shall be provided for.

C-3 Specification of businesses

It shall be set out that in case the private enterprise is required to provide the specification of businesses which stipulates detailed business contents satisfying the required standards, the public body shall confirm whether contents of the specification of businesses provided by the private enterprise satisfy requirements stipulated in the required standards statement, etc., and that the public body may request the private enterprise to revise the specification of businesses if it fails to satisfy the requirements stipulated in the required standards statement, etc.

C-4 Business Report

It shall be an obligation on the private enterprise to prepare and provide periodic business reports to the public body so as to enable the public body to monitor and confirm the performance of the maintenance, management and operation of the facility.

C-5 Liability to third parties (maintenance, management and operation stage)

The liability of the parties to third parties as result of damage caused by the private enterprise's maintenance, management and operation of the facilities shall be provided for. Where such damage has been caused by reasons attributable to the public body, the public body shall be liable for any damages in relation thereto.

C-6 Accident or disaster

Provisions in relation to (1) a decrease in revenue of private enterprise or additional cost, such as usage charge in alternative facilities, as a result of any delay in any accident or disaster during construction period, (2) a decrease in revenue of private enterprise or additional cost as a result of any interruption caused by any accident or disaster during operation period shall be provided.

C-7 Damage in facilities

Provisions in relation to restoration cost for facilities, a decrease in revenue (due to interruption in this project), and additional cost (caused by bankruptcy of this project) as a result of latent defects or mistaken in operation and maintenance shall be provided.

C-8 Force majeure or change in laws (maintenance, management and operation stage)

The allocation of risk (including risk in relation to a decrease in revenue), notification procedures and performance of obligations upon the occurrence of a force majeure event or change in laws (i.e. where performance of the maintenance, management and operation obligations under the partnership agreement become impossible for reasons outside either party's control) shall be provided for.

[Note]

- "Change in laws" shall contain (1) change in laws with respect to water quality standard (such as standard for polluted water and sewer water), (2) change in regulation of the CDM (such as making the CDM obligatory), (2) change in taxation, and (4) change in standard for government guarantee under IIGF.

C-9 Supply Risk

Provisions in relation to (1) additional cost, restoration or renovation cost, and a decrease in revenue as a result of decreasing or increasing of demand for disposal of general waste, or change or decreasing in quality of the general waste, (2) additional cost, damage in employees and/or facilities, and a decrease in revenue as a result of carried-in industry waste / dangerous waste shall be provided.

C-10 technical innovation

Provisions in relation to renovation cost in facility instructed or desired by public body in accordance with technical innovation.

C-11 Large-scale repairing

Provisions in relation to additional cost caused by unforeseen large-scale repairing and a decrease in revenue caused by interruption of this project accompanied with the large-scale repairing shall be provided.

C-12 Market Risk

Provisions in relation to (1) a decrease in revenue as a result of decreasing the amount/the price of the recycle goods in relation to sales/disposal, or changing in shipping of the recycle goods, and increased cost caused by the lack of capacity in the final disposal yard, (2) the lack of the capacity in the final disposal yard caused by decreasing of the amount of receipt (including causing from failing of the quality for the RDF), and (3) a decrease in revenue or additional cost caused by defect in quality of compost shall be provided.

C-13 Inspection prior to termination

In order to prepare for the change of the operating body in connection with the expiration of the contract, the public body shall inspect the condition of the facility prior to the expiration of the contract. It shall be an obligation on the private enterprise to inspect the condition of the

facility a certain period of time before the expiration of the contract, and to report the results of the inspection to the public body.

D. Payment of consideration

D-1 Payment of consideration

It shall be an obligation on the public body to pay to the private enterprise a specified amount in respect of the private enterprise's design, construction, maintenance, management and operation of the facility in accordance with the partnership agreement, bid explanatory materials and proposals from bidders (such amount to be the consideration for services rendered). Provisions in relation to payment structure, payment amount and payment method shall be included.

<Note>

- The payment structure needs to be such that the consideration for services rendered does not depend on and is not affected by the actual revenues derived from the facility.

D-2 Reduction in consideration

Where the public body monitors the performance of the private enterprise and determines that the private enterprise's performance of its obligations does not meet the required standards or arguably does not conform to the requirements set forth in the partnership agreement, provisions should be included to provide for reduction in consideration payable or withholding payment.

<Note>

- So long as the services provided by the private enterprise meet the required standards (i.e. availability is secured), even if the facility is not used for reasons outside the control of the private enterprise (e.g. reasons attributable to the public body), it must be made clear that the consideration payable to the private enterprise may not be withheld or reduced.

D-3 Adjustment of consideration

A mechanism shall be included for revising the consideration payable owing to any increase or decrease in the private enterprise's expenses as a result of asset price, interest rate, currency exchange rate fluctuations. Where technical improvements are required in relation to any aspect of the relevant business, changes to the required standards (expected in relation to the business) and the consideration payable shall be considered.

D-4 Non-payment of the consideration or subsidy

Provisions in relation to liability and additional cost as a result of delay, decreasing, or non-payment of the consideration or a subsidy (if any) shall be provided.

E. Termination of agreement

E-1 Termination right of the public body

The public body shall be provided with the right to terminate the partnership agreement if the private enterprise fails to perform any of its obligations thereunder, the public body notifies the private enterprise of such failure and the private enterprise fails to remedy such failure within a specified period of time.

E-2 Termination right of the private enterprise

The private enterprise shall be provided with the right to terminate the partnership agreement if the public body either fails to pay when due the consideration in respect of the services rendered by the private enterprise or fails to perform its material obligations under the partnership agreement and such failure results in it becoming difficult for the private enterprise

to carry out the relevant business, but in both cases, only where the private enterprise gives notice of such failure and the public body fails to remedy such failure within the applicable remedial period.
<Note>

- The private enterprise shall be provided with the right to stop the job if the public body fails to pay the consideration.

E-3 Termination right upon occurrence of force majeure or change in laws

Where performance by the private enterprise of part or all of its obligations becomes impossible as a result of events outside the control of the parties (e.g., force majeure or change in law), the public body shall be provided with the right to terminate all or a part of the partnership agreement after consultation between the parties.
<Note>

- "Force majeure" shall contain of the political force majeure risk. Provisions in relation to (1) foreign currency exchange risk, (2) regulatory framework risk, (3) cancellation/ amendment of approval/consent risk, (4) expropriation risk, (5) contract breach risk (including risks in relation to changing a head of region, disapproval by the congress (such as budget etc), changing political strategy, financial collapse), (6) political violence risk (including risks in relation to uprising, terrorism, strike, sabotage shall be provided.

E-4 Effect of termination

If the partnership agreement is terminated, the following shall be provided for: (1) restoration obligation (including how property rights in relation to the relevant business are dealt with; (2) how damages resulting from any termination (including financial expense) are dealt with, (3) payment of unpaid consideration, and (4) obligation of earned value (performance).

E-5 Penalties

Should the partnership agreement be terminated for reasons attributable to the private enterprise, provisions should be included to set out (1) an obligation on the private enterprise to pay a penalty to the public body and the amount of such penalty and (2) the relationship between such penalty and claim for damages, adjustment of the penalty and any performance bonds and any setoff arrangements (in respect of such penalty and any payment obligations owed by the public body).

E-6 Procedure upon termination

Where it is anticipated that the public body will continue to use the facility after the termination or expiration of the partnership agreement, provisions shall be included to cover (1) the removal by the private enterprise from the facility of any articles owned by it and (2) the transfer of business operations from the private enterprise to its successor (together with any documents and materials necessary for such transfer). Meanwhile, if the public body intends to terminate the business itself, provisions in relation to the dismantlement/removal of the facility and the restoration to the original state shall be included.
<Note>

- Provisions in relation to repairing of defect of facility and rehabilitation cost of the facility accompanied with transferring of the ownership of the facility shall be provided.
- Provisions in relation to additional cost, such as cost for dismantlement/removal of the facility or ground grading cost, and disposal cost for seeping water shall be provided.

F. Other matters

F-1 Disposal of rights by the private enterprise

Provisions shall be included to provide for the disposal by the private enterprise of any of its rights and obligations under the partnership agreement. The private enterprise shall not do any of the following without first obtaining the consent of the public body: (1) transfer any of its rights or obligations under the partnership agreement to a third party, provide any rights as security or otherwise dispose of any of its rights or obligations; (2) issue shares, share options or convertible bonds; and (3) merger with any other entity. Restrictions should also be included on the transfer of any of the private enterprise's shares.

F-2 Report on management

The private enterprise shall be subject to an obligation to provide the public body with reports on its financial and business condition (including submission of financial statements which have been audited by a certified public accountant) to enable the public body to confirm that the private enterprise can continue to provide public services.

F-3 Default interest

An obligation should be included on both parties to pay default interest to the other should it fail to pay, when due, any amounts owing under the partnership agreement (such amount to be calculated by reference to the unpaid amount and the number of days of delay).

F-4 Performance bond

It shall be an obligation of the private enterprise to pay guarantee deposits, or instead to obtain performance guarantee insurance, etc.

F-5 Insurance

Provisions in relation to types and contents of the insurance which (1) the private enterprise shall obtain at its own expense or (2) the private enterprise shall be obliged to make contractors obtain, shall be included.

F-6 Intellectual Property Rights

Provision in relation to liability to third parties and additional cost as a result of utilization of intellectual property rights shall be provided.

F-7 Confidentiality

Both parties shall owe duties of confidentiality in respect of any information in relation to the other which has been obtained as a result of performance of or entering into of the partnership agreement and no such information may be disclosed to third parties.

F-8 Dispute resolution

A dispute resolution mechanism shall be included to deal with any disputes which may arise between the parties (consultation, arbitration, litigation etc.). In addition, provision in relation to waive the right of sovereign immunity held by public body shall be provided.

F-9 Governing law/language

The governing law of the agreement shall be Indonesian law The language of the agreement is Indonesian language, or if it is necessary, the agreement can be made in Indonesian language and in English language. The regulations do not mention which version should prevail in case of inconsistencies between the Indonesian and English languages. There is a view that the prevailing language can be agreed upon by the parties in the agreement.

F-10 Consultation

A duty to enter into good faith consultations shall be included where both parties determine that the matters not covered in the partnership agreement need to be provided for or where doubts arise in relation to the interpretation of any of the provisions of the partnership agreement.

9.7 Sub-Contract

The sub-contract to be entered into between the SPC and the construction company which entrusts/delegates construction to the construction company (the "Construction Agreement") needs to contain the provisions set forth below. It should be noted that the list below merely sets out provisions which are particularly relevant to PPP projects and is not intended to be a comprehensive list of all provisions which need to be set out in the Construction Agreement.

A. Pass through

The Construction Agreement must pass through all of the SPC's obligations with respect to construction under the partnership agreement between the SPC and the public body.

In particular, the Construction Agreement must make clear that all of the construction-related operations set forth in the partnership agreement need to be entrusted to the construction company and that the construction company is responsible for carrying out such operations at its own cost and responsibility.

Moreover, a provision is to be included to ensure that the SPC owes all of its obligations and responsibilities under the partnership agreement (including in relation to costs and damages) to the construction company.

Furthermore, in relation to the liability for costs and damages which the SPC shall owe to the construction company, it shall be provided that the SPC shall be liable to pay over, upon receipt, any amounts relating to such liabilities from the public body or any other subcontractor.

B. Subcontracting fee

It shall be provided that contracting fee shall not be revised, even if the contracting costs or expenses are increased as a result of asset price fluctuations during the term of the agreement.

Moreover, in relation to payment by results which the SPC owes the construction company where the partnership agreement is terminated, it shall be provided that the payment by results shall be payable upon the SPC's receipt of any amount equivalent to the payment by results to the construction company from the government in accordance with the partnership agreement.

It shall be provided that where the consideration payable from the government to the SPC in accordance with the partnership agreement is decreased as a result of amendment of required standard or design, the contracting fee payable from the SPC to the construction company in accordance with the Construction Agreement shall be decreased accordingly.

C. Ownership

The ownership of the disposal facility which the construction company will construct in accordance with the Construction Agreement shall be held by the SPC from the beginning needs to be set out.

D. Intellectual Property Rights

Where the construction company holds a copy right, a parent right or any other intellectual property right (correctively "Intellectual Property Rights") in relation to any materials made by the construction company in accordance with the Construction Agreement, it shall be provided that the Intellectual Property Rights shall be transferred from the construction company to the SPC without any compensation.

E. Prohibition of cancellation

It shall be provided that the construction company may not terminate the Construction Agreement unless there is a written agreement between the construction company and the SPC.

F. Liability for latent defects

The liability of the construction company for latent defects, which is basically the same provisions with that of the government's liability in accordance with thee partnership agreement, need to be set out.

G. Waiver of rights to commence insolvency procedure

In order to ensure that the SPC stably conducts this project, provision shall be included to waive the rights to commence insolvency procedure, provisional attachment, provisional disposition, and litigation held by the construction company against the SPC.

H. Waiver of rights of retention

In order to ensure that the construction company transfers the disposal facility being constructed to the SPC, provision shall be included to waive the right of retention, the right of defense for simultaneous performance held by the construction company against the SPC.

I. Amendment

From the concept of the Pass through (as mentioned above), provision shall be included that where the partnership agreement is amended, the Construction Agreement shall be amended accordingly.

J. Prohibition of set-off from the construction company

Provision shall be included to prohibit the construction company to set-off the claims against the SPC. This is because if the construction company is allowed to conduct such set-off, it means that the construction company may be satisfied their claim in priority to bank providing project finance for the SPC.

9.8 O&M Agreements

The operation and management agreement to be entered into between the SPC and the O&M conductor which entrusts/delegates operation and management to the O&M conductor (the "O&M Agreement") needs to contain the provisions set forth below. It should be noted that the list below merely sets out provisions which are particularly relevant to PPP projects and is not intended to be a comprehensive list of all provisions which need to be set out in the O&M Agreement.

A. Pass through

The O&M Agreement must pass through all of the SPC's obligations with respect to operation and management under the partnership agreement between the SPC and the public body.

In particular, the O&M Agreement must make clear that all of the operation and management related operations set forth in the partnership agreement need to be entrusted to the O&M conductor and that the O&M conductor is responsible for carrying out such operations at its own cost and responsibility.

Moreover, a provision is to be included to ensure that the SPC owes all of its obligations and responsibilities under the partnership agreement (including in relation to costs and damages) to the O&M conductor.

Furthermore, in relation to the liability for costs and damages which the SPC shall owe the O&M conductor, it shall be provided that the SPC shall be liable to pay over, upon receipt, any amount relating to such liabilities from the public body or any other sub O&M conductor.

B. Service fees

Provision shall be included that with respect to service fees payable from the SPC to the O&M conductor, the SPC shall be liable to pay such service fees, at the time when the SPC receives such fees from the government body in accordance with the partnership agreement, at the extent that the SPC receives from the government body.

Moreover, provision shall be included that if the service fees payable from the government body to the SPC in accordance with the partnership agreement is reduced or suspended, the service fees payable from the SPC to the O&M conductor in accordance with the O&M Agreement shall be reduced or suspended accordingly.

C. Intellectual Property Rights

Where the O&M conductor holds a copy right, a parent right or any other intellectual property right (correctively "Intellectual Property Rights") in relation to any materials made by the O&M conductor in accordance with the O&M Agreement, it shall be provided that the Intellectual Property Rights shall be transferred from the O&M conductor to the SPC without any compensation.

D. Prohibition of cancellation

It shall be provided that the O&M conductor may not terminate the O&M Agreement unless there is a written agreement between the O&M conductor and the SPC.

E. Waiver of rights to commence insolvency procedure

In order to ensure that SPC stably conducts this project, provision shall be included to waive the rights to commence insolvency procedure, provisional attachment, provisional disposition, and litigation held by the O&M conductor against the SPC.

F. Amendment

From the concept of the Pass through (as mentioned above), provision shall be included that where the partnership agreement is amended, the O&M Agreement shall be amended accordingly.

G. Prohibition of set-off from the O&M conductor

Provision shall be included to prohibit the O&M conductor to set-off the claims against the SPC. This is because if the O&M conductor is allowed to conduct such set-off, it means that the O&M conductor may be satisfied their claim in priority to bank providing project finance for the SPC.

10. Risk Analysis and Necessity of Insurance

10.1 Summary of Risks in Conjunction with Facility Development and the Performance of Operation and Maintenance

10.1.1 Concept and Categories of Risks

In this section the concept and categories of risks are summarized. The risks can be divided into pure risks and market risks (or trade risks)[1].

Risks are defined as events that "can result in losses (cost overruns) to businesses" and are distinguished from the causes that give rise to the risks and the process of risk occurrence[2].

[1] Pure risks are those which cause negative results (losses) when they realize, as in the cases of accidents and disasters. In contrast, market risks are those arising from changes in market conditions or political/social/economic conditions. These risks generally cannot be avoided when undertaking business.

[2] Risks include those of direct or indirect losses incurred by businesses, including (1) expenditures for restoration of facilities, (2) decrease of income or loss because of inability to use facilities, (3) personnel losses on employees, and (4) compensation or indemnification to third parties.

Table 10-1 List of Risks That Businesses May Incur (examples)

(1) Socioeconomic Risk Causes and Factors (mainly market risks)

Socioeconomic Risks	Economic and Market Risks
Risk of war, civil war, rioting, civil commotion, and terrorism	Risk of economic changes and economic crises
Risk of commercial and trade problems	Risk of impossibility of obtaining government guarantees
Risk of change of government or change of government policies	Risk of changes in market needs (waste processing, recycling markets)
Risk of legal and tax regulation changes	Risk of inability or delays in acquiring land
Risk of deregulation or tightened regulation	Risk of inability or delay in developing infrastructure
Risk of resident campaigns in opposition	Risk of changes in prices, exchange rates, interest rates, or market values
Risk of deterioration of public order	Risk of consumer movements
Risk of resident activism	Risk of inability to collect processing fees an outstanding processing fees
Risk of scavengers	

Strategic and Tactical Risks	Legal, Financial, and Personnel Risks	Technology, Product, and Environmental Risks
Risk of strategic and tactical failure	Risk of legal violations	Risk of decrepitude as a result of technological innovation
Risk of insufficient management capabilities and scandals	Risk of infringement of intellectual property rights, copyrights, patents rights, or privacy	Risk of failure of R&D and capital investment
Risk of failure of organizational plans and resource allocation plans	Risk of inability to secure financing	Risk of product liability and recalls
Risk of disorganized management	Risk of the occurrence of uncollectible accounts	Risk of failure of developed products
Risk of information leaks	Risk of decrease in financial rating	Risk of environmental pollution such as improper treatment of leachate
Risk of bankruptcy by trading partners	Risk of improper conduct by employees, scandals, personnel losses to other companies, and failure of technology transfer	Risk of intrusion of toxins and hazardous materials
Risk of corporate acquisition merger, or absorption	Risk of officer and employee suicide and the disappearance	Risk of improper waste processing and recycling
	Risk of human rights violations, discrimination, and sexual harassment,	Risk of failure of public relations and lobbying
	Risk of insider trading	
	Risk of a shareholder derivative lawsuits	
	Risk of whistleblowers	
	Risk of labor disputes	

(2) Accident and Disaster Risk Causes and Factors (mainly pure risks)

Natural Disaster Risks	Man-Made Disaster Risks
Risk of earthquake, volcanic eruption, tsunami	Risk of aircraft or other objects falling or colliding
The risk of typhoon, windstorm, tornado, and other wind damage	Risk of willful misconduct or arson by third parties or terrorism
The risk of high tides, inundation, and inland flooding	Risk of fire, explosion, or rupture
Risk of lightning, hail, snow, cold weather, and frost	Risk of traffic accidents or theft
Risk of landslides, rockfall, and abnormal water flows	Risk of the design, manufacturing, material, construction, or work errors
	Risk of accidents involving employees (occupational accidents)
	Risk of cyber terrorism and computer viruses

10.1.2 Identification of Major Risks in Conjunction with Execution of the Project and Risk Allocation between Public and Private Sector

Of the risk causes and processes identified in Table 10-1, the content, assessment, suggested responses and bearers of those risks to be considered in the performance of this project are listed in Table 10-2 “Risk Allocation”. Risks particularly critical out of those in Table 10-2 are listed in Table 10-3.

The identification of risks is the first step in risk management for businesses, and involves the identification of all major risks that businesses will face. If any major risks are overlooked at this stage, the opportunity to manage them appropriately will be lost, and this may have a material impact on the management.

Table 10-2 Model of Risk Allocation for This PPP Project

Risk matrix rank ;
F ; **F**requency (**L**ow, **M**edium, **H**igh)
D ; **D**amageability (**S**mall, **M**edium, **L**arge)

Bearer ;
○ ; Mainly bear the risk sharing
△ ; Limitedly bear the risk sharing
Blank ; Basically free from the risk sharing

Job stage	Risks category	Type of risks	No.	Outline of risks	Risk matrix rank	Bearer				Insurance coverage	Comments
						Public sector	Private sector				
							SPC	EPC	O&M		
For whole stages	Law / Regu-ration risks	Renewal, new establishment and/or strengthen of law / regulation / administrative guidance risks	1	Increase of cost due to material change, establishment of law / regulation for business executed by West Java Provincial Government such as the change of the regulation regarding the water quality standard of sewage, discharged water, etc. or the change of Government Guarantee standard set by IIGF .	FL DS	○					Subject to re-evaluation of service fee.
			2	Decrease of profit of SPC due to the cahnge of framework of CDM (Although composting is considered to be the income for CDM in this project, either the case when the composting of general waste is required by FDS regulation and/or it does not become income in case of exceeding the execution ratio of 50%.)	FL DS	○	○				Basicaly the risk of decreased profit is due to the private sector but subject to re-evaluation of service fee in case of giving severe impact to the project.
			3	Cancellation cost of contracts (including loan agreement) caused by the business default due to cost overrun / technical issue.	FL DS	○					
		Renewal, change, new establishment and / or abandonment of tax regulation risks	4	Increase / decrease of cost due to value added tax regulation.	FL DS	○					Subject to re-evaluation of service fee.
			5	Increase / decrease of cost due to material change of tax regulation for environmental treatment and /or business execution.	FL DS	○					Subject to re-evaluation of service fee.
			6	Increase / decrease of cost due to other tax regulation such as VAT, Income Tax, etc..	FL DS		○	○	○		Increase / decrease of cost due to other tax regulation shall be owe to the private sector changed. Change and /or disqualification of Government Guarantee standard set by IIGF shall be in accordance with above "No.2".
		Delay acquirement of licensees	7	Increased cost of delayed acquirement of licensees for the construction / operation (additional cost of delay, liquidated damages and / or loss of profit).	FL DS		○	○	○		Except duty of the public sector.
	Political / Social risks	Change of government leader, disapproval by congress risks.	8	Additional / increased cost due to job delay start up / cessation influenced by change of government leader and / or disapproval by congress.	FL DS	○					
			9	Decreased profit due to the disapproval or change of PFI service fee every year. (there is no concept as long term debt burden in Indonesia)	FL DS	○					
			10	Loss of profit , cost overrun due to job delay start up / cessation / cancellation of contract influenced by change of government leader and / or disapproval by congress.	FL DS	○					
		Change of fiscal policy , fiscal default risks	11	Additional cost due to job delay start up/ cessation / cancellation of contract influenced by change of administrative guidance of government.	FL DS	○					
			12	Loss of profit / cost overrun of SPC due to due to job delay start up / cessation / cancellation of contract influenced by change of administrative guidance and / or the default of government sector.	FL DS	○					
		Residents campaigns risks	13	Increased cost of SPC due to job delay start up / cessation / cancellation of contracts influenced by the residents campaigns against execution of job at the site which is provided by the government.	FL DM		○	○	○		
	Political / Social risks	Residents campaigns risks	14	Resident campaign against execution of job despite SPC's compliance with the regulation.	FL DS	○					
			15	Increased cost of SPC due to job delay start up / cessation / cancellation of contracts influenced by the residents campaigns or lawsuit against execution of job at the site .	FL DM		○	○	○		Residents campaigns influenced by responsibility of SPC
			16	Property damage of the facilities due to residents campaigns.	FL DM	○	○	○	○	○ Coverable under EAR (Erection All Risks Ins.) , Property All Risks Ins.	Insurance coverage shall be basic protection.
		Acquirement of land risks	17	Additional cost / loss of profit due to delay of acquirement of land or access road in Nambo (which should be provided by the government) / job cessation.	FL DS	○					Basically SPC is not responsible for the acquirement of land.(except in "Build to Transfer" case in which SPC is responsible for land use.)
			18	Cost of acqurement of temporary yard for surface soil in Legok Nanga	FL DM	○					Estimated cost is calculated based on the transportation to the temporary yard within 1 Km but the construction cost for access road or land reclamation of temporary yard is not included.
			19	Additional cost of rectification of fault (contamination of land etc.) of land which is provided by the government.	FL DS	○					The construction cost for access road or land reclamation of temporary yard is not included in the estimated cost.
		Arrangement of related infrastructure risks	20	Additional cost / cost overrun due to job delay start up / cessation caused by shut down and /or incompletion of infrastructure (such as electricity , water, gas pipeline,access road, railway etc).	FM DS	○				○ Coverable under DSU (Delay In Start Up), Business Interruption Insurance	Consequential loss / damages due to accident / disaster can be covered under insurances.

For whole stages	Political / Social risks	Arrangement of related infrastructure risks	21	Additional cost / cost overrun due to job delay start up / cessation caused by incompletion of access road in Nambo	FH DL	○					Access road in Nambo shall be constructed partly lay in the site owned by the private party. (An agreement shall be made between Pt. Indocement and West Java Province government regarding the use of access road and delivery condition of RDF.
			22	Additional cost / cost overrun for equipment / repair of infrastructure (such as electricity, water, gas pipeline, traffic route etc).	FM DS	○					
		Environmental treatment risks	23	Environmental maintenance cost necessary for execution of the job.	FL DS		△	○	○		Except a portion of assessment done by public sector.(Private sector is not responsible as far as they comply with regulation and EIA standard)
	Political / Social risks	Environmental treatment risks	24	Analysis cost(monitoring, measuring, etc.) for identification of cause of environmental destruction.	FL DS	○	△	△	△		Monitoring plan and cost burden should be agreed between public and private sector.(Private sector is not responsible as far as they comply with regulation and EIA standard)
			25	Environmental reclamation cost due to the decrease of quality of compost which will be distributed by West Java Province government on the land of Environment and Forests Ministry.	FL DS	○					West Jova Province government receive the compost and SPC has no concern after that.
			26	Additional cost due to environmental/air pollution caused by burning of RDF delivered to Pt. Indocement.	FL DS	○					West Java Provincial government and Pt. Indocement shall be responsible for environmaental/air pollution caused by burning of RDF after delivery to Pt. Indocement.
			27	Additional cost due to reclamation of environmaental destruction suddenly caused during exscution of job	FL DM		△	○	○	○ Partly coverable under Third Party Liability Insurance	Insurance coverage against accidental third party liability (Property damage / bodily injury) shall be basic protection.
		Third party liability risks	28	Residents compensation cost against environmental destruction / obstruction which is unavoidable during execution of job such as scene, shadow, electric wave, underground water, soil collation etc.	FM DS	○					Environmental maintenance cost during construction / operation shall be owe to the private sector.
			29	Increased cost of SPC due to job delay start up / cessation / cancellation of contracts caused by environmental destruction / obstruction which is unavoidable during execution of job such as scene, shadow, electric wave, underground water, soil collapse	FM DS	○					Except duty of the private sector.
			30	Third party bodily injury / property damage liability (and / or compensation) during execution of the job (including accidental environmental liability).	FM DM		△	○	○	○ Coverable under Third Party Liability Insurance	Insurance coverage against accidental environmental destruction shall be basic protection.
			31	Cost of suit or liability charged on the public sector against the accident caused during execution of job.	FL DS	○				○ Coverable under Third Party Liability Insurance	Insurance coverage shall be basic protection by attaching public sector into the additional insured of the insurance policy arranged by the private sector.
		Employer's Liability risks(Workers' Accident)	32	Liability damage and cost due to workers' compensation and employer's liability caused during execution of the job.	FH DM		○			Workers' Compensation Insurance(WCI) or Employer's Liability Insurance shall be basic coverage.	Insurance coverage shall be basic protection.
	Economical risks	Interest rate trend risks	33	Increased construction cost due to rising of interest rates of finance during EPC contract period.	FM DS		△	○			Interest-rate swap shall be basic protection.
	Economical risks	Interest rate trend risks	34	Incresed cost due to the change of loan rate for SPC	FM DS		○				Interest-rate swap shall be basic protection.
			35	Increased operation cost due to rising of interest rates of finance during operation and maintenance period	FM DS		△		○		Interest-rate swap shall be basic protection.
			36	Liquidated damages etc. due to change, cessation, cancellation of loan agreement caused by other than Force Majeure.	FL DM		○	○	○		Financing risk other than Force Majeure shall be owe to the private sector.
		Inflation risks	37	Increased and / or decreased cost of construction, operation due to inflation / deflation.	FH DS	○	△	△	△		Material increased and / or decreased cost shall be subject to re-evaluation of service fee based on the public index data.
		Exchange rate risks	38	Deacreased profit due to exchange flactuation.	FH DS	○	△	△	△		Material increased cost due to severe influence to execution of the job shall be subject to re-evaluation of service fee..
		Acquirement of subsidy risks	39	Additional cost of SPC due to delay payment of scheduled subsidy.	FL DS	○					Except duty of the private sector.
			40	Additional cost of SPC due to decrease / nonpayment of scheduled subsidy.	FL DS	○	△	△	△		Additional cost due to private sector shall be owe to the private sector.

For whole stages	Economical risks	Support (guarantee) by sponsor risks	41	Additional cost necessary for business continuity such as investment of capital, inferior loan and / or guarantee of obligation for public expenditure, readiness against business cost overrun of SPC.	FL DS		○				Basically the public sector is harmless.
			42	Cost of guarantee of obligation of SPC for readiness against provision of manpower, technical information for treatment of waste.	FL DS		○				Basically the public sector is harmless.
	Force Majeure risks	Delay start up risks	43	Increased cost due to job delay start caused by Force Majeure.	FL DM	○					Including increased cost caused on the private sector due to cancellation / cessation of the contracts
		Cancellation of contract risks	44	Increased cost due to cancellation / cessation of the contracts caused by Force Majeure.	FL DL	○					Including increased cost caused on the private sector due to cancellation / cessation of the contracts
		Facility damage risks	45	Repair cost of damaged facilities due to Force Majeure (such as War, Civil War, Invasion, Terrorism, Radioactive Contamination etc.).	FL DL	○				△ Review emergency coverage under Trade Insurance	Including increased cost caused on the private sector due to cancellation / cessation of the contracts
			46	Repair cost of damaged facilities due to Force Majeure (such as Earthquake, Tsunami, Volcanic Eruption).	FL DL	○	△			○ Coverable under EAR (Erection All Risks Ins.) , Property All Risks Insurance	Insurance coverage shall be basic protection but public sector shall be responsible for the excess of insurance coverage
	Force Majeure risks	Facility damage risks	47	Repair cost of damaged facilities due to other than Force Majeure specified above.	FM DM	○	△			○ Coverable under EAR (Erection All Risks Ins.) , Property All Risks Insurance	Insurance coverage shall be basic protection.
			48	Increased cost of change in design, job scope due to Force Majeure.	FL DM	○					
	Theft of patent risks	Theft of patent risks	49	Penalty and additional cost caused by patent theft.	FL DS			○	○		Necessary for checking the patent of crushing machine, leachate treatment system, etc.(Check Fukuoka system)
Planning, Design stage	Facility damage risks	Assessment of land, rectification of faulty land risks	50	Additional cost of land assessment, rectification and / or decontamination of land fault (such as contamination of soil and underground water).	FL DS	○					Except duty of the private sector.
		Arrangement of land use condition	51	Additional cost for acquire licensees' and the cost due to delay / incompletion of land which should be provided by the government.	FL DS	○					
	Planning risks	Amendment of contents / planning of the job risks	52	Increased cost for change and or delay in job scope, planning by the open congress.	FL DM	○					Except duty of the private sector.
	Misassessment before agreement	Misascessment risks	53	Cost and / or additional cost of re-assessment and / or re-design of land (soil, land, environmental condition and under ground cultural property etc.) due to fault or insufficiency in previous assessment done by government sector..	FL DL	○					
			54	Loss or damage of the facilities and / or third party liability caused due to mis assessment done by government sector .	FL DL	○				○ Coverable under EAR (Erection All Risks Ins.) , Third Party Liability Insurance	Insurance coverage shall be basic protection.
			55	Increased cost of SPC due to job delay start up , cessation caused by mis assessment done by government sector.	FL DM	○					
	Faulty Design risks	Faulty design, design change risks	56	Additional cost of re-design and / or repair cost for repair of fault in design in case of "Design Build".	FL DL			○			Except duty of the public sector.
			57	Additional cost of re-design.in case of "Design Build".	FL DM			○			Except requirement / reasons by the public sector.
	Faulty Design risks	Faulty design, design change risks	58	Loss or damage of the facilities / third party liability due to fault in design in case of "Design Build".	FL DL			○		○ Coverable under EAR (Erection All Risks Ins.) , Third Party Liability Insurance	Insurance coverage shall be basic protection except requirement / reasons by the public sector.
			59	Additional cost of SPC due to job delay start up / cessation caused by accident due to design change , fault in design. In case of "Design Build"	FL DL		○	△		○ Coverable under DSU (Delay In Start Up), Business Interruption Insurance	Except requirement / reasons by the public sector.Insurance coverage shall be basic protection. Consequential loss of SPC shall be owe to SPC(subject to penalty) and increased cost of EPC shall be owe to EPC.
	Finance cost / inflation risks	Cost overrun for assessment / design risks	60	Increased cost of assessment / design due to rising of finance cost, inflation during assessment / design stages in case of "Desighn Build".	FM DS			○			

Construction stage	Design / planning risks	Change of design / planning risks	61	Increased cost for change in design, planning of facilities influenced by the open congress etc.	FL DS	○					Except duty of the private sector.
	Mis desigh risks	Construction cost overrun risks	62	Increased cost of construction (including re-assessment / re-design) due to fault in assessment , design.	FL DM			○			Except requirement / reasons by the public sector and duty of the public sector.
		Delay start up / cessation of works risks	63	Increased cost due to delay / cessation of construction works caused by delay of acquirement of licensees' and due to fault in assessment / design.	FL DM			○			Except requirement / reasons by the public sector and duty of the public sector.
		Third party liability due to misassessment / misdesign risks	64	Third party liability caused by accident due to mis assessment / mis design.	FL DL			○		○ Coverable under Third Party Liability Insurance	Except requirement / reasons by the public sector. Insurance coverage shall be basic protection..
		Facility damages due to misasessment / misdesign risks	65	Repair cost of damaged facilities caused by mis assessment / mis design.	FL DL			○		○ Coverable under EAR (Erection All Risks Insurance)	Except requirement / reasons by the public sector. Insurance coverage shall be basic protection..
	Requirement incompletion risks	Disqualification under requirement risks	66	Additional cost of construction for repair and / or rectification of faulty part, inadequate part and shortage of faculty under requirement.	FH DS			○			Identification of requirement level⇒Describe in the contract (Increased construction cost due to change of requirement level shall be owe to the public sector) Change at the whole stage.
	Operation delay start up risks	Construction cost overrun risks	67	Increased cost due to delay completion caused by Force Majeure.	FL DL	○				○ Partly coverable under Advance Loss of Profit Insurance.	Delayed damage due to accident or disaster (excluding disaster caused by War, Civil Comotion, Terrorism, Radioactive Contamination) shall be covered under insurance.
	Operation delay start up risks	Construction cost overrun risks	68	Increased cost due to delay completion caused by other than Force Majeure.	FH DS			○		○ Partly coverable under Advance Loss of Profit Insurance.	Insurance coverage shall be basic protection for delayed damage due to accident or disaster .
	Operation impracticable risks	Cancellation of contract risks	69	Additional cost, liquidated damage and it's guarantee cost against cancellation of contract due to other than Force Majeure.	FL DM			○		○ Coverable under Performance Bon or Performance Guarantee Insurance.	Additional cost due to Force Majeure shall be in accordance with foregoing [Force Majeure Risks] but liquidated damage shall be covered under Bond or Insurance.
	Facility damage risks	Risks other than Force Majeure	70	Repair cost of damaged facilities caused by fault in assessment, design, workmanship and manufacturing.	FM DM			○		○ Coverable under EAR (Erection All Risks Insurance)	Insurance coverage shall be basic protection.
	Third party liability risks	Bodily injury , property damage liability risks	71	Third party (bodily injury, property damage) liability during construction works.	FM DM			○		○ Coverable under Third Party Liability Insurance	Insurance coverage shall be basic protection.
			72	Third party liability which should be charged on public sector.	FL DS	○				○ Coverable under Third Party Liability Insurance	Insurance coverage shall be basic protection but public sector shall be responsible for the excess of insurance coverage
	Finance cost / inflation risks	Construction cost overrun risks	73	Increased cost of construction due to rising of interest rate / inflation during construction period.	FH DS			○			
Operation, maintenance stage	Operation delay start up risks	Force Majeure etc risks	74	Additional cost and / or loss due to job delay in start up caused by the reason of the public sector and / or Force Majeure.	FL DS	○				△ Force Majeure is partly covered under the Advance Loss of Profit Insurance.	Job delay in start up caused by Force Majeure should be refered to above"Force Majeure" at whole stage but delayed damage due to accident or disaster (excluding disater caused by War, Civil Comotion, terrorosm Radioactive Contamination shall be covered under insurance. .
		Risks other than Force Majeure	75	Additional cost and / or loss due to job delay in start up caused by the reason other than public sector and / or Force Majeure.	FM DM		○		○		
		Accident / disaster risks	76	Loss of profit of SPC or cost for alternative facility due to job delay in start up caused by accident during construction period.	FL DL		○		○	○ Coverable under Advance Loss of Profit Insurance.	Insurance coverage shall be basic protection. Consequential loss of SPC shall be owe to SPC (Subject to liquidated damages). Additional cost of O&M shall be owe to O&M contractor.

Operation, maintenance stage	Business interruption(decrease of income) risks	Force Majeure etc risks	77	Loss of profit of SPC due to cessation of job caused by reason of public sectors and / or Force Majeure.	FL DS	○					Additional cost due to Force Majeure shall be in accordance with foregoing [Force Majeure Risks]
		Risks other than Force Majeure	78	Loss of profit of SPC due to cessation of job caused by reason other than public sectors and / or Force Majeure.	FM DM		○		○	○ Coverable under Business Interruption Insurance	Consequential loss of SPC shall be owe to SPC (Subject to liquidated damages). Additional cost of O&M shall be owe to O&M contractor.
		Accident / disaster risks	79	Loss of profit and incresed cost due to accident / disaster during operation period (example : In case impossible to keep environmental standard because of change of Final Disposal site+leachate treatment system due to facility damage of Intermediate Treatment Facility⇒Additional cost due to above case shall be incurred for the treatment at other FDS.)	FM DM		○		○	○ Coverable under DSU (Delay In Start Up)	Insurance coverage shall be basic protection. Consequential loss of SPC shall be owe to SPC (Subject to liquidated damages). Additional cost of O&M shall be owe to O&M contractor.
	Operation implacatible risks	Cancellation of contract due to Force Majeure risks	80	Additional cost, liquidated damage and it's guarantee cost against cancellation of contract due to Force Majeure.	FL DS	○					Additional cost due to Force Majeure shall be in accordance with foregoing [Force Majeure Risks]
		Cancellation of contract due to other than Force Majeure risks	81	Additional cost, liquidated damage and it's guarantee cost against cancellation of contract due to other than Force Majeure.	FL DM		○		○		Consequential loss of SPC shall be owe to SPC (Subject to liquidated damages). Additional cost of O&M shall be owe to O&M contractor.
	Supply risks	Waste supply risks	82	Additional cost and / or loss of profit of SPC due to decrease or increase of treatment demand of organic waste, level down and / or change of waste quality.	FH DS	○					Should be described in the contract regarding the non-acceptance for waste supply in excess of disposal capacity (depend on every fiscal year)
			83	Additional cost due to carry-in of industrial waste or hazardous materials (hospital waste, etc.).	FH DS	○					
		Plant renewal / repair risks	84	Additional cost for change / repair of facilities, loss of profit of SPC due to cessation of job caused by decrease of treatment demand of organic waste, level down and / or level up of waste quality.	FH DS	○					Should be described in the contract regarding the non-acceptance for waste supply in excess of disposal capacity (depend on every fiscal year)
	Supply risks	Accident / disaster risks	85	Bodily injury of employee, repair cost of damaged facilities, loss of profit of SPC due to cessation of job caused by decrease of treatment demand of organic waste, level down and / or change of waste quality or carry-in industrial waste or hazrdous materials (hospital waste etc).	FH DM	○	○		○	○ Coverable under Property All Risks Insurance, Business Interruption Insurance, Third Party Liability Insurance, Workers' Compensation Insurance etc.	Insurance coverage shall be basic protection.
	Requirement incompletion risks	Decrease of faculty of facility (rectification) risks	86	Additional cost for rectification of faulty part and inadequate part (shortage of faculty under requirement).	FL DS			○			
		Service level down risks	87	Additional cost for maintenance, operation caused by shortage of faculty under requirement.	FL DS				○		
	Innovative technology risks	Facility decrepitude risks	88	Rectification cost of facilities ordered and / or requested by the government.	FL DS	○					Grade up cost against decrepitated facilities etc.
	Facility damage risks	Risks other than Force Majeure	89	Repair cost of damaged facilities caused by fault of facilities, mis maintenance and / or mis operation.	FL DL		○	○	○	○ Coverable under Property All Risks Insurance	Insurance coverage shall be basic protection. (Public sector shall provide insurance in case of "BTO")
		Business interruption due to risks other than Force Majeure	90	Loss of profit of SPC due to cessation of job caused by the damages of facilities. Loss of profit due to operation change caused by the damage of facilities (example: In case impossible to observe environmental standard because of change of Final Disposal site+leachate treatment system due to facility damage of Intermediate Treatment Facility⇒It shall be necessary to stop carry-in at the gate.)	FL DM		○	○	○	○ Coverable under Business Interruption Insurance	Insurance coverage shall be basic protection but fault in facility caused by faulty construction shall be covered under Product Liability Insurance provided by EPC.
		Default (cancellation of contract) risks other than Force Majeure	91	Additional cost (liquidated damage, cost of cancellation procedure) due to business default (cancellation of contract) caused due to facility damage.	FL DS		○		○		Consequential loss of SPC shall be owe to SPC (Subject to liquidated damages). Additional cost of O&M shall be owe to O&M contractor.
	Third party liability risks	Bodily injury , property damage liability risks	92	Third party liability (bodily injury, property damage) caused due to ownership, maintenance, operation of facilities.	FM DM		○		○	○ Coverable under Third Party Liability Insurance	Insurance coverage shall be basic protection.
	Large scaled repair works risks	Large scaled repair cost increase risks	93	Unexpected increased cost of large scaled repair works (excluding inflation and interest rate trend).	FL DM		○				Excluding additional cost due to order and / or request by the government, Force Majeure.

Operation, maintenance stage	Large scaled repair works risks	Business interruption risks due to large scaled repair works	94	Loss of profit due to business interruption caused by cessation of job during large scaled repair works.	FL DM		○				
	Economical risks	Interest rate trend risks	95	Increased cost of maintenance, operation due to interest rate trend.	FM DS		○		○		Material Increased cost shall be subject to re-evaluation of service fee based on the public index data.
		Inflation risks	96	Increased cost of maintenance, operation due to inflation..	FH DS	○	△		△		Evaluation of service fee shall be re-calculated based on public index in case of huge increased cost.(including loss of profit due to the discrepancy between index subject item and cost calculation item)
		Change / cancellation of loan agreement risks	97	Additional cost (liquidated damage etc.) for change / cancellation of loan agreement due to other than Force Majeure.	FL DM		○		○		
	Market risks	Recycle market risks	98	Loss of profit due to downturn/incapability of sales and amount of throughput, price down, change of shipping type of packing of recycle goods (plastic, metal regardless of quality) and additional cost due to over capacity of final disposal facility.	FM DS	○					Sales profit of recycle goods shall be belonged under the public sector.
			99	Additional cost due to capacity shortage of final disposal facility caused due to downturn/incapability of amount of acceptance including non-attainment for acceptance condition (quality) of RDF or additional cost for necessary quality improvement.	FL DM	○					
			100	Loss of profit or additional cost due to defective quality of compost	FL DM	○					SPC has ageed with West Java Provincial Government that they deliver compost which has been matured for 20 days and they are no more responsible for the quality.
	Environment maintain risks	Environmental management risks	101	Cost of environmental management , additional cost or loss due to fault in management.	FM DS		○		○		
Job termination stage	Job termination risks	Large scaled repair works risks (rectification of faulty part)	102	The cost of rectification / rehabilitation of the facilities at the time of transfer of the ownership.	FH DM		○	△			
		Cost of formalities risks	103	Cost of contract termination formalities and liquidated cost of SPC at the time of termination.	FH DS		○		○		
		Delay of formalities risks	104	Additional cost due to delay of formalities caused by the reason of public sector and / or Force Majeure.	FL DS	○					Additional cost due to Force Majeure shall be in accordance with foregoing [Force Majeure Risks]
			105	Additional cost due to delay of formalities caused by reason other than the public sector and / or Force Majeure.	FL DS		○		○		
	Demolition & removal of facility risks	Cost of demolition /land clearance risks	106	Additional cost of demolishing / removal of facilities and cost of clearance of the land and leachate treatment cost at the time of termination of operation period.	FH DM	○					Including leachate treatment obligation and it's cost suffring during 10 years after taking over.

Table 10-3 Assessment of Critical Risks, Response and the Risk Bearers in Execution of the Project

Categor	#	Details	Assessment	Suggested Responses and Risk Bearers
Political and social risks	1	Law, Tax regulation revisions, amendments, adoption, or repeal Regulation for drainage etc.)	Revision or adoption of law (change of the regulation for drainage etc.) , tax regulation that has any material impact on the stable performance of the project may require dramatic changes of the contents of an institution, and financial structure of the project, and the scope of possible responses by private businesses is limited.	It is important to divide this risk into the risks such as amendment of law, tax regulation / tightening regulation to submerged drainage within the scope of responses by businesses execution, and other critical risks which may interrupt to operate business ,and then to allocate the risks reasonably with the prefectural government and the parties. About the latter, correspondence by the government guarantee (statute change risk) by IIGF is basically required.
	2	Inability to obtain or delay in obtaining permits and approvals	The inability to obtain or delay in obtaining the various permits and approvals necessary for execution of the project can result in suspension or major delays of the project and have a major impact on parties' cash flows.	While defining the clear division of roles between a state government and the parties, based on the sense of responsible persons' burden is applied to the loss derived by the non-ability of approval acquisition, or delay, and it is considered as a rational risk assignment.
	3	Change of governor of the state, non-approval by the legislature (long term Incurrence-of-obligations act)	A change of governor of the state or a decision to not grant approval by the legislature during the course of execution of the project could result in delay, suspension, or termination of the project, giving rise to additional costs for payment of various penalties in conjunction with suspension or termination by the parties, which would be a major problem for companies investing in and financing the project. Especially the rejection by the Parliament of a funded debt burden act can serve as big trouble to business execution from a financial viewpoint.	Except when caused by the parties, a change of governor of the state or a decision to not grant approval by the legislature during the course of execution of the project is beyond the control of the parties, and generally the provincial government should bear this risk.
	4	Delay of payment for service fee, financial collapse by the provincial government	Delay of payment for service fee from the provincial government and financial collapse by the provincial government would mean suspension of revenues by the parties, requiring the parties to default. The defaults by the parties would mean significant losses by investors and financiers, making this one of the most significant risks concerning execution of this project.	The project is premised on support from the Indonesian government through an Infrastructure Guarantee Fund (investigation is needed), but support measures for the parties from the Japanese government through trade insurance provided by NEXI and others are also needed.
	5	Opposition campaign by residents	Campaigns in opposition to the execution of the project, opposition campaigns resulting from lack of safety measures in conjunction with the project, and so on are possible. Also, campaigns by residents may make it impossible to accept waste, delay operations, or cause suspensions of operations, resulting in indirect losses to the	In principle, the provincial government will be responsible for losses and paid the costs due to cessation and / or delay of operation responding to campaigns opposing the project as a part of Force Majeure. But the parties will be responsible for property damages, liability and/or indirect loss or damages due to loss of use of the facilities which is caused by taking inadequate or fault in safety

Categor	#	Details	Assessment	Suggested Responses and Risk Bearers
			parties and damage to the facilities, and the risk of paying compensation to residents must be considered.	measures in conjunction with Project execution, and shall manage these risks under property All risks Ins. CGL (Comprehensive General Liability) Ins. And Business Interruption Ins..
	6	Inability to acquire or delay in acquiring the land	So the lot acquisition concerning a landfill disposal place, a cover soil place, etc. is made by the state government, that the inability to acquire or delay in inquiring the land would mean a delay or suspension of the project and would have a major impact on the parties' cash flows.	Except when caused by the parties, it is fundamentally necessary for the provincial government to bear the risk concerning acquisition of the site (this is one of the fundamental conditions of the PPP). Also, the provincial government should fundamentally pay for any additional expenses arising in conjunction with defects to the site.
	7	Delay in or failure to develop related infrastructure	Delay in developing or failure to develop infrastructure including access road, submerged drainage piping, electric, communications, water and delay due to accident / loss of use of the facilities may cause delay or suspension of the project, giving rise to additional costs that would be difficult for private companies to pay	The provincial government will bear the responsibility and additional expenses associated with development of infrastructure of which beyond control of the parties, and it is anticipated that the responsibility and cost exceed the permissible scope for the parties. It is very important for the provincial government and P.T. Indocement to make a clear agreement regarding the construction of access road in Nambo. About the entrepreneur loss by which it is accompanied interruption of operation resulting from the accident and disaster of the existing infrastructure, the cover under the Business Interruption Insurance (off site risk coverage conditions) which an entrepreneur effects is possible.
	8	Environmental preservation measures	Adequate proposals must be adopted and cost calculations must reflect as important expenses costs and additional costs relating to environmental preservation measures that should be taken into consideration in advance in conjunction with execution of the project including, changes in or contamination of underground water due to submerged drainage from final disposal site, and changes in the underground water level as well as environmental preservation measures arising during project execution. Also, decontamination expenses or compensation expenses in conjunction with a sudden environmental pollution accident resulting from project execution would have a material impact.	It should be considered fundamentally that the burden of the additional charge concerning the environmental destruction "resulting from a natural disaster and inevitability, and "environmental destruction resulting from the flaw of the assessment which the state government performed in advance" is to be the burden of the state government. About the environmental destruction which cannot specify a cause, it supposes that a risk is fundamentally shared with a state government and the parties, and suppose that the burden place is decided by deliberations. There for on the other hand, the parties will bear environmental countermeasure expenses, and it is necessary to estimate costs. It is made to a rule of burden of the parties about the environmental destruction which can specify a cause. So it is necessary to cover decontamination costs arising from sudden and accidental environmental contamination due to bad workmanship , defect in facilities, which is arisen as the liability to third parties (including public & private sector) under insurances ("CGL (Comprehensive General Liability Insurance)"or "Owners', Landlords' Liability Insurance" to the greatest extent

Categor	#	Details	Assessment	Suggested Responses and Risk Bearers
				possible. On the other hand about the environmental destruction liability accompanying sinking water etc. which flowed out with the usual operation (waste treatment works) over a long period of time (for tens of years after several), is very difficult to cover under insurances as after-mentioned ("S. the 10-2-5 table 2-6"), and it is necessary to provide following alternative methods (clarification of whereabouts of responsibility and a burden person) other than insurance in advance. i) Loss or damage resulting from flaw of liner sheet shall be the sheet maker's burden (however, the legal compensatory damage accompanying a maker's default on an obligation etc., a cover is possible under the maker's Products and Completed Operation liability Insurance). ii) Loss or damage resulting from the fault on an institution design shall be the designer's burden (however, the legal compensatory damage accompanying a designer's default on an obligation, etc., a cover is possible under the designer's Professionals Liability Insurance). iii) Loss or damage resulting from the fault in construction shall be the contractor's burden (however, the legal compensatory damage accompanying a contractor's default on an obligation, etc., a cover is possible under the contractor's Products and Completed Operation Liability Insurance).
Economic and market risks	9	Inflation	Sudden increases in the project expenses as a result of increases in electricity, fuel or other costs or higher labor costs could have a material adverse impact on the parties' cash flows.	Extreme increase of price during operational period will beyond the control of the parties, and it is necessary to include provisions for reviewing service fees according to clear and concrete calculation standards (e.g. Price Index) pursuant to a prior agreement of the services contract with the provincial government. It is crucial that service fees be changed in response to increases on prices that could have a material impact on the parties' business continuation.
	10	Inability to secure financing	By changes in the economy or markets, it could be significantly hinder the procurement of funds from investors or financers.	It is necessary to reflect the intentions and/or advises of investors and financers during the planning stages and to introduce highly qualified monitoring system in which investors and financers participate during the project operation stage.
	11	Changes in currency exchange rates	If financing is secured in foreign currency (yen, dollars, etc.) and services are paid in local currency (rupee), significant exchange losses are possible.	Funds will be raised and serviced paid for in the same currency to avoid exchange rate risks.
	12	Changes in financial	Also, changes in the rate of interest on the procured funds over 10 to 12 years could have a material	The interest rate on procured funds will be fixed and the risk to the parties will be minimized.

Categor	#	Details	Assessment	Suggested Responses and Risk Bearers
			impact on the parties' cash flows.	
	13	Changes in recycling market needs, Inability to supply or sell recycled goods	The state government is to take over for pay (fixed amount) fundamentally about an abandonment plastic among recycled products, and the depreciation of the abandonment plastic accompanying change of subsequent needs may press the finances of the state government off taker of it, and may hold a taking over impossible risk. Provided further that, quantitative change of an abandonment plastic may make it weigh on the party's profit directly. Although the state government will take over the whole quantity about compost, fall of compost processing market needs will cause reduction of income of the state government off taker of this compost, an will derive expense burden required for the expense and alternative processing (reclamation etc.) in which a new acceptance place is looked for, etc. And increase in a large throughput also derive a possibility which also presses the capacity of a final disposal site, and there may be a cleanup cost and a processing impossible risk of the parties in connection with the qualitative alteration (mixing of a toxic substance etc.) of waste.	i) In order that a state government may take over a recycled product at a fixed amount from the parties about an abandonment plastic, while a state government shall bear the risk accompanying the value change accompanying a subsequent sale by giving guarantee on an availability fee basis. , it is also required about the responsibility of the state government who is a beneficiary and an administrator, upon change of the throughput capacity which it cannot finish undertaking by the parties. ii) In order that a state government may take over the whole quantity of compost with free of charges fundamentally, the parties shall not bear the risks on change of the market needs of compost and price fluctuation, but will press the party's cash flow by increase of cleanup cost, or the fall of a profit about qualitative aggravation and quantitative change of the waste carried in, and it should be considered it as reexamination of a service fee.
	14	Changes in the volume and quality of waste	Changes in the initially-expected volume and quality of waste are anticipated in conjunction with economic development in the region, higher standards of living, and improvements in sorting systems, and it is possible that the planned facilities will not be able to process the changed volume or quality making it necessary to install new facilities or modify the existing facilities. In some cases, this could result in substantial cost overruns to the parties and necessitate significant changes in the project plan.	The service fees that the parties will receive will in principle be availability-based base fees, and when carrying in of garbage is less than 1,000 ton/day (or it exceeds), the fixed cost portion (amount of appropriation to initial investment) of courtesy rates is paid, and a variable-cost-and-expenses portion (operational expenses) should be interlocked with the actual amount of garbage, and should be paid. About an actual amount of price, in a bid stage, negotiation is made based on a tenderer's proposal and it determines.
	15	Natural disasters and force majeure such as earthquake, flooding, and landslide	Natural disasters such as earthquake, volcanic eruption, tsunami, torrential rain, flooding, inland flooding, and landslide and manmade force majeure risks resulting from war, insurgency, terrorism, radioactive contamination, or the malicious or destructive conduct of third parties can not only cause fatal destruction	It is necessary that the provincial government or the Indonesian government reasonably allocate risks that cannot be covered by insurance such as war, radioactive contamination risks , but most other natural disaster and force majeure risks can be covered by insurance, and fundamentally the risks will be transferred through parties' insurance (property damages under Property All Risks Ins.,

Categor	#	Details	Assessment	Suggested Responses and Risk Bearers
			of business facilities, they can also cause suspension or termination of business activities depending on the scale of the damage. This is one of the most significant risks of this project.	indirect damages under Business Interruption Ins., liability under CGL Comprehensive General Liability Ins..).
	16	Facility damage and suspension of operation as a result of accident or catastrophe	Damage to facilities as a result of following fire, explosion, electrical or mechanical accident, or other accident or catastrophe (direct damages) other than Force Majeure, during execution of the project or indirect damages to the parties as a result of suspension of the project could cause decisive harm to the parties' cash flows.	It is possible to cover most physical damages, indirect damages, and third-party liability resulting from this type of accident or catastrophe by insurance, and transferring risk through the use of insurance will be the basic policy (property damages under Property All Risks Ins. indirect damage under Business Interruption Ins. and liability under CGL Comprehensive General Liability Ins.).
	17	Liability to pay compensation to third parties	Liability to pay compensation to third parties (visitors, persons passing through, nearby residents, project party officers and employees, etc.) arising from execution of the project could be substantial.	Most liability resulting from sudden accidents and incidents can be basically covered under CGL (Comprehensive General Liability Ins.), and the basic policy will be to transfer this risk through insurance provided that, liability due to environmental destruction is shown in above [8].
	18	Suspension of infrastructure (transport, utilities, etc.)	Suspension of operations because of the inability of transport vehicles to travel to and from the site as a result of natural or man-made accidents (roads, railways, bridges, electric power, communications, water facilities, etc.) would not only result in substantial indirect damages to the parties, it would also give rise to costs for alternative processing.	As shown in above [7], the losses due to inability of operation which is caused by an accident/disaster of infrastructure shall be allocated between the players as a part of Force Majeure, and above losses can be covered under the Business Interruption Insurance (off site risk coverage conditions).
	19	Lack of management and personnel capabilities and skills	A lack of management capabilities on the part of managers and skills on the part of employees could cause significant harm to the project (decline in income, i.e., availability fees).	An execution guarantee system and a project execution assessment system will be introduced by the parties through assessing the content of proposals and adopting comprehensive monitoring systems during the party screening phase. Further that, it is desirable to appoint backup servicers in concerned with sub contractors and/or co-operate contractors in advance.
	20	Financial collapse of trading partners and cooperating companies	Financial collapse of buyers of recycled goods, subcontractors, or cooperating companies could give rise to cost overruns by the parties and cause a deterioration of their income and expenditures.	This is basically a risk that the parties bear. It is desirable to appoint backup servicers in concerned with subcontractors and co-operating contractors to in advance.
	21	Lack of suitable local subcontractors	If there is a lack of suitable local companies with the skills and capacity necessary for execution of the project, it will be necessary for the parties to perform the required work under their own responsibility and at their own cost, and it will be necessary to investigate adequate costs and required implementation schemes.	This is basically a risk that the parties bear, but it is desirable to impose a duty on subcontractors and cooperating companies to select backup servicers in advance, and a scheme with adequate leeway in the costs is necessary.

Category	#	Details	Assessment	Suggested Responses and Risk Bearers
Product and Technology Risks	22	Technological decrepitude, unsuitability of recycling (environmental destruction)	In the event of decrepitude of the technology levels or unsuitability of processing and recycling methods, effective execution of the project cannot be expected, sales and supply of recycled products will not be possible, and serious environmental destruction may occur.	Decrepitude of the technologies initially anticipated will depend on a reasonable allocation of risk between the parties and the provincial government, but in the event of insufficiency or unsuitability of the recycling methods by the parties, the parties will incur additional costs. The risk of sudden environmental destruction is shown in above [8].
	23	Survey or design errors, design changes	Costs to re-perform surveys or designs caused by errors in advance surveys or designs, harm to facilities as a result of negligence, and liability to pay compensation to third parties could have a decisive impact on the parties' management.	This risk is fundamentally borne by the parties except in the case of a defect in the assessments or prior surveys conducted by the provincial government. Also, in case of Design-Built Contract, property damages as a result of negligence of survey and/or design can be covered under Property All Risks Ins., indirect damages borne by the parties can be covered under Business Interruption Ins., and third party liability can be covered under CGL (Comprehensive General Liability) Ins.
	24	Disqualification under requirement levels	Additional expenses necessary to satisfy the requirement levels the parties need to execute the project and reductions in service fees will unavoidably affect the parties' cash flows.	While this risk is fundamentally borne by the parties, it is necessary to clarify the locus of responsibility, and burden of losses under the contract between subcontract contractor and a co-operation contractor, and it is also necessary to raise monitoring accuracy.
	25	Infringement of patent rights	Paying litigation expenses and penalties in conjunction with infringement of patent rights would not only causes losses to the parties, it may also harm the parties' creditworthiness.	While this risk is fundamentally borne by the parties, it is necessary to clarify the locus of responsibility, and burden of losses under the contract between subcontract contractor and a co-operation contractor,

10.1.3 Clarification of the Contract regarding Government Support and Reasonable Allocation of Business Risks between the Public and Private Sectors

The project proposal concerning the Western Java Intermediate Waste Treatment/Final Disposal Site Operation Project assumes a service-purchase type of PFI/PPP, under which the private-sector parties ('parties') design and construct the facilities and perform maintenance, management, and operation, and the provincial government pays service purchase fees for the services provided by the parties. It is necessary, therefore, for the parties to recover all of their reasonable costs from the service purchase fees. To make this work, support and guarantee measures in various areas provided by the provincial government and the Indonesian government are essential.[3]

[3] The current Presidential Regulation of the Republic of Indonesia – No. 13 of 2010, Article 1 stipulates that "Government Support shall be fiscal and non-fiscal contributions provided by the Minister/Institution Head/Regional Head and/or the Minister of Finance in accordance with their respective authorities under the law and regulations…," "a Government Guarantee is a fiscal or non-fiscal contribution granted by the Ministers/Institutional Head/Regional Head and/or the Minister of Finance in accordance with their respective powers under the prevailing laws and regulations…" and "a Governmental Guarantee shall be financial compensation and/or compensation in any other forms provide by the Minister of Finance to the Business Entity through a risk sharing for the Partnership Project scheme." It will be necessary to confirm the specific content of these provisions and the applicability to the proposed project during the implementation phase.

(1) Appropriate and Reasonable Allocation of Risks between the Public and Private Sectors (allocation of risk to the Indonesian Government and the West Java Provincial Government with Respect to the Major Items in the Risk Allocation Chart)

With regard to the risks in Table 10-2 above, it is necessary to examine the content of the necessary allocation of risk between the Indonesian Government and the West Java Provincial Government when allocating the principal risks between the public and private sectors and to make a final confirmation concerning the application to this project.

Table 10-4 Allocation of Risk between the Indonesian Government and the West Java Provincial Government

1	Payment of additional expenses in conjunction with changes to laws, or tax regulations that could have a material impact on project execution	Except in the case of changes to laws or tax regulations within the scope that the parties can respond to, it is essential to clarify that the government bear the risk of additional expenses in the event of material impact on the stable execution of the project. These additional expenses should fundamentally be treated as force majeure, and there should be a reasonable and appropriate allocation of risks between the public and private sectors.
2	Losses by the parties or payment of additional expenses in conjunction with cancellation of business licenses or suspension of delay of the project as a result of change of head of government or non-approval by the legislature	Except in the case of causes attributable to the parties, it is necessary to state clearly in the contract that the government will bear the risk of losses incurred by the parties or additional expenses resulting from change of head of the Indonesian or provincial government or non-approval by the legislature. Requiring the parties to bear these risks will not only diminish the parties' desire to participate in the project, it will interfere with the provision of the anticipated services and ultimately will impose burdens on the Indonesian people.
3	Losses by the parties or payment of additional expenses in conjunction with suspension or termination of the project as a result of opposition campaigns by residents because of environmental or other issues	Except in cases of opposition campaigns by residents caused by the parties such as insufficient consideration concerning execution of the project or technology problems, it is necessary to be clear in the contract that the government bear the risk of losses incurred by the parties or additional expenses in conjunction with suspension or termination of the project as a result of campaigns by residents in opposition to the project.
4	Indemnification of losses incurred by the parties or payment of additional expenses in conjunction with inability to acquire or delay in acquiring the land	Except when caused by the parties, acquisition of the site is a prerequisite for execution of the project, and the government should bear any losses incurred by the parties relating to inability to acquire or delay in acquiring the land.
5	Indemnification of losses incurred by the parties or payment of additional expenses in conjunction with delay in or failure to develop related infrastructure	Development of infrastructure including electric, communications, water, fuel supply lines, access roads, and railways which may cause delay or suspension of the project is beyond the scope of the parties' business, and it is necessary to be clear in the contract that the government should pay for indemnification of losses incurred by the parties and payment of additional expenses caused by delay or suspension of the project as a result of delay in developing this infrastructure.
6	Payment of additional expenses in conjunction with abnormal changes in prices or interest rates beyond expectations	Support from the government is essential for stable continuation of the project in the event of additional expenses beyond the tolerable range that the parties can bear in conjunction with sudden changes in electric fees, water fees, fuel prices, or interest rates. It is also necessary to be clear in the contract that who should take care of those unanticipated increasing cost.

7	Payment of additional expenses in conjunction with sudden changes in the market for recycled products or the inability to sell recycled products	Fundamentally, income and revenues relating to the sale and supply of recycled products are attributed to the government, and it is clear to state clearly in the contract that the government will bear the risks of additional expenses (expenses for alternative processing, development of new markets, etc.) relating to dramatic changes in needs or changes in trading markets.
8	Payment of additional expenses in conjunction with changes in the volume or quality of waste	Changes in the volume and quality of waste in conjunction with economic development in the region, higher standards of living, and changes in sorting systems will require substantial reviews of the business plan. As a result, it is essential to be clear in the contract that risk be allocated reasonably with the government concerning additional expenses in conjunction with changes in the volume or quality of waste beyond the scope of the parties' abilities.
9	Suspension or termination of the project and payment of additional expenses in accordance with natural disaster or force majeure	Natural disasters such as earthquake, volcanic eruption, tsunami, torrential rains, inundation, inland flooding, and landslide and manmade force majeure such as war, civil disorder, terrorism, radioactive contamination, and malicious destructive conduct by third parties could not only cause critical damage to the project facilities, depending on the extent of the damage, it may be necessary to suspend or terminate the project. Of the various losses occurring in conjunction with these natural disasters of events of force majeure, it is essential to be clear in the contract that the government bear risks that exceed the scope that can be covered by insurance at reasonable cost.

10.1.4 Risk Assessment and Selection of Risk Financing (Insurance)

Those risks discussed in the previous section that have a particularly close relationship to the project are identified, and risk processing was investigated by taking the matrix (Table 10-5) of risk significance (frequency of occurrence and damage size) into consideration.

Table 10-5 Risk Matrix (Risk Significance)

		Loss Occurrence Frequency (F)		
		Low (LF)	**Medium (M F)**	**High (HF)**
Damage Size (D)	Small (DS)	FL/DS	FM/DS	FH/DS
	Medium (DS)	FL/DM	FM/DM	FH/DM
	Large (DL)	FL/DL	FM/DL	FH/DL

Notes
1. High 'Loss Occurrence Frequency (F)' means that the risk is expected to occur one or more times in one to several years, whereas medium F means that the risk is expected to occur one or more times in several years to more than 10 years, and low F means that the risk is expected to occur one or more times in more than 10 years to several decades.
2. Small 'Damage Size (D)' means anticipated loss of no more than US$1 million, whereas medium D means anticipated loss of US$1 million to about $10 million, and large D means anticipated loss of US$10 million or more.

The risks that the parties are likely to face are described in Table 10-1 above, but based on the nature of this project, the particularly significant risks that can be covered by risk financing through insurance are set forth in Table 10-6.

Table 10-6 Classification of Measures (Insurance) to Address Major Risks Faced by the Parties

Stage	Risk Type	Risk Matrix	Insurance Type	Main Risks Covered
Design and Construction	Risk that the design and construction winning bidder will avoid entering into a contract	F L D M	Bid bond or bid guarantee insurance	Penalty payment insurance that pays penalties if the winning bidder fails to enter into an agreement (insurance)
	Risk of non-performance by the subcontractor and non-recovery of advance and interim payments	F L D M	Performance bond or performance guarantee insurance, advance and interim payment bond (or guarantee)	Penalty payment insurance that pays if a construction contractor cancels an agreement during the design or construction phases
	Risk of environmental destruction	F L D S	Subcontractor liability insurance or environmental liability insurance	Liability to third parties to pay compensation for damages in the case that environmental destruction is greater than initially anticipated
	Risk of defects in the site, surveys, and measurements	F L D L	Contractor's all risks insurance Subcontractor liability insurance Delayed start of business insurance	Damage to structures under construction, liability to third parties, and damages from delayed completion as a result of defects in the site or errors in groundwork and geological surveys
	Design risks	F L D L	Contractor's all risks insurance Subcontractor liability insurance Delayed start of business insurance	Damage to structures under construction, liability to third parties, and damages from delayed completion as a result of defects or errors in the design
	Risk of inadequate quality or performance	F H D S	Skilled worker liability insurance Defect insurance Product liability insurance	Quality guarantee as to the ordering party Defect repair expenses (excluding expenses for design modifications) Liability to third parties arising from defects
	Risk of natural disaster and other force majeure	F H D L	Trade insurance (force majeure) Contractor's all risks insurance Delayed start of business insurance	Damage to structures under construction damages from delayed completion as a result of project default damages and force majeure
	Risk of other accidents, disasters, and liability to third parties	F M D M	Contractor's all risks insurance Subcontractor liability insurance Delayed start of business insurance	Damage to structures under construction, liability to third parties, and damages from delayed completion
	Risks concerning transport of construction materials and equipment	F M D M	Delayed start of business insurance Marine insurance or transport insurance	Damage to construction materials and equipment Damages from delayed completion
	Risk of inability to deliver the facility or delay of delivery (audit and inspection risks)	F L D S	N/A	-----
	Project default risks (country risks, etc.)	F L D L	Trade insurance (catastrophic risks, credit risks)	Catastrophic risks (war, terrorism, natural disaster) Credit risks (inability to collect rents and remittances)

Stage	Risk Type	Risk Matrix	Insurance Type	Main Risks Covered
Operation, maintenance, and management	Facility deterioration risks	F L D S	N/A	-----
	Natural disaster and other force majeure risks	F H D L	Trade insurance (force majeure) All risks asset insurance Business interruption insurance	Damage to facilities and damages from the inability to use facilities arising from project default damages and force majeure
	Risks concerning facility damage and liability to third parties	F H D M	All risks asset insurance Business interruption insurance Facility liability insurance Automobile liability insurance Workers compensation insurance Life insurance, accident insurance	Damage to facilities and damages from the inability to use facilities Liability to third parties arising from facility defects and maintenance and management errors Damage and traffic accidents Employee injury and death
	Risk of interruption of related infrastructure	F L D S	Business interruption insurance	Damages from the inability to use facilities resulting from damage to infrastructure facilities
	Risk of non-performance of contracts by service providers	F L D S	Performance bond or performance guaranty insurance Bank guarantees	Payment of penalties in conjunction with cancellation of subcontracting agreements during the operation, maintenance, and management
	Risk of accidents during large-scale repair work	F H D M	All risks asset insurance Business interruption insurance Facility liability insurance Erection insurance Subcontractor liability insurance	Damage to facilities and damages from the inability to use facilities Liability to third parties arising from maintenance and management errors
	Project default risks (country risks, etc.)	F L D L	Trade insurance (catastrophic risks, credit risks)	Catastrophic risks (war, terrorism, natural disaster) Credit risks (inability to collect rents and remittances)
	Other miscellaneous risks (theft, bad-faith conduct by employees, abduction)	F L D M	Theft insurance Individual credit insurance Abduction insurance	Theft of cash during storage or transportation, embezzlement of cash or securities by employees, abduction of employees (ransom)

(Comment 1) Risks in the Design and Construction Stages in Table 10-6

(i) Risk of withdrawal of the winning bidders from entering into a contract

Although the order for design and construction work from the parties selected for this project will fundamentally be a negotiated contract, if an EPC contractor is selected through competitive bidding, it is possible that the winning bidder withdraw from entering into a subcontracting agreement for its own reasons. In this case, the party that places the order for design and construction work will need to find a new subcontractor. In some cases, it may be necessary to re-perform the bidding, and in this case, the time, effort, and costs necessary for the required procedures will not only be substantial, the possibility of a difference between the original winning bid amount and the new contract amount cannot be ignored.

(ii) Risk of non-performance by the subcontractor and non-recovery of advance and interim payments

If the EPC contractors go bankrupt during the design and construction phase, the risk that the subcontracting agreements will not be performed during the design and construction phase is not insignificant. In this case, the existing agreements will have to be canceled, and it will be necessary to search for new contractors. As a result, there is a significant risk of cost overruns caused by the various necessary costs and the possibility that the contract amount with the new contractor will be higher than the original one.

In addition, there is a risk that the ordering party will not be able to recover the difference between advances/interim payments previously paid and the actual construction costs, giving rise to losses.

However, if the cause of the contractual default is related to the ordering party, natural disaster, force majeure, or other circumstances not attributable to the subcontractor, it will be necessary to consider alternative measures, and the application of insurance and guarantees will be different.

(iii) Risk of environmental destruction
Destruction of the natural environment caused by the project during the construction phase, which is greater than anticipated based on the initial assessments in terms of noise, vibration, air pollution, changes in or contamination of subterranean water, and so on, could give rise to environmental problems. Such environmental destruction could result in resident protests, lawsuit by residents, and so on, causing significant social losses, and the parties may be called on to compensate for damages.

(iv) Risk of defects in the site, surveys and measurements
The defects in the site or errors in or insufficient groundwork and geological surveys could necessitate revision of project plans, review of designs, and modification of construction methods in the design or subsequent stages, substantially delaying implementation and giving rise to additional costs. The risk of penalties in conjunction with late completion of construction also cannot be ignored.

(v) Design risks
Design errors may necessitate design changes and revision of project plans in the design or subsequent stages, and changes in the construction schedule, additional expenses in conjunction with delays, and redesign of the project schedule would have a substantial impact (indirect losses). The risk of penalties in conjunction with late completion of construction also cannot be ignored.

(vi) Risk of inadequate quality or performance
In the event of defects in the facilities or the failure of structural materials and equipment to meet initial quality and performance specifications or standards, repair work will be necessary, delaying the supply time and giving rise to the risk of additional construction expenses, indirect losses, payment of penalties, and compensation to third parties. If the risk of inadequate quality performance is overlooked, it could lead directly to a major incident (physical damage, indirect losses, liability to pay compensation, etc.) during the in-service stage.

(vii) Risk of natural disaster and other force majeure
Force majeure is a risk that arises from natural and man-made causes, and earthquakes, typhoons, flooding, lightning strikes, terrorism, malicious and destructive conduct by third parties, arson, falling objects such as aircraft, traffic accidents, and all other risks not attributable to the parties can give rise to cost overruns. The risks (losses are equivalent to cost overruns) set forth in (a) to (g) below are the major risks.
(a) Additional expenses in conjunction with design reviews, delays, construction delays, and delayed completion.
(b) Additional expenses arising from the investigation of the causes of accidents and disasters, investigating the extent of damage, and investigating restoration methods.
(c) Additional expenses arising from costs to prevent damage, damage mitigation costs, and emergency response measure costs.
(d) Repair expenses for damaged facilities, removal of soil, dismantling and removal of debris, and cleaning expenses.
(e) Indirect expenses in conjunction with delayed construction or delayed completion (delivery), business continuity expenses, expenses for review of contracts, penalties.
(f) Reduced income from the inability to use the facilities.
(g) Additional expenses to restore damage including temporary construction, temporary structures, and construction equipment.

(viii) Risk of other accidents, disasters, and liability to third parties
Accidents occurring during the construction phase that cause physical damage to the structures under construction, temporary construction, temporary structures, construction equipment, motor vehicles, and so on and accidents giving rise to liability to third parties including existing site structures, residents, passers through, nearby residents, and so on could cause changes in the construction period (construction delays), additional construction expenses, payment of compensation, and payment of the penalties in conjunction with contract revisions and cancellations. As discussed above with respect to accidents and disasters, the responsive measures and the allocation of losses among the parties are clearly different between losses resulting from natural disaster or force majeure and those resulting from the negligence of the contractors, but in any case, the main measure is risk hedging through the use of insurance.

(ix) Risks concerning transport of construction materials and equipment
There is a risk that construction materials and equipment (including incidental construction equipment) necessary for construction will not arrive or will be delayed because of accidents during marine or air transport. Such an accident could result in suspension of construction and give rise to in direct losses and penalties in conjunction with the late completion.

(x) Risk of inability to deliver the facility or delay in delivery (audit and inspection risks)
This is the risk that audits and inspections will overlook the failure of the facilities to satisfy certain specifications and standards at the time of completion and delivery of the facilities. This could result in delay or decrease in the facility rental income, the occurrence of accidents or problems during later project phases, the inability to use the facilities, or incidents giving rise to liability. In addition, some defects could result in further deterioration of structures, causing major accidents. In this case, the occurrence of indirect expenses and disruption of the project schedule would have material adverse effects.

(xi) Project default risks (country risks, etc.)
Project default risks are country risks that pose extreme risks not attributable to the parties such as force majeure and include inability to develop the facilities due to the change in the regime of the Indonesian, West Java province government, a party to the project, changes in tax or legal systems, war, revolution, terrorism, and natural disaster. In any case, the importance of default scenarios by the parties during the design and construction stages, as well as the risk hedging through insurance, cannot be overstated.

(Comment 2) Risks in the Operation, Maintenance, and Management Stages in Table 10-6

(i) Facility deterioration risks
This is the risk that deterioration of the structural facilities will occur more quickly than initially anticipated as a result of noncompliance with the facility performance standards or changes in use conditions (higher use frequency, increased load, changes in application, etc.). This would result in not only higher ordinary repair costs, but would also accelerate the timing of large-scale repairs and necessitate increased repairs, giving rise to higher costs.

(ii) Natural disaster and other force majeure risks
As the design and construction phase risks described above, force majeure risks arise from natural and man-made causes, and earthquakes, typhoons, flooding, lightning strikes, terrorism, destructive conduct, arson, falling objects such as aircraft, traffic accidents, and all other risks not attributable to the parties can give rise to cost overruns. The risks (losses or cost overruns) set forth in (a) to (e) below are the major risks.
(a) Additional expenses in conjunction with facility reviews and modifications.
(b) Additional expenses arising from the investigation of the causes of accidents and disasters, investigating the extent of damage, and investigating restoration methods.
(c) Additional expenses arising from costs to prevent damage, damage mitigation costs, and emergency response measure costs.
(d) Repair expenses for damaged facilities, dismantling and removal of debris, and cleaning expenses.
(e) Indirect expenses in conjunction with the termination of usage, business continuity expenses, expenses for review of contracts, penalties.

(iii) Risks concerning facility damage, liability to third parties, and injury or death of employees
Negligence or defects in the performance of operation, maintenance, and management and defects or problems in facility structures could not only give rise to physical damage to the facilities, but also poses the risk of accidents giving rise to liability to residents, visitors, and passersby. As a result, damage to facilities could render them unusable, resulting in lower income for the parties and the possibility of massive liability to pay compensation for damages. In addition, the risks of injury or death of an employee in the performance of their day-to-day duties cannot be ignored.

(iv) Risk of interruption of related infrastructure
Accidents or disasters concerning the anticipated nearby infrastructure (roads, utilities, etc.) could render the facilities unusable or shut down the access to the facilities, resulting in lower revenues from the facilities causing pressure on the parties' income structures (or cash flows).

(v) Risk of non-performance of contracts by service providers
If the parties outsource some or all of the facility operation, maintenance, or management to outside specialists and the contracting parties to those outsourcing agreements go bankrupt during the operation, maintenance, and management phase, the risk that the service agreements will not be performed during

that phase is not insignificant. In this case, the existing agreements will have to be canceled, and it will be necessary to search for new operation, maintenance, and management service providers. As a result, there is a significant risk of cost overruns caused by the various necessary costs and the possibility that the contract amounts with the new service providers will be higher than the original ones.

For the non-performance resulting from the outsourcing party, natural disaster, force majeure, or other circumstances not attributable to the service provider, the responses will be different from the prior case.

(vi) Risk of accidents during large-scale repair work

During the operation, maintenance, and management phase, as long as 15 years or more, not only small-scale but also large-scale periodic repair works will be essential, and the risk of an accident during such large-scale repairs is substantial. However, normal operation is usually possible for the facilities other than those under repair, and the cases in which accidents or disasters cause major human injury or give rise to significant liability are not uncommon.

(vii) Project default risks (country risks, credit risks, etc.)

As discussed above, it is also necessary to consider party default risks such as force majeure and other catastrophic risks not attributable to the parties and credit risks arising from the inability or refusal to pay fees by the Indonesian Government. Also, the catastrophic risks mentioned above include country risks such as confiscation of foreign investments because of change of regime in the Indonesian Government, changes in tax and legal systems, war, revolution, terrorism, and natural disaster. In any case, the importance of default scenarios by the parties and risk hedging through insurance cannot be overstated.

(viii) Other miscellaneous risks (theft, bad-faith conduct by employees, abduction)

It is also necessary to consider risks such as theft during storage and transport of cash when large amounts of cash and securities are handled in the parties' day-to-day operations and embezzlement of cash and securities as a result of bad-faith conduct by employees. It is also necessary to consider the possibility of abduction of employees. Abduction may result in demands for payment of exorbitant ransom.

10.1.5 Types and Descriptions of Insurance that the SPC (PPP Contractor) Should Obtain for This Project (Including Compulsory Insurance)

It is necessary to investigate the insurance that the parties should obtain through the process described in (1) through (4) below. For further details, see Table 10-8.

(1) Types and Conditions of Insurance Required by Law (Compulsory Insurance)

Compulsory insurance in Indonesia is as follows.

Automobile liability insurance (PL-22-32016 Mandatory Automobile Liability Law, Chapter 19: Mandatory Insurance July 12, 1991)

Worker's Compensation Insurance (Worker's Compensation Law, effective September 15, 1953)

(2) Types and Conditions of Insurance Required under the Agreements with the Indonesian Government and the West Java Provincial Government

The types of insurance that are likely to be required under the agreement with the Indonesian government, West Java provincial government are as follows.

Builder's Risk Insurance

- All risks terms (typhoons, earthquakes, flooding, terrorism, fire, explosion, and other)
- The coverage amount is the replacement cost.
- The insured parties are the Indonesian government (West Java provincial government) and the pledgee (or mortgagee)

Commercial General Liability Insurance

- A coverage amount of US$20 million or more per incident is expected.
- The insured parties are the Indonesian government (West Java provincial government) and the pledgee (or mortgagee)
- Crossover liability coverage
- Product & completed operation coverage
- Contractual liability coverage
- Environmental liability coverage

Employer's Liability Insurance

A coverage amount of about US$1 million is expected.

Property All Risks Insurance (typhoons, earthquakes, floods, terrorism, fire, explosion, and others)

- The coverage amount is the new replacement cost.
- The insured parties are the Indonesian government, West Java provincial government and the pledgee (or mortgagee)
- Boiler risk coverage
- Electrical and mechanical accident coverage

If competitive bidding is conducted, it is desirable that the following bonds (guarantees) be required, but in the case where previously assembled parties enter into negotiated agreements or special appointments for design and construction, the following bonds generally are not required, as there is a contradiction with requiring bonds from members of the same group.
In addition, when operation, maintenance, and management contractors are selected by competitive bid, the following insurance and conditions should also be considered.

Bid Bonds

- The guaranty amount is the amount of the contract.
- The party receiving the guaranteed money is the SPC (Principal).

Performance Bonds

- The guaranty amount is the amount of the contract.
- The party receiving the guaranteed money is the SPC(Principal).

Payment bonds

- The guaranty amount is the amount of advances and interim payments minus completed amount.
- The party receiving the guaranteed money is the SPC (Principal).

(3) Types and Conditions of Insurance Required under the Agreements with Investors and Financial Institutions

The types and conditions of insurance that are likely to be required other than those described in (1) and (2) above are as follows.

Trade insurance

- Catastrophic risks (including force majeure and country risks)
- Credit risk coverage (inability to collect fees, etc.)
- The coverage amount is the investment or financing amount.
- Marine Cargo Insurance
- All Risks (including war risks)

- The coverage amount is the new procurement price × 110% or more.
- Marine, air, and overland transport coverage and inland transport risk coverage

Machinery Breakdown Insurance

- Construction machinery and temporary plant coverage
- Electrical and mechanical accident coverage

Separate insurance coverage such as disaster insurance or comprehensive movables insurance is necessary for external accidents such as fire, explosion, wind, water or fire damage, earthquake, theft, and so on.

Delay in Start Up Insurance

- The coverage amount is annual fixed costs including debt service costs
- The external infrastructure risk coverage

Business Interruption Insurance

- The coverage amount is annual fixed costs including debt service costs
- The external infrastructure risk coverage

(4) Types and Conditions of Insurance that the SPC should Consider to Manage Their Own Risks (Self-Defense)

Mortor Insurance (Voluntary)
Liability insurance and motor insurance beyond the compulsory liability insurance required by law.

Machinery Breakdown Insurance (Work Machinery)
Work machinery and facility coverage and electrical and mechanical accident coverage
Separate insurance coverage such as disaster insurance or comprehensive movables insurance is necessary for external accidents such as fire, explosion, wind, water or fire damage, earthquake, theft, and so on.

Officers Liability Insurance
Coverage of liability for negligence by officers in performing their managerial duties such as shareholders derivative litigation.

Officer and Employee Injury Insurance and Life Insurance
Officer injury insurance or general employee insurance in addition to workman's compensation insurance to cover risks not covered by workmen's compensation and employer's liability insurance.

10.2 Insurance Legal System in Indonesia

Here, insurance supervision and insurance law/regulation in Indonesia are summarized

10.2.1 Outline of Indonesian Legal System

Basis of Legal System

Indonesia's legal system is a mixture of indigenous law (which is unwritten), sharia law and Dutch law based on the Dutch civil and commercial code.

Court System

The court system consists of three tiers: the district courts (as courts of first instance), the high court (as court of appeal) and the Supreme Court. Cases are presided over by a panel of three judges, who review and decide all questions of fact and law. There is no jury system and no discovery procedure: verbal arguments rarely take place and disputing parties are expected to produce their own evidence.

Legal Environment

Third party motor accidents rarely proceed to court. The injured party is unlikely to be able to afford to pay the legal costs and both the injured party and the insurer are usually happy to settle out of court. It is rare for death or permanent disability claims to exceed the local equivalent of US$5,000 and many are settled for considerably less. Injury claims are usually confined to the reimbursement of medical expenses incurred.

Alternative Dispute Resolution

The Indonesian Insurance Mediation Body (Badan Mediari Asuransi Indonesia – BMAI) has been set up by life and general insurance companies, bypassing the country's judicial system and giving customers and an alternative recourse for setting insurance disputes.
A monitoring body in the form of the Supervisory Board of the Arbitration Body (BPBMAI) has also been established, headed by five association officials and four academics.
The Federation of Indonesian Insurance Associations operates a complaints division, which handles small complaints relating to both life and non-life policies.

10.2.2 Insurance Act in Indonesia

The Law of the Republic of Indonesia Act 1992 is the benchmark legislation for all life and non-life insurance activities which is only general terms. Government Regulation and Decree of MOF have specific details about insurance regulation.

Also, under the terms of Government Regulation No.39/2008, all companies shall appoint an independent commissioner whose main interest shall be to protect the interests of the policyholder. The independent commissioner shall not be an affiliate of the shareholders, board, directors or other commissioners: he or she must be the independent commissioner of not more than two insurance companies.

Decree Nos 481/KMK017/1999 and 303/KMK017/2000 and Decision No 5314/LK/1999 introduced:

- Solvency control through the introduction of risk based capital
- Increased capitalization requirements for new companies
- Admitted assets and investment regulations
- Liabilities and technical reserves rules
- Matching of assets and liabilities
- Statutory deposits

Decrees 421to 426 were introduced in 2003 covering issues such as:

- The licensing of insurance agents and the need for them to meet minimum professional standards through qualification
- Criteria for fit and proper persons
- Compulsory domestic reinsurance treaties and business conduct in general

- Financial soundness of insurance and reinsurance companies
- Audit of insurance companies by the insurance department
- Licensing of insurance and reinsurance companies
- Bancassurance
- Law No 33/1964 and 34/1964 on the Mandatory Insurance Fund for Passenger Accidents created a fund in respect of accidents occurring to passengers on any form of public transport (by road, rail, water or air) from departure to arrival.

10.2.3 Insurance Supervisory Authority

Insurance supervisory authority in Indonesia is the Ministry of Finance / Departmen Keuangan). Under the president decree issued on August, 1969, Departmen Keuangan supervise and check insurance companies in Indonesia, (supervise business license, operation, capital of insurance companies). There is no licensing system for insurance rate, however, insurance companies need to obtain a permission from Department Keuangan in order to sell new insurance products.

The actual insurance supervisory authority, responsible for all Indonesian insurance activity – life and non-life insurance, is the Insurance Bureau of the Capital Markets and Financial Institutions Supervisory Agency (Badan Pengawas Pasar Modal – BAPEPAM).

On the contrary, in December 2010 Parliament approved the establishment of this new supervisory body (to be known as OJK) for insurance, banking and other financial services. The legislators agreed that a board of commissioners for the new body would be vested with full powers by 1 January 2013. The OJK will take over the supervisory function over banks from Bank Indonesia and will also take over all of the current functions of BAPEPAM.
In addition of governmental supervision, as a private sector, (a) Insurance Association of Indonesia (Dewan Asuransi Indonesia) which consists of insurance companies and (b) Non-Life Insurance Association (Assosiasi Asuransi Umum Indonesia) supervise voluntarily activities of insurance companies. The Federation of Indonesian Insurance Associations represents the interests of life insurance and non-life insurance companies. It also acts in partnership with BAPEPAM in its day-to-day supervision of the insurance market.

Note) Name and function of insurance association are as follows.Insurance companies are members of one or more the relevant associations, each of which is a member of the federation.

- Indonesia Life Insurance Association – Asosiasi Asuransi Jiwa Indonesia（AAJI）
- General Insurance Association of Indonesia – Asosiasi Asuransi Umum Indonesia (AAUI)
- Social Security Insurance Association of Indonesia – Asosiasi Asuransi Jaminan Social Indonesia (AAJSI)
- Insurance and Reinsurance Broker Association of Indonesia – Asosiasi Broker Asuransi & Reasuransi Indonesia (ABAI)
- Association of Indonesian Insurance Loss Assessars – Asosiasi Penilai Kerugian Asuransi Indonesia (APKAI)
- Islamic Insurance Association of Indonesia – Asosiasi Asuransi Syariah Indoneisa (AASI)

10.2.4 Legislation to Non-Admitted Insurance Company

"Government Regulation of the Republic Indonesia No.73.of 1992" stipulating[4] that it is a legal requirement that insurance risks situated in Indonesia be place with a company licensed to do business in Indonesia contains no exceptions. Therefore, non-admitted insurance (unlicensed, non-resident insurers) is not permitted in Indonesia in principle.

However, non-admitted insurance is permitted under certain circumstances.

a. No Insurance company in Indonesia, either individually or as a group, shall have the capacity to cover the risks of the insurance objects

[4] Insurance objects in Indonesia shall only be covered by Insurance Company which obtained Business License from Minister.

b. No Insurance company shall be willing to cover the insurance objects
c. The owner of the insurance object concerned is not Indonesian or Indonesia legal entity.

(Remark 1) BAPEPAM does not enforce this regulation in relation to marine cargo import insurance or to personal insurances purchased via the internet.

(Remark 2) Penalties apply to broker and insurance carrier. Operating licenses of both Broker and Insurer can be suspended or withdrawn in the event of breach. On the other hand, no penalties apply to the insured.

(Remark 3) Local risk definition: A local risk is defined by BAPEPAM as a risk situated in Indonesia and owned by an Indonesian national or entity, relating to property, liability or money.

(Remark 4) If "a" & "b" exceptional conditions above are met, a buy must show proof that he or she has approached the market exhaustively and apply for dispensation in writing from BAPEPAM in order to be granted permission to arrange insurance outside the country.
Unless special dispensation is granted by BAPEPAM for a buyer to insure direct overseas, premiums cannot be deducted by a company as a business expense in relation to profits tax.
A buyer may also be exposed to taxation on any compensation paid by an overseas insurer which is treated as unearned income. There are various potential taxation penalties imposed upon buyers who purchase unauthorized non-admitted insurance.

Intermediaries (i.e. brokers or agents) have to be authorized to do insurance business. Unregistered brokers are not allowed to canvass for business in Indonesia.
Intermediaries are not allowed to place business with non-admitted insurers without special dispensation granted by BAPEPAM. They are not allowed to canvass for and on behalf of unlicensed overseas insures. Brokers are required to inform clients of the legal situation in respect of non-admitted insurance, and to acquaint them with the penalties involved for non-compliance.

10.2.5 Regulation of Reinsurance / Cede to Overseas

There are several detailed regulations about reinsurance/cede to overseas, however, it is possible to place reinsurance/cede to overseas if minimum retention by ceding insurer/minimum ceding amount (or minimum ceding ratio) to domestic insurance company meet the requirements.

There is Badan Pusat Pengala Data Asuransi Nasional (BPPDAN) which is national reinsurance company in Indonesia. Ceding company has obligation to cede to BPPDAN as facultative reinsurance.

Compulsory ceding obligation: Ceding insurer has to cede BPPDAN a certain portion of Fire, Business Interruption, IAR (Property All Risks). Obligatory cession of 2.5% of every property risk insured by ceding company with maximum US$0.5 mil. In addition, the pool system of earthquake insurance was established in January 2003. Every direct insurer must cede and has rate obedience.

Regarding to ceding on Treaty Reinsurance based on contract with Reinsurance Company, ceding insurer must cede to at least one domestic reinsurance company. However, there is no requirement on the facultative reinsurance. An admitted (licensed) insurer is permitted to cede reinsurance to a non-admitted (unlicensed) reinsurer even though the ceding of such non-admitted reinsurance is restricted by percentage exportable[5]. Percentage applies to each policy, to each line of business, or to an overall account.

[5] Effective January 1, 1995, a 20% withholding tax was introduced which applies to all insurance premiums paid to non-local brokers, intermediaries, insurers, and reinsurers.

Insurers usually place their reinsurance through directly with reinsurers and through broker. Main brokers which work for a significant reinsurance amount are the international and major insurance brokers.

A large amount of reinsurance flows through Singapore where most brokers are based and because of the established reinsurance market there is an equally large share flow directly to London in the form of treaties.

Fronting, the main and significant method of reassurance to overseas, is not permitted in principle. Fronting Insurance is a procedure in which a primary insurer acts as the insurer of record by issuing a policy, but then passes the entire risk to a overseas reinsurer in exchange for a commission. Often, the fronting insurer is licensed to do business in country where the risk is located, but the reinsurer is not. The reinsurer in this scenario is often a captive or an independent insurance company that cannot sell insurance directly in a particular country.

If, however, it can be comprehensively proven that a risk cannot be insured or reinsured at all in the local market, the Insurance Bureau of the BAPEPAM does not rule out altogether exemption in specific cases from the regulations regarding minimum retentions. Global carriers must have a minimum security rating of BBB from a recognized international rating agency otherwise the fronting companies may incur higher risk charges under the risk-based capital formula.

10.2.6 Sanction Related to International Business Deal

There are currently antidumping duties and air carrier bans in force in respect of Indonesia. In February 2005, the Financial Action Task Force (FATF) removed Indonesia from the list of "Non-Cooperative Counties and Territories" after enactment and substantial implementation of anti-money laundering reforms. To ensure continued effective implementation of these reforms, the FATF will monitor the developments in Indonesia, in consultation with the relevant FATF-style regional body.

There are currently no UK and EU sanctions in force against Indonesia. In shorts, there are currently no impacts of sanctions on Indonesian insurance industry.

10.2.7 Compulsory Insurance in Indonesia

Indonesian Mandatory Insurances are as follows.

(1) Workmen's Accident Insurance

Work-related injury and disease are covered by Indonesian National Insurance Company (P.T. JAMSOSTEK)

1) Related Decree

1951–Law No.2 (Law of Workmen's Accident)
1977–Decree No.33 (Decree concerned Workers' Social Insurance)
1993–Decree No.14 (Decree regarding to program operation of labor social compensation)
1993–Presidential Decree No.22 (Presidential Decree related to type of occupational dieses applied to workmen's compensation)
2000– Decree No.83

2) Requirement

It is mandatory to the company with more than 10 employees or a monthly payroll per person exceeding of Rp1,000,000.

3) Coverage

i. Employment Accident Benefit

Jamsostek pays benefits of medical expenses, temporary disability, loss of life, and permanent disability.

- Medical expenses: Reimbursement of 100% of the cost to medical treatment, up to a maximum of Rp6,400,000
- Temporary Disability:100% of wages for the first four months 75% of for the next four months
- 50% thereafter payable until recovery or declaration of permanent disability
- Loss of Life:A lump sum equal to 60% of 70 times of monthly salary + funeral expenses , and an allowance per month is payable for a maximum of 24 months

ii. Old Age Benefit

The Old Age Benefit is payable when

- Employees turn to 55years old
- Disable to work caused by severe physical impediment
- Loss of life

iii. Death Benefit

Payable: Loss of life before age 55 caused by non-industrial accident

iv. Health Insurance

All citizens can receive gratuitous medical treatment at hospital/clinic

Note that i-iii are mandatory, and regarding iv., if company has superior benefit plan to JAMSOSTEK compensation, it would be unnecessary.

4) Contribution / Insurance premium rate

i. Workmen's Accident: Employer is obliged to contribute at the rate of 0.24%-1.74% of salary
ii. Old Age Benefit: Employee is obliged to contribute at the rate of 2% of salary, and the employer pays a further 3.7%
iii. Death Benefit: The employer pays 0.3% of salary.
iv. Health Insurance: The employer pays for the healthcare provision. Contributions are for 3.0% for single people and 6.0% for married couples.

(2) Compulsory Automobile Liability Insurance

The law indicates all citizens to buy Compulsory Automobile Liability Insurance at annual registration time, however, the function does not work effectively because of low amount of compensation and lack of perception about automobile insurance by vehicle owner. As things are that, mainly for foreigners, Compulsory Automobile Liability Insurance is as Voluntary Motor Insurance.[6]

Compensation limits are as follows.

- Death / Permanent Disability Rp5,000,000
- Medical Expense Rp2,500,000
- Funeral Expenses Rp500,000 (direct payment to mortician)

[6] In case of leased car, lessor arranges the automobile insurance comprehensively. In case of installment plan of vehicle, it seems that motor dealers insure the vehicle. Owner of vehicle has to pay fee of compensation fund of automobile accident controlled by JAS-RAHARJA at the renewal time of annual road tax. JAS-RAHARJA is administrated by insurance company and Government.

10.3 Indonesian Insurance Market Overview and the Difficulty for Arranging an Insurance Coverage and the Level of Rough Estimate for Insurance Cost

10.3.1 Indonesian Insurance Market Overview

(1) Indonesian Insurance Market Size and Feature

Indonesian Insurance Market is a small market, premium volume of which is less than 10% of Japanese Insurance Market. The 2009 Total Direct Premium Income in Indonesian Insurance Market is about Rp. 29,000 Billion (about Yen 290 Billion, ROE for 2009) as illustrated on the table below. More than 140 Insurance companies are operating in such a small market.
The biggest two insurance companies account for one forth and also the biggest 10 insurance companies account for two third of total insurance market. Thus, as other than those insurance companies have less underwriting capability and a solvency margin, the Supervising Agency have been repeatedly requesting the insurance companies increasing the minimum capital from standpoint of consumer's protection.

Meanwhile, "Property" related insurance is held by an overwhelming majority in the market and the share of "Bodily Injury (Personal Accident Insurance etc.)" is only less than 5% of whole market, which shows the typical market structure featured in the under development countries.

The GDP growth rate of Indonesia is very high next to China and India.

This Insurance market is observed as an expected market for the future growth in consideration of the population over 200,000,000 and the rapid increase of the insurance diffusion ratio.

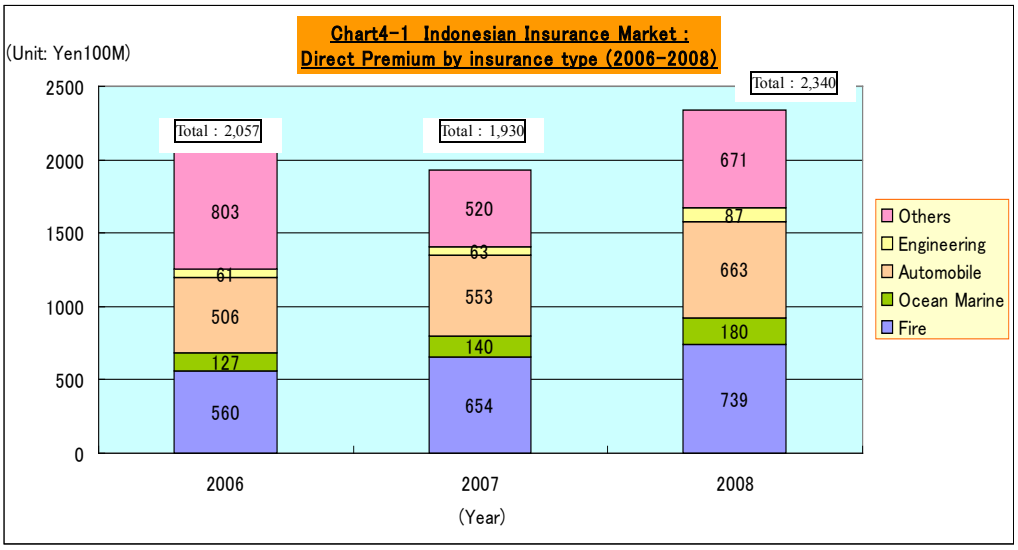


Figure 10-1 Indonesian Insurance Market

(2) Type and Number of Insurance Companies

As of 2009, there are 144 insurance companies operating business in Indonesia, inclusive of 4 reinsurance companies, 47 life insurance companies and 93 non-life insurance companies. Of these 93 Non-Life insurance companies, there are 3 types of insurance companies as defined below.

Table 10-7 Number of Insurance Companies Classified by Type in Indonesia (Trend for 2007~2009)

Type of Company	2007	2008	2009
Local Company (Note 1)	73	70	69
(National Company) (Note 2)	(3)	(3)	(3)
Foreign-affiliated Company (Note 3)	21	20	20
(Japanese Affiliated Company)	(5)	(5)	(5)
Reinsurance Company	4	4	4
Total	98	94	93

Notes

1. No restriction for Investing company in Affiliated Company. Many local insurance companies are invested by financial institution.
2. Three National insurance companies are as follows:
   - PT Asuransi Jasa Indonesia
   - PT Asuransi Ekspor Indonesia
   - PT Asuransi Kredit Indonesia
3. The foreign insurance companies had been restricted to invest less than 80 % share until 1999, however, they have recently been approved to increase flexibly share of investment.(Subject to maintaining the invested amount of local partners and increasing the invested amount in excess of current invested amount.) The newly established Islamic Insurance companies (Takaful or Sharia-Compliant Companies) are included in the category of Foreign-affiliated company.

(3) Premium Volume of Major Insurance Companies (2009)

Premium volume of the 10 biggest insurance companies in Indonesian Insurance Market is illustrated in the table below.

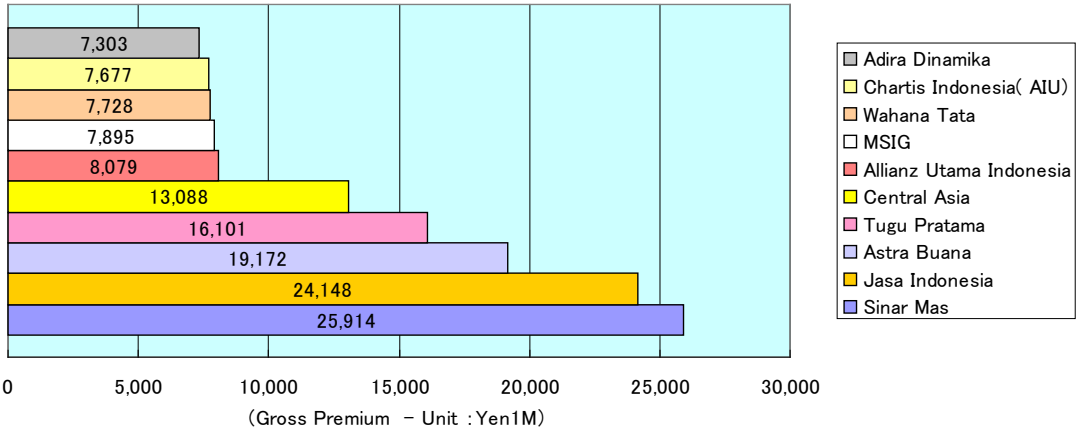


Figure 10-2 Indonesian Direct Insurance Companies: Gross Premium in 2009

(4) Insurance Premium Volume of Japanese Affiliated Companies

Direct insurance premium volume of Japanese affiliated companies invested in Indonesia is illustrated in the table below.

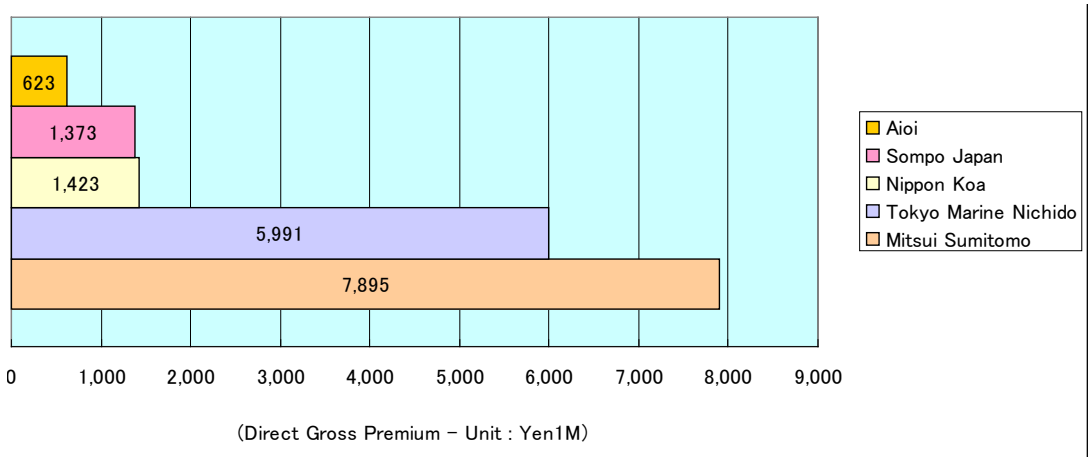


Figure 10-3 Direct Insurance Premium of Japanese Affiliated Companies in Indonesia, 2009

Note
1. Oct. 2010 "Aioi" has been merged & absorbed by "MSIG" which is a subsidiary company of "Mitsui Sumitomo"
2. Apr. 2011 "Nippon Koa" has been changed name to "PT Asuransi Nippon Koa Indonesia"

(5) Captives

There is no legislation in Indonesia relating to captive insurance companies. Local insurance, reinsurance, taxation and company legislation does not encourage the establishment or deployment of captive in the Indonesian market.

A number of large corporations are shareholders of insurance companies which could thus be described as captive companies. Some of major local direct Indonesian insurance company has an interest in a captive insurance company registered in Labuan (Federal Territory of Malaysia).

(6) Non-Life Insurance Pools

Pools operating in the Indonesian market are as follows:

1. Terrorism Pool: providing terrorism coverage to 48 participant companies
2. Property Pool: to which all direct insurance companies are obliged to cede 2.5% of their property business (with maximum limit of US$0.5 Mill.)
3. Since January 1, 2004 companies have also been obliged to cede to a specific local reinsurance company 5% of their earthquake cover on property risks (subject to maximum limit of US$2.5 Mill. any one risk irrespective of location situated in West Java including Jakarta and Banten) and 25% for risk located in other areas.
4. Property Pool called Konsortium Asuranci Risiko Khusus (KARK) for markets (pasars)
5. Customs Bond Pool: Konsortium Asuranci Custom Bond Indonesia (KSABI)
6. Oil and Gas Pool for onshore and offshore risks (KPIAI)
7. Crop Pool: now believed to be almost redundant.

(7) Indonesian Reinsurance Market Overview

Though Indonesian direct insurance market is recently progressing, reinsurance support is very important area for direct insurance companies in Indonesia because of insufficient underwriting capacity and various method of reinsurance transaction is adopted in the market.

Regulations published in 1999 required that security rating for overseas reinsurance must be at least BBB based upon ratings from recognized international rating agencies.

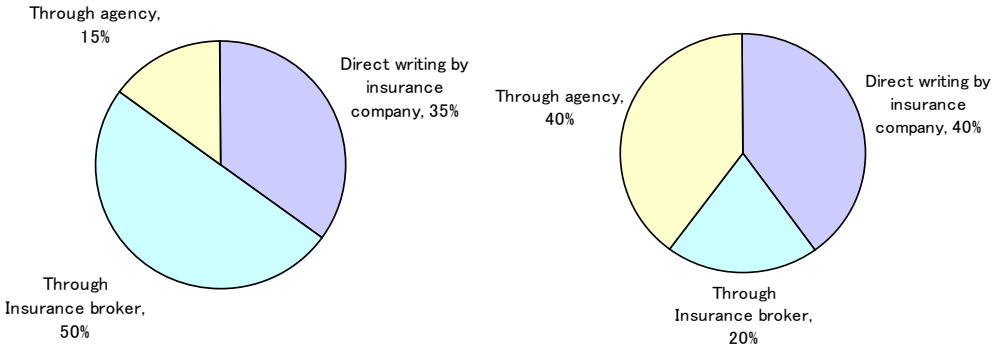
Reasuransi International Indonesia (REINDO) is stated-owned, and was established in 1997. Indonesia also has four private domestic reinsurance companies.
Direct insurance companies are required to cede 2.5% to REINDO on all property risks, under the government central statistics department (BPPDAN) scheme.

Since January 1, 2004 companies have also been obliged to cede to a specific local reinsurance company 5% of their earthquake cover on property risks (subject to maximum limit of US$ 2.5 Mill. any one risk irrespective of location) situated in West Java including Jakarta and Banten) and 25% for risk located in other areas.

The insured amount of earthquake insurance should be the full value and its premium is calculated based on the total insured amount. However, the condition of "First Loss Basis" is partly underwritten in some case.

(8) Non-Life Distribution Channels

There are 3 Non-life Insurance Distribution Channels in Indonesia, (1) Direct writing by insurance company (2) Through insurance broker (3) Through agency. The market share for these distribution channels is roughly illustrated in the figure below.



Notes
1.Direct Writing: in the past, most Japanese corporate and individual seem to have made an insurance contract through direct writing under historical background. However, it is gradually increasing that broker handle insurance contract regarding the big project with project finance.
2.Through Broker: There are more than 160 brokers operating inclusive of foreign major brokers and local brokers. It seems that foreign major brokers handle the insurance program for most of big corporate and huge project because the local broker seems not to have sufficient insurance knowledge and experience to compare with the foreign major brokers. These foreign major brokers are gradually penetrating in medium size market cooperating with big local industrial conglomerate by providing technical support information service.
3. Through Agent: Most of Auto Dealer and Auto Leasing Company handle Automobile insurance acting as an agent. Therefore, automobile insurance are increasingly written through agent. Insurance are tended to become common through a call center or a financial institution in the city such as Jakarta.

Figure 10-4 Non Life Insurance Distribution Channel in 2008 (left: Commercial, Right Personal)

The premium volume handled by 10 biggest broker in 2009 are illustrated in the table below.

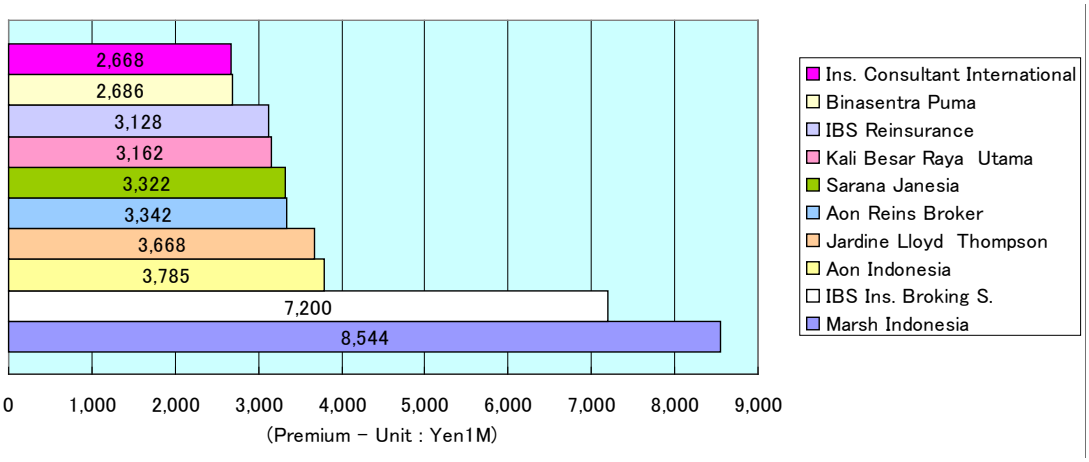


Figure 10-5 Premium Handled by Top10 Non-Life Insurance Brokers in 2009

(9) Premium Payment Terms

Regulations require that premiums should be paid in accordance with policy conditions. For example the fire insurance standard condition indicates payment within 45 days of policy issuance or commencement of the insurance and the earthquake insurance standard condition indicates payment within 30 days. Provided further that if the premium is not received by insurers within the prescribed period, insurance contract is automatically cancelled without any notice by insurer.

Beside that risk-based capital (RBC) regulations recognize outstanding premiums up to 60 days from inception of risk, which puts pressure on many companies as the prevailing credit period (of market) is within 90 days. Brokers often seek to pay premiums for large clients by installment and in doing so the credit period often extends to 120 days.

(10) Insurance Premium Taxes

A stamp duty of Rp.6,000 applies to all policies. There are no other charges or premium or policy taxes.

1) No insurance premium taxes are applicable.
2) Stamp Duty
A stamp duty of Rp. 6,000 is applicable to an insurance policy at policy holder's expense.

Notes
1. Taxable line of insurance : All line of insurance including Life and Non- Life Insurance.
2. Where non-admitted insurance is arranged by buyer directly with an insurer outside Indonesia a withholding tax 10% should be paid. It is difficult to monitor this, however, since foreign exchange regulations have been liberalized and only amounts exceeding US$100,000 must be reported to the Central Bank, Bank Indonesia.
3. Withholding tax of 2% is imposed on premiums ceded by direct insurance companies to nonresident reinsures, and 1% applies to premiums ceded by reinsurances in Indonesia to non-resident companies.

(11) General Conditions and Other Terms and Conditions of Non-Life Insurance

1) Insurance Conditions (Wording)

Although the contents of the general condition are not stipulated in the Insurance Regulation, there is a tendency to follow the UK's insurance conditions or insurance conditions designed by Munich Reinsurance Company.

Direct insurance company should basically file the registered requirement to BAPEPAM (Capital Markets and Financial Institutions Supervisory Agencies = CMFISA) for the approval of the wording of insurance general conditions to be used. In case no objection from BAPEPAM is made within 14 days, it is possible for the insurance company to use freely these conditions following the "File & Use" principle.

As to an automobile insurance rate, insurance companies should use the exact rate filed to BAPEPAM.

The language used in the insurance general conditions is stipulated in The Commercial Code Regulation and Indonesian or English is used in the local insurance general conditions. And also the general conditions used in the foreign insurance market are available based on "File & Use" principle. However Indonesian has a priority for interpretation in case of the language dispute.

2) The Currency of Insurance Contract (Insurance Contract in Foreign Currency)

The Currency of insurance contract is basically Indonesian Rp. and the foreign currency also is available. Usable foreign currencies are currently Japanese Yen, US Dollar and Singaporean Dollar. etc. The foreign currencies are freely used in the premium payment, the claim payment, the retention of insured amount, reinsurance, etc. There is no exchange restriction in the overseas remittance for reinsurance premium. It is general in the policy of foreign currency that the Currency Clause with an agreement of Exchange rate of Rp. for claim payment is attached to the policy.

3) Jurisdiction Clause

The insurance companies operated in Indonesia assert totally Indonesian Jurisdiction in case of lawsuit, however they occasionally attach the Worldwide Jurisdiction Clause based on the fronting arrangement[7] in case of big project which will be difficult to obtain support from a reinsurance market.

4) Insurance Cancellation Clause

Cancellation period is different from each line of businesses, which are as follows:

- Earthquake, Machinery Insurance 7days
- Standard Fire Insurance 3days
- Standard Automobile Insurance 3days
- Employer's Liability・Workers' Compensation, Third Party Liability 30days

5) Tariff Regulation

The tariff regulation is applied to Fire, Business Interruption, All Risks Property insurance and Automobile insurance in Indonesia and other than those insurances are in principle free rate.

However, Property insurance rate from September, 1996 and Fire insurance rate from August, 1997 becomes an advisory rate not a compulsory rate. The Earthquake insurance pool has been established in January 2003 and the rate and conditions are controlled by MAIPARK (Earthquake Reinsurance Company). As to automobile insurance rate, each insurance company should file their own rate based on their underwriting result, which has been regulated from September, 2007 by the Decree of the Ministry of Finance. BAPEPAM is strictly supervising "each company individual rate" after changing the tariff regulation.

[7] Insurance contract is made with the admitted insurance company in Indonesia and the most share of insured amount is placed with overseas reinsurance market. This arrangement is "a fronting arrangement."

10.3.2 Level of Difficulty for Insurance Arrangement and Rough Estimated Insurance Cost

Details are shown in the below table.

Table 10-8 SPC Participate Insurance Types and Conditions for the PPP Project

Table 10-8 SPC participate insurance types & conditions for the PPP Project

(Scope of coverage, availability, anticipated cost levels and other view points, other than the compulsory insurances)

(*) The anticipated cost level is subject to the record/ credit of the insured & insurance market trend.

: Unavoidable insurances under the job (under the job requirement)

: Unavoidable insurances under the job (requirement by the sponsors & the lenders)

: Others (for the self protection)

Stages	Types of Insurance	Insured (usual)	Insurance Conditions (summary)	Comments & View points (Approximate ins. cost levels etc.)
Design / Construction	**Bid Bond, Performance Bond, Payment Bond**	Bidder (and / or EPC candidates)	Bid Bond (5～10% of bid amount); Covering liquidated damages due to bidder's default of contract signing. Performance Bond （10～30% of EPC contract value); Covering liquidated damages due to default of EPC contract.	Bidder (Sponsor or candidate of EPC) shall provide Bond or equivalent Guarantee Insurance Policy in case when West Java Province Government (Gov.) requested, provided that SPC (set up only after awarded) won't be able to provide Bid Bond and then it will be provided by candidate of EPC contractor. It is rather difficult to provide large scaled Performance Bond because of the underwriting capability of each insurance company. Bank Guarantee is also allowed and required in case of large scaled project. Bond (Insurance) cost: 0.3 to 0.5%x Bond amount for Bid and Performance Bonds. 0.01～0.02%x Bond amount for Advance payment and Intermediate payment Bonds.
	Comprehensive(or Commercial) General Liability Insurance during construction periods.	EPC	Covering third party liability caused during execution of construction works. (Covering against in-site and / or out-site resident, visitor, passenger, existing facility and the accidental environmental pollution risks.)	It is unavoidable to provide in this project under the contract agreement between West Java province Gov. and the Loan Agreement. Usually, the minimum Sum Insured should be indicated under the EPC Contract Agreement (Min. US$10～20Mill.). All players such as West Java Province Gov. sponsors, lenders, SPC, and all their sub contractors are to be included in the insured, and Cross Liability Clause between insureds should be requested. SPC may provide insurance policies on behalf of EPC (this means OCIP = Owners' Control Insurance Policy). Insurance cost : 0.05～0.2% x EPC contract value.
	Environmental Liability Insurance during construction periods.	SPC (and / or EPC)	Covering gradual environmental pollution liability due to usual execution of works (Water / Soil pollution)	It won't be required under the contract agreement because of risk appearances / cost performances of the project. It is more difficult to obtain coverage from insurance market (It is conditional to do the Due Diligent Survey by the insurers). Provided that accidental environmental pollution risk is covered under forgoing CGL policy. SPC may provide insurance policies on behalf of EPC (this means OCIP = Owners' Control Insurance Policy). Insurance cost : Case by case (unknown for the time being) subject to the Due Diligent Survey Report
	Contractor's All Risks Insurance	EPC	Covering construction works, materials, temporally works, temporally buildings (including Force Majeure) - All Risk basis - Full Replacement Value basis	It is unavoidable to provide under the contract agreement. Normally the coverage is required all risks basis with 100% sum insured. The scope of coverage is to extend Earthquake, Windstorm, Flood, Lightning, Soil Collapse, but also Terrorism, Vandalism by third party. SPC may provide insurance policies on behalf of EPC (this means OCIP = Owners' Control Insurance Policy). Insurance cost : 0.5～1.0% x EPC contract value （Subject to the sum insured / Deductible of Earthquake, Terrorism risks)
	Delay in Start Up Insurance (And / or Advanced Loss Of Profit Insurance)	SPC	Covering advanced loss of profit of SPC due to accident / disaster of the facilities. - Out-site infrastructure accident risks covered - Including DSC (debt service cost)	It is unavoidable to provide under the agreement by sponsor and lender. The scope of coverage will be extended to advanced loss of profit influenced by delay of construction due to accident on out-site infrastructure and / or construction materials during transportation. Insurance cost : 0.5～1.0% x Annual Gross Profit （including DSC) of SPC
	Marine Cargo Insurance	EPC	Covering damages on the construction materials / construction machineries during transportation on ocean, inland and / or air. - All risks basis (Including War, Terrorism risks)	It won't be required under the contract agreement of the project.Though it is normally requeted under the EPC Contract Agreement but it won't be a contract condition in this case because of the local procurement ability or the procurement contract condition (It is unnecessary for SPC in case of CIF basis procurement contract of the materials). Insurance cost : 0.2～0.3% x New replacement value of materials ×110%

Table 10-8 SPC participate insurance types & conditions for the PPP Project

(Scope of coverage, availability, anticipated cost levels and other view points, other than the compulsory insurances)

(*) The anticipated cost level is subject to the record / credit of the insured & insurance market trend.

; Unavoidable insurances under the job (under the job requirement)

; Unavoidable insurances under the job (requirement by the sponsors & the lenders)

; Others (for the self protection)

Stages	Types of Insurance	Insured (usual)	Insurance Conditions (summary)	Comments & View points (Approximate ins. cost levels etc.)
Design/Construction	**Professional Liability Insurance**	EPC (Designer)	Covering contractual liability of the Professional Designer against the owner (Product guarantee, Product liability)	Though it is sometimes required to provide under the EPC Contract Agreement, but it won't be required under any agreement in this project because of the difficulty of arrangement and that of cost performance. Normally professional designers would have been provided annual basis open cover Professional Liability policy and is rather rare to arrange for each independent project. Provided further that the status of SPC of this case is the Owner, and by the way the designer will be a consortium member (most probably a job partner), so the coverage for contractual cross liability between partners is an unpragmatical requirement. Insurance cost : 10～30% x Sum Insured (Designer's cost)
Operation , Maintenance, Management	**Trade Credit Insurance**	SPC (and / or Sponsor and / or Lenders)	Covering Emergency risks (as due to Force Majeure etc.) and the project default risks due to credit default (such as due to no payment etc.)	Though the sponsor / lenders are able to provide this insurance to protect themselves against default of West Java Province Gov. / SPC, SPC may be requested to provide this case under the agreement between sponsor and under the Loan Agreement. Case by case (unknown for the time being) subject to the NEXI or other international re-insurance Market trend
	Property All Risks Insurance	SPC	Covering property damages of the facilities (All risks basis covering following Force Majeure) - Earthquake Tsunami, Volcanic Eruption risks -]Terrorism risks	It is unavoidable in this case under the contract agreement between West Java Province Gov. /sponsor and under the Loan Agreement It will be required all risks basis condition with full sum insured (new replacement value basis) , and the scope of coverage is to extend Earthquake, Windstorm and Terrorism.Provided that the sum insured of Earthquake and Terrorism risks may be allowed to reduce subject to market availability and the cost levels. SPC may arrange insurance policy but the lenders and the sub contractors are to be included as additional insureds. Insurance cost : 0.5～1.0% x New replacement value of the facilities (Subject to the sum insured / Deductible of Earthquake, Terrorism risks)
	Business Interruption Insurance	SPC	Decrease of gross profit due to business interruption cause by the accident on the facilities and / or out-site utilities (including debt service cost)	It is unavoidable in this case under the contract agreement between sponsor and under the Loan Agreement. The sum insured is requested to be annual gross Profit of SPC including DSC. It is one of the key insurance to cover decrease of Gross Income due to business interruption caused by accident of out-site infrastructure (such as road, bridges, power / telecommunication line, gas, water facilities). Insurance cost : 0.3～1.0% x Annual Gross Profit of SPC including DSC
	Comprehensive General Liability Insurance during operation / maintenance periods	SPC	Covering third party liability cause by execution of operation / maintenance works. (Covering against in-site and / or out-site residents, visitor, passenger, existing facilities and the accidental environmental polution lrisks.)	It is unavoidable and one of the key insurance for this project under the contract agreement between West Java Province Gov. Sponsor and under the Loan Agreement. Insurance cost : 0.05～0.2% x New replacement value of the facilities.
	Environmental Liability Insurance during operation / maintenance periods.	SPC (and / or / O&M Contractors)	Covering gradual environmental pollution liability due to usual execution of works (Water / Soil pollution)	It won't be required under any agreement because of risk appearances and cost performances of this risks. It is more difficult to obtain from usual insurance market (It is conditional to do the Due Diligent Survey by the insurers). Provided that accidental environmental pollution risk is covered under forgoing CGL policy. SPC may provide insurance policies. Insurance cost : Case by case (unknown for the time being) subject to the Due Diligent Survey Report

11. Issues/Problems toward a Realization of the Project

11.1 Access Road in Nambo (Relationship with PT. Indocement)

11.1.1 Outline of the Access Road in Nambo

As shown in 6.1.2, a part of the planed access road to the project site in Nambo is located in the land owned by PT. Indocement, and it inevitably passes through their land. In the discussion between West Java Provincial Government and PT. Indocement, so far it has been agreed that PT. Indocement conducts development of a new access road which will be located in their land.

The access road from junction of the existing road in PT. Indocement's land is planed two lanes. The part of access road which is expected to be constructed under the budget of West Java Provincial Government is 5.5 km of one lane road. As for the government portion, detail design has been completed, and bidding for construction is under process.

11.1.2 MOU between PT. Indocement and West Java Provincial Government

On 13th January 2011, relevant four parties (West Java Provincial Government, Bogor Regency, PT.Indocement and PT Cibinong Center Industrial Estate) have reached MOU regarding facilitation of access to the TPPAS in Nambo. The main points stipulated in the MOU are as follows.

- The scope of MOU shall cover; Planning, Development, Maintenance and Budgeting of the access road to TPPAS.
- PT. Indocement shall perform the land acquisition, detailed planning, construction and control for the access road. And certain compensation shall be made for the access road utilization.
- The form of compensation is in the form of utilization of processed wastes according to the specification stipulated by PT Indocement, and it will be arranged in the further Technical and Operational Cooperation Agreement
- Expenses for planning of land acquisition, development, improvement and maintenance of road shall be charged to PT. Indocement.
- MOU will be followed up with more Technical and Operational Cooperation Agreement.

11.1.3 Issues to be Solved

So far, the several discussions with PT. Indocement and relevant parties including West Java Provincial Government have been made. As PT. Indocement has planned to utilize wastes from TPPAS as fuels for their cement factory, they have requested high requirements regarding qualities and conditions (size: <30mm; moisture: <20%; calories: >12GJ/ton, and so on) of wastes brought to their cement factory. While installation of RDF facilities are needed to fulfill the requirements, in case that initial costs and O&M costs for RDF are included in the total project costs in SPC portion, the necessary tipping fees definitely exceeds the level of tipping fees which the Government of Indonesian expects.

Therefore, it is proposed that West Java Provincial Government will bear the costs related to RDF facilities. In the F/S, those costs are excluded from the financial analysis.

Further considerations and decision makings should be made by the relevant parties in the Government of Indonesia so as to make a decision promptly.

11.2 Compost

It has been reached consensus among relevant parties including West Java Provincial Government regarding compost products produced in the intermediate facilities of the project.

- To long the project life of the landfill sites, West Java Provincial Government will guarantee the taking-over of the ownership of compost products from Legok Nangka and Nambo. Namely, West Java Provincial Government will take over approximately 450 ton/day of compost products from one site. West Java Provincial Government will provide the compost products as soil conditioners with the Ministry of Forestry. Compost products will not use as compost for food production.
- West Java Provincial Government recognizes that there are possibilities that hazardous waste including medical wastes contains compost products, though such hazardous substances are not entered to TPPAS according to the relevant law/regulations.
- West Java Provincial Government acknowledges that duration of maturation of compost products is 20 days with additive. West Java Provincial Government should check its product when the 20day-composts are handed over, and if West Java Provincial Government regards the quality of products are not satisfy a required quality specified in the standard of composting in Indonesia, they will take-over those products to a private companies "AGRODUDA" to complete maturation process for soil conditioners. Relevant transportation cost should be borne by West Java Provincial government.
- Market price for additive is approximately Rp 27,500/kg. It equivalent to USD 2 per ton. West Java Provincial Government agrees that the costs for additive should be additionally included tipping fee (it is not included in the tipping fee calculation in Chapter 12.
- In case that the Government can't take over the composts produced in a day, SPC will dispose those composts to final disposal sites within a same day[1]. West Java Provincial Government should bear the cost which occurs in such process, in any reasons.
- The West Java Provincial Government is responsible for the transport of compost from the project sites to the delivery destinations (including fuel, freight vehicle)

To solve above issues, the following outstanding matters should be followed up.

- West Java Provincial Government will have to deal with around 900 ton of the 20 day-compost from two sites in everyday in the long period (approximately 14 to 16 years). West Java Provincial Government should prepare a action plan for the compost products.
- The above plan should include how West Java Provincial Government monitors impacts of utilization of the products.
- The plan also should examine how West Java Provincial Government deal with, if contamination of hazardous substances is founded.

11.3 B3

According to Perubahan Atas Peraturan Pemerintah NO. 18/1999, B3 wastes are prohibited to enter TPPAS, and therefore it is understood that those B3 wastes will not be accepted incoming and enter to both Nambo and Legok Nangka.

[1] Because it is needed to secure the spaces in the compost facilities for the coming wastes from sorting facilities

While SPC will endeavor to watch and check B3 wastes not to be disposed to the landfill site, the operator is not able to take responsibilities caused by any incidents and/or problems associated with such dumping. In case that B3 wastes enter to the sites, it is expected that West Java Provincial Government should have a responsibility for taking-over from the sites.

11.4 Hazardous Wastes from Domestic (Butteries, Bulbs, Needles, etc)

The general condition of the domestic waste in the service areas in both sites is still mixed together, which means that hazardous wastes from domestic (butteries, bulbs, needles, etc) undoubtedly may enter the sites. Considering such situation, it is planed that those hazardous wastes will be sorted, compiled and temporally stored in the sites by SPC.

West Java Provincial Government has a responsibility for taking-over those from the sites. If the hazardous wastes are dumped at the final landfills despite our efforts, the operator will be exempted from any responsibilities caused by any incidents and/or problems associated with such dumping.

The taking-over hazardous wastes should be implemented as follows:

- Hazardous wastes from domestic (butteries, bulbs, needles, etc) should be disposed in the disposal sites around Nambo which has been operated by PPLI (the join company consists by private and public sector)
- Transportation from the sites to PPLI should be carried out by West Java Provincial Government, and transportation costs which occur in such transaction should be borne by West Java Provincial Government.

11.5 Temporary Storage of Cut Soil and Necessary Cover Soil

It has been reached consensus with West Java Provincial Government regarding cut soil and necessary cover soil. West Java Provincial Government should prepare an action plan for cut soil and necessary cover soil

- As TPPAS will be operated as sanitary landfills, procurement of cover soils will be needed in the long project period. As for the case in Legok Nangka, West Java Provincial Government should procure and supply it to SPC. For Nambo, balanced soils between cut and fill at the construction stage could be storage in another 60 ha, which will be utilized as cover soils at the stage of operation.
- At the site of Legok Nangka, the temporally storage space for balanced soils can't be secured due to geographical limitation. Therefore, the West Java Provincial Government will prepare the land for the temporary storage of cut soil with SPC, and is responsible for the costs and measures for the land acquisition.

11.6 Capacities for PPP Project in Central and West Java Provincial Government

PPP Scheme just has been launched in Indonesia. As shown in Article 12, central government and West Java Provincial Government will be responsible for procurements and project implementation. There are possibilities that lacks of capacities of executing agencies becomes bottle-neck. West Java Provincial Government plans to initiate the operation of the project from 2015. Therefore, in order to secure timely schedule for the procurement, as well as, implementation of both ODA and SPC portion, assistance for capacity development by outside (e.g. donors) is essential.

The study team proposes that donors provide the Government of Indonesia with assistance for PPP project implementation. In case that provision of Yen loan is decided, technical assistance under Yen Loan account in JICA is proposed. The major TORs are as follows:

- Preparation of bidding documents and assistance for tender for consulting services on PPP supervision (Ministry of Public Works)
- Capacity Development on PPP implementation for relevant government officers (Ministry of Public Works, KIMRUM and BAPPEDA)

11.7 3R (Municipal Solid Waste Management)

Introduction of municipal solid waste management including 3R induces various benefits/merits; i) to prolong project life of disposal sites, ii) reduction of transportation costs from sources (e.g. households) to disposal sites, iii) reduction of energies/cost in intermediate facilities. This article examines circumstances and current status on it in Indonesia including West Java, and provides proposal from lesson learnt.

11.7.1 Current Situation

In the most of cities in Indonesia, the governments have faced problems related to wastes such as; difficulties to secure budgets for municipal solid waste management; no enough room/capacity of existing disposal sites; difficulties to acquire the lands for new disposal sites. Due to those problems, the Government of Indonesia has promoted 3R which enable waste volume reduction at upstream (see detail in 3.2).

Despite of efforts by the Government, though there are a few successful cases, pilot projects which have been implemented in the cities including in West Java Provincial Government have faced problems in sustainability. The plans of 3R system in the pilot projects are; to install small recycle (composting) facilities in the communities by the grant from public sector; to sort/sell valuable wastes (e.g. plastics) at the community level. As current situation, the pilot projects currently depend on voluntary activities by local communities. While the facilities has been well prepared at the beginning, systems has not been worked well at the stage of operation due to lacks of (monetary) incentives of people because compost products made by the communities cannot be taken, and recyclable wastes also cannot be sold.

On the other hand, informal 3R activities done by scavengers have shown sustainability and favorable impacts on whole waste management systems. In reality recycle markets have existed, monetary incentive becomes only driver on those informal activities. However, a limitation of informal activities is that it is out of control for formal sector to improve performance of whole municipal solid waste management.

11.7.2 Analysis of the Situation and Identification of Problems in West Java

The majority of wastes generated in the area of West Java are organics (more than 50%). The technology which is commonly used for managing this type of wastes is composting. However this method has not been an attractive activity for most of the communities in this area. According to Dr. Enri Damanhuri, ITB[2], the level of waste reduction by this method is only about 18ton/day, which is less than 1% of the total waste generated.

The recovery of inorganic like plastics is the most common effort made to reduce the waste quantity. These activities, which are practiced in those areas, are mostly done by the informal

[2] *Evaluation of municipal solid waste flow in Bandung metropolitan area, Indonesia*, Enri Damanhuri, et al, 2009; *Evaluation of waste recycling potential in Bandung municipal solid waste*, Enri Damanhuri, et al, 2010

sectors (such as scavengers). According to Dr. Enri Damanhuri, ITB, the level of waste reduction by this method is about 123 ton/day, which is around 7% of the total waste generated. Namely, the current practices of composting and inorganic recycling dose not manage to recycle even 8% of total waste generated.

As mentioned above, the majority of households in the communities do not exert any effort to separate their waste or to recycle and compost their waste. So far, the activities done by informal sector have not been integrated into formal system, and those functions has not been maximally utilized.

11.7.3 Lessons Learnt

Considering current situation, in order to facilitate 3R concept, combination of i) market based approach including monetary incentives and ii) reinforce regulations/laws with command-and-control, would be essential. To do so, it is necessary to set certain policies for exact implementation, and to establish laws/regulation which has exact forces.

As examples, activities which would need for municipal solid waste management system including 3R are suggested in the below[3]:

1) To examine introduction of new tipping fee system (e.g. tariffs connected to volume of wastes)
2) To examine the method of receive recyclable waste like plastics sorted in households (e.g. discount of tipping fees), and rules/method of sales by the municipalities
3) To reinforce institutions at the level of the municipalities regarding collection of tipping fees and 3R implementation
4) To reinforce the on-going 3R activities (promotion for sorting in households, publicity/education activities, securing budget, cooperation with NGO), and re-examine the on-going pilot projects, improvement for awareness in public for hazardous wastes (e.g. heavy matals in butteries)
5) To promote participation (hearing/reflection of their voices) at grassroots levels for 3R activities, operations for on-going pilot projects.
6) To identify/reset the responsibilities for the wastes management at the municipalities level (kota/kabupaten)
7) To integrate informal sector to formal sector
8) To draw master plans for waste management systems in throughout targeted area by participatory approach including official at municipality level, and to establish laws/regulations which are stipulated detail practice

Attempts to spread and fit 3R into the communities would need a certain long period, and capacity building is definitely needed. Therefore, it would be necessary for the government of Indonesia to consider seeking technical assistance for reinforcement of 3R by international donor agencies

11.8 Issues on Scavengers

11.8.1 Current Situation

Scavengers, who earn livelihood through collecting and selling recyclable material from garbage, have been active at the transfer depot and final disposal in West Java. Such activities have not been done under legal trade license, which have been made at connivance by the government. Scavengers, who are reconciled low social status, have not been integrated into

[3] Those suggestions are prepared based on several comments from local expertise, like ITB, PT.MAZA.

official social welfare and social security. The existence of scavengers is acknowledged social issues in terms of poverty, environment and security. In West Java, a construction plan for new TPPAS as sanitary landfill in Legok Nangka and Nambo has been launched, in line with such plan, the existing disposal sites like Salimukti will be closed in near future. As a number of scavengers (several hundred level) will lose the place for earning, and there are high possibilities to cause social problem.

On the other hand, activities by scavengers have been contributing benefits in economical and social point view. Wastes are sorting, cleaning, reforming and also adding commercial values by their activities, then those are reused, which have form waste resources circulation. Also, collection of valuable material from garbage is contributing to reduction of volume of waste which might dispose to landfill sites. From view point of social aspects, such informal activities have provided a mean of earning income and livelihood for the people in poverty and fragile social groups.

On the one hand, it is fact that their work environment and life circumstance are extremely bad. Safety and health risks (for example, disaster caused by collapse of dumped garbage, accidents by heavy equipments, illness through hazardous wastes, odor and noise at the disposal sites and so on) are enormous. And a number of scavengers are squatting at landfill sites where are water and sewerage facilities, and they have resigned unsanitary living circumstance. They have not receive benefit of social safety net

However, there are another realistic perception. The local communities surrounding new project sites have negative perception for migration of scavengers to the sites. Taking into consideration with several view points, West Java Provincial Government has set policies – priority employment of workers at sites should be given to the local people, then second priority will be given to scavengers.

11.8.2 Issues to be Solved

Considering above aspects, it is strongly needed i) to integrate scavengers in informal sector into formal waste management process; ii) to improve waste recycle system by integration; iii) to improve scavenger's livelihood and work environment as one of measure in poverty reduction.

The study team has proposed to West Java Provincial Government that i) scavengers should be employed as workers and be given official status, and such concepts should be included in a new policy which will be set by West Java Provincial government; ii) first around 60% of workers should be employed from the local communities, then remaining 40% should be from outside (scavengers and so on).

It is planed that West Java Provincial Government acts mediator for SPC's employment of the workers (i.e. SPC employs the workers through the official employment process done by West Java Provincial Government). Further discussion on exact method/process regarding employment should be made on the later stage.

11.9 Proposal for Further Assistance on Soft Component

Taking into consideration with above discussions, the following assistance is proposed.

(1) Assistance for Introduction of Municipal Solid Waste Management System

Period: from 2012 to 2017

Scheme: Technical Corporation projects (or similar types of assistance)

Executing agencies: West Java Provincial Government, KIMRUN

Purpose: to facilitate introduction of municipal solid waste management including 3R; to secure feasibility and sustainability of waste management project under PPP

Component of assistance:

1) Assistance for drafting waste management system in each municipalities and implementation plan in whole targeted area, necessary equipments, monitoring
2) Monitoring for sorting hazardous wastes and medical wastes in upstream, human development, drafting implementation plan, supervision
3) Drawing a plan for utilizing compost products, and assistance for implementation
4) Assistance for employment of scavengers
5) Monitoring for public finance related to waste management in each municipalities, assistance for improvement of collection of tipping fee
6) Drafting blue print to spread waste management under PPP scheme

(2) Procurement for Consulting Service and Capacity Development for PPP Management

Period: 2012

Scheme: Technical assistance under Yen loan account

Executing/counterpart agencies: Ministry of Public Works and KIMRUN

Purpose: To launch the project implementation under PPP, and to secure sustainability of PPP

Component:

1) Assistance for tender document preparation for consulting services, and for tendering
2) Capacity development on PPP management for the government officers

(3) Consulting Services (Tender Assistance for SPC, Supervision of Implementation)

Period: 2012 to 2015

Scheme: Yen loan

Executing/contract agencies: Ministry of Public Works and West Java Provincial Government

Purpose: To facilitate PPP project implementation, supervision of the project, disbursement of Yen Loan

Component:

1) Review of FS, and basic design
2) Preparation of bidding documents for Yen loan Portion (Design and Build)
3) Preparation of bidding documents for SPC Portion (Performance specification contract)
4) Integration of both bidding documents
5) Assistance for bidding, and PPP contracts
6) Supervision of construction on Yen Loan Portion

12. PPP Project Plan

12.1 Service Fee

It is necessary to optimize the service fee levels though the study and analysis of the market prices for similar Waste Management PPP projects in Indonesia; the payment capacity and financial conditions of the provincial government; the flexibility of the provincial government in terms of changes in the service fees; and the waste collection fee unit prices from the residents.

(1) Service Fee

Provisions on service fees have been defined in the provincial government regulation on waste management No. 12/2010. The service fee levels are to be determined through negotiations between the provincial government and the business provider, and the PFI Project Contract between the West Java Provincial Government and the Special Purpose Company (SPC) will stipulate the business rights for the whole waste management project.

Much discussion has been in progress with the West Java Provincial Government, and a service fee level of approximately USD 12 per ton had been suggested reasonable by the West Java Provincial Government. However, it has been clarified that USD 12/ton level can cover only O&M cost for sanitary landfill type of TPPAS, and USD 20/ton could be needed to cover an initial cost on an intermediate process facilities and O&M costs. Such recognition has been shared among the relevant parties.

PPP waste management project is unprecedented in the West Java Province, however, the service fee at Bantar Gebang Final Disposal Site[1], which has been implemented under the special provincial authority of Jakarta, is Rp 103,000 (approximately USD 11.4) per ton.

12.2 Government Guarantee

As a measure to mitigate the various risks (such as the revenue risks associated with the service fee and risks pertaining to the changes in laws and regulations) associated with this project, utilization of Indonesia Infrastructure Guarantee Fund (IIGF), which is an institution guaranteed by the Indonesia Government, is planned.

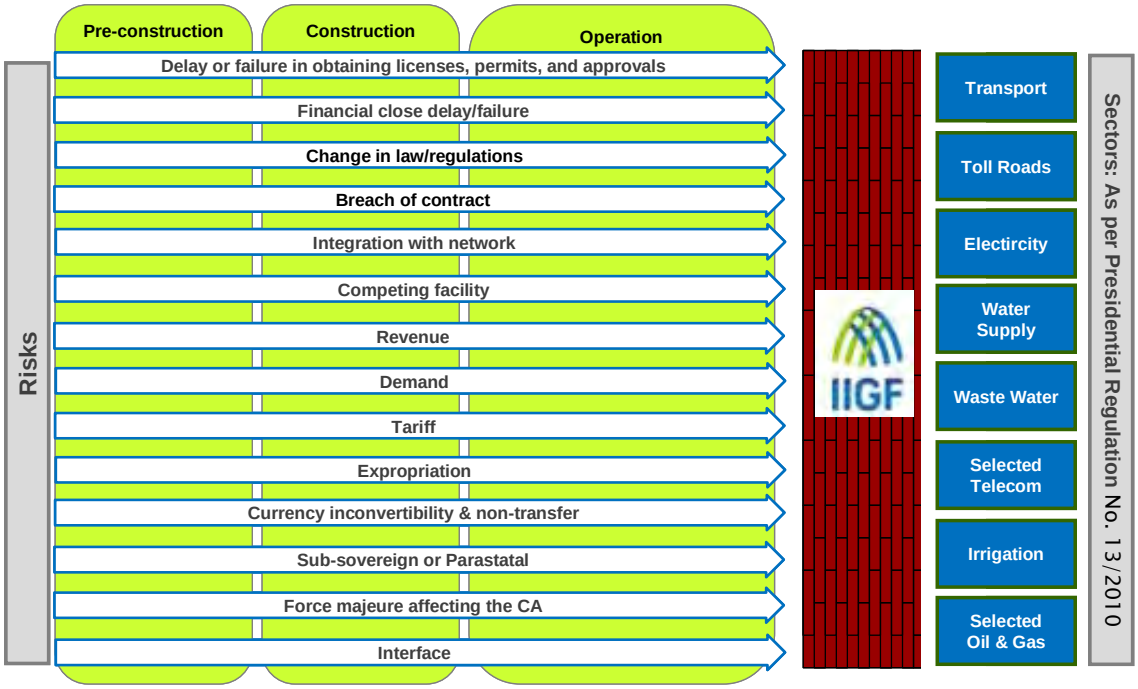
12.2.1 IIGF

IIGF was established in December 2009 in order to achieve the following agenda: 1) Improving the quality and creditworthiness of PPP Infrastructure Projects through framework improvements of evaluation and implementation of guarantees, 2) Improving governance and implementation systems of guarantee provisions, 3) Procedures streamlining for contract agents, 4) Strengthening of government guarantee debt management. The Indonesia Government invested one trillion rupiah initially, and plans to annually increase by one trillion rupiah until 2014. The World Bank will assist in the said institutional design, and an AAA rated IIGF credit/guarantee facility is planned.

The agency has a mission to "provide guarantees which play an important role in the promotion of private capital injection, essential for accelerating domestic economic growth," specifically with the objective of: 1) Providing guarantee products with high transparency, 2) Integrating

[1] However, the mentioned company uses an existing final disposal site, and therefore did not invest in the costs pertaining to the construction of the final disposal site. Furthermore, in terms of operation of the facility, the mentioned company does not use technology for mitigating environmental impacts, such as presented in this feasibility study, and the quality of the site differs from the proposal presented in this study.

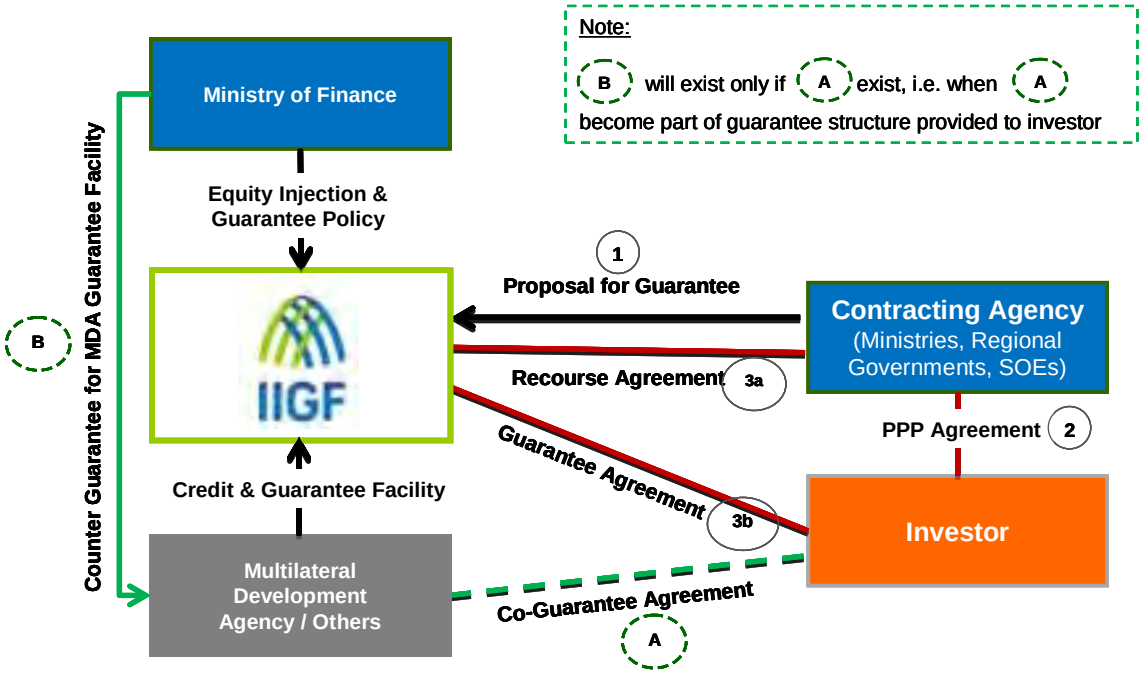
single-window guarantee services through professional management and strong capital strength, 3) Improving the credit quality of infrastructure projects in Indonesia. As indicated in the Presidential Decree No 2010/13, the target sectors are roads and bridges, transportation/logistics, water, sewage water and waste management, irrigation, electricity, telecommunication, and energy. Furthermore, the proposed project is included in the target sector.



Source: IIGF

Figure 12-1 Sectors and Risks Covered by the IIGF Guarantee

The structure for a general guarantee scheme is shown in the figure below. Specifically, upon request from the Contracting Agency (CA) concluding a PPP contract with the investor (for the proposed project, the CA is the West Java Provincial Government), IIGF will sign a guarantee contract with the investor and a recourse contract with the CA. Through such measures, IIGF will supplement the CA with power to guarantee, allowing the CA, who is the central player of the guarantee event (such as changes in policies), to heighten transparency towards investors in order to mitigate disadvantages, and act as a function to strengthen the discipline of the CA.

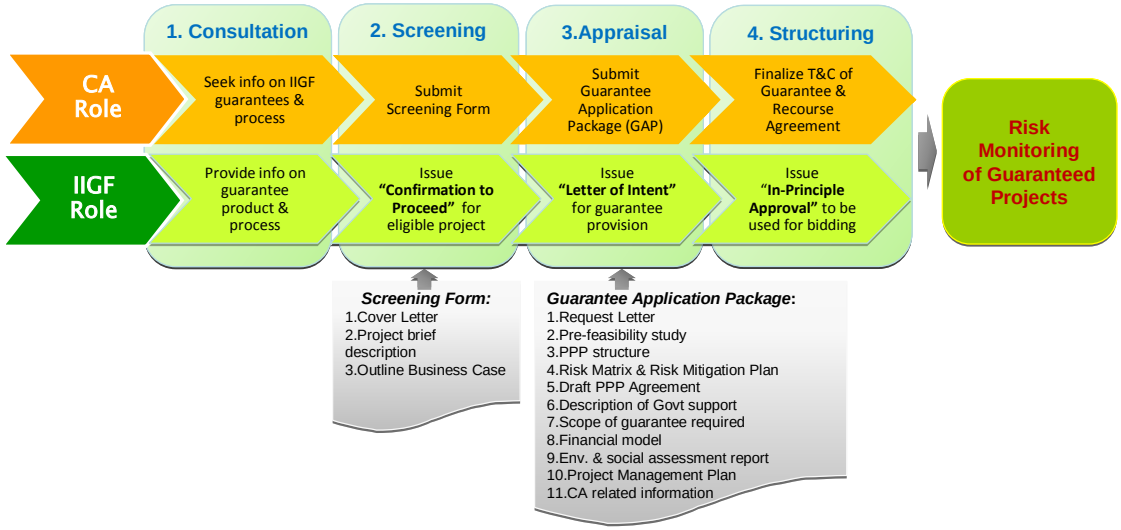


Source: IIGF

Figure 12-2 General Scheme for PPP Guarantee

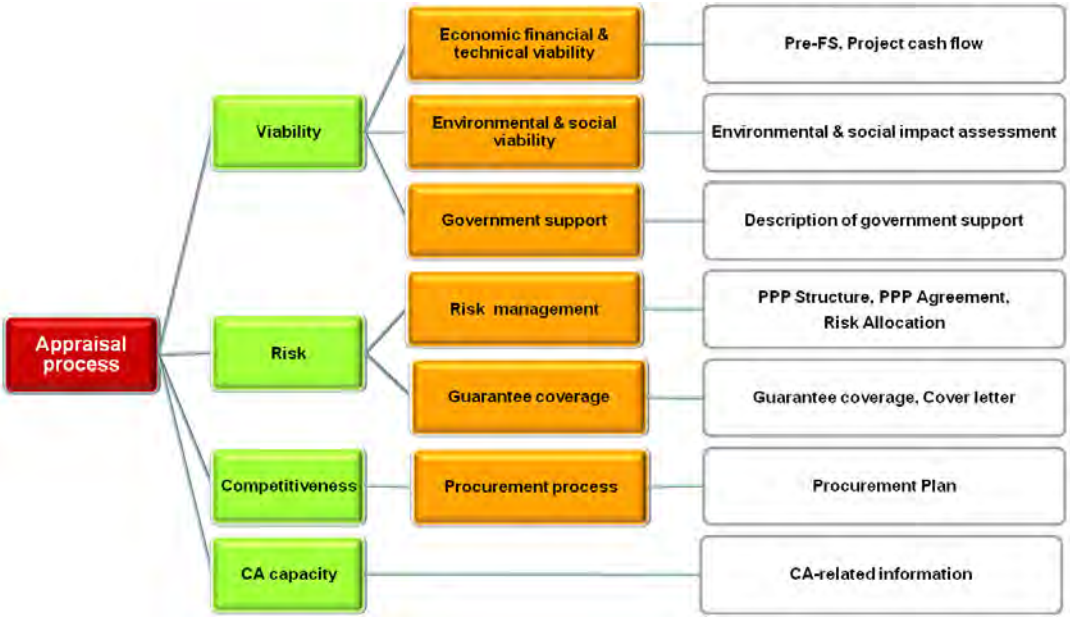
12.2.2 Guarantee Process at IIGF

For proposed PPP projects, IIGF will reach a guarantee agreement after following the process. For this specific project, there will be a screening process after the completion of this feasibility study. Furthermore, materials and results from this study will be submitted to IIGF as part of the application package for the review.



Source: IIGF

Figure 12-3 Guarantee Process at IIGF



Source: IIGF

Figure 12-4 Project Assessment Criteria by IIGF

12.3 Funding for SPC Portion

For the proposed project, the general proposal supposes a financial structure where the intermediate treatment facility (sorting facility, compost facility, and the heavy equipment and machinery) is financed the SPC while the facilities associated with the final disposal site (landfill, leachate treatment facility, and common area) is financed by the ODA loan. While the optimal ratio of the two portions will be analyzed in the following financial simulation, this section will briefly explain the financial sources (debt and equity financing) for the SPC portion.

12.3.1 Debt Financing

For the debt financing portion, considering the public nature of the project, the possibility of a full scale utilization of Indonesia's public infrastructure financial institution, PT SMI (PT Sarana Multi Infrastruktur) is assumed. Maximum utilization of the PT SMI for debt financing will be prioritized. To date, discussion with PT.SMI had been made, and it is planed that all debt portion will be covered by loans from PT.SMI[2]. However, decision for provision for loans will be made upon appraisal by them based on this F/S.

PT SMI was established in February 2009 as a national policy financial institution, 100% funded by the Government of Indonesia (via the Ministry of Finance) in order to accommodate the expect demand growth for Indonesian infrastructural growth. In October 2009, by the Ordinance of the Minister of Finance (No. 396/KMK.010/2009), PT SMI received its license as a "Infrastructure Finance Company). Reasons for its establishment are indicated as follows.

- To be an institution promoting infrastructure development within the Government of Indonesia
- To provide an alternative financial source for infrastructure projects
- To resolve the lack of long-term funds for infrastructure projects

[2] PT. SMI considers co-finance with private banks in Indonesia like BNI.

- To provide the optimally appropriate financial solution by quickly responding to market needs through the cooperation of government, investors, banks, international organizations, and regulatory organizations
- To expand the capacity as a infrastructure financing source by increasing the scale and efficiency through various partnerships

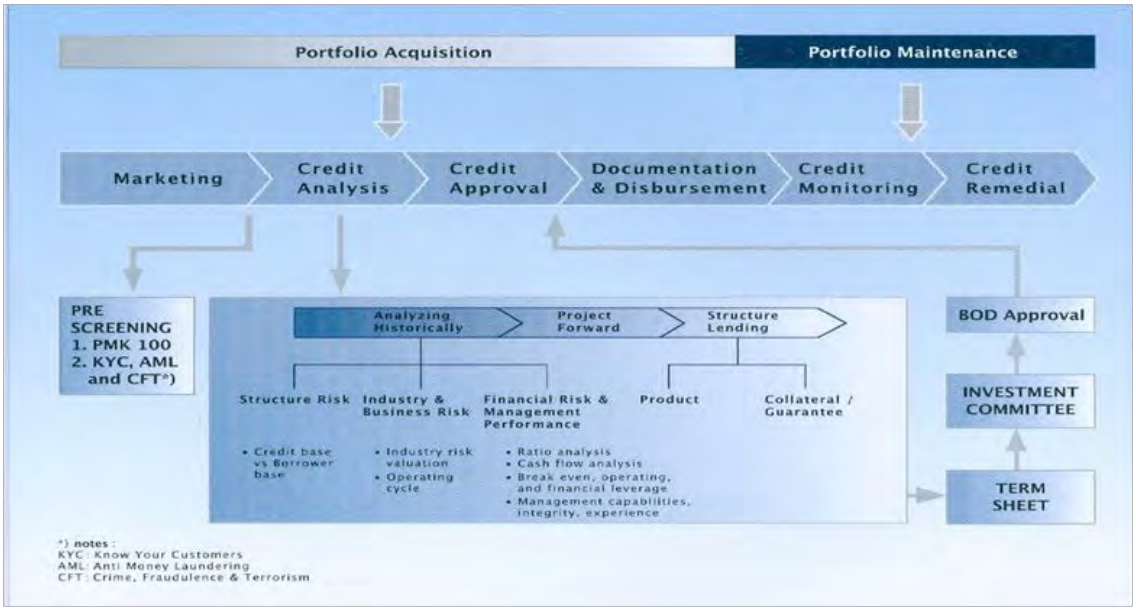
As of July 2011, the company has a credit balance of two trillion rupiah (interview based) and provide a range of products as indicated below. Sectors eligible for financing are road, transport, oil and gas, telecommunications, sewerage and waste treatment, electricity and power, irrigation, and water. The proposed waste disposal management project is included in the list.

Senior Loan	Subordinated/ Mezzanine Loan	Convertible Loan	Equity Investment	Contract Financing	Invoice Financing
Loan Financing to infrastructure projects where PT SMI acts as senior lender to the project	Loan Financing to infrastructure projects where PT SMI acts as junior lender to the project	Financing scheme with conversion scenario to equity at loan maturity date	Direct investment to infrastructure projects through equity ownership	Working capital loan financing to contractors who build infrastructure projects. Disbursement of the loan is based on contracts granted by project owner.	Working capital loan financing to contractors who build infrastructure projects. Disbursement of the loan is based on receivables of the project.

Source: PT. SMI

Figure 12-5 Primary Products Offered by PT SMI

Based on an interview with PT SMI, while there was a preface indicating that the "credit conditions are determined through a review process, and conditions for the project will be determined through a review of the results of this feasibility study" as an image, the average credit terms are as follows: maximum loan period of 15 years (with a deferred principal during the construction phase), applicable interest rate (fixed) at approximately 10%–11% per year (with assumed inflation rate of 6%–7% annually), commitment fee rate of approximately 1% per year. Furthermore, the project review requires approximately 1–2 months generally.



Source: PT. SMI

Figure 12-6 Credit Appraisal Process at PT SMI

However, as the nature of this project is Service Purchase Type where a set income from the client will be paid regularly, the risks pertaining to income are considered to be relatively small compared to other projects handled by the PT SMI. Therefore, the possibilities of a more favorable loan condition have been interwoven into the following financial simulation.

In terms of the procurement structure, over the course of the three year construction period, loan disbursements for the sorting, compost and heavy machinery will be received form PT SMI. After the deferral of principal over the construction period, starting in the fourth year of borrowing, a principal and interest equal repayment will occur throughout the whole project period. In addition, contingency is estimated to be 10% of the total financing of the SPC portion, for which a 1% commitment fee is estimated to occur during the construction phase.

12.3.2 Equity Financing

In terms of the equity portion, after the completion of the feasibility study, each consortium member will consider their participation in the project as an investor, and investment from participating companies are anticipated. As indicated in the following financial analysis, approximately 10% of the SPC portion is anticipated to be equity financing, which assumes a return rate of at least the same rate as the debt portion.

12.4 Review of Project Plan and Financial Analysis

12.4.1 Review of Project Plan

In this section, based on the project costs calculated in Chapters 5 and 6 and taking into consideration the challenges of project operation, a financial analysis was conducted in order to propose the optimal structure for the project plan and the public private division of project scope.

(1) Preconditions

In achieving the optimal project structure, the following items were considered as preconditions. The following items have been agreed upon frequent consultation with the Indonesian

counterparts. Furthermore, these items have been developed in the process of technical, socio-economic, and financial analysis and evaluation through the course of the study.

General and Common Conditions

i) Project Life

The project life of the final disposal site is calculated based on the basic design which gives consideration of the waste volume intake, waste composition, and topographic constraints in the landfill construction. The project life for Nambo is 16.7 years, while the project life for Legok Nangka is 14.2 years.

ii) Debt Interest Rate and Repayment Period

Bank Indonesia (Central Bank of Republic of Indonesia) 10 year government bonds have averaged around 8%, and as explained in Section 12.3, the project proposes the utilization of policy-finance of PT. SMI for debt service at an interest rate of 8% for the financial analysis. The debt interest and principal repayment period will be considered to match the project life. Furthermore, as the majority of the initial investment costs for the private portion will be financed by a loan, the fluctuation of public private ratio is directly correlated with the fluctuation of financing costs (interest payments), providing a great impact to the project cash flow.

iii) Inflation Rate

The inflation rate (Consumer Price Index – CPI) for Indonesia from 2008 to 2010 fluctuated from 2% to 12%, however since the second half of 2010, has sustained the 5-6% range. The financial structure for this project stipulates any fluctuation in capital investment and operational costs caused by changes in inflation rates will be offset by the same changes in the service fees, hence it is not considered in cash flow calculation. .

Conditions Related to Cash Inflow

i) Waste Intake Volume

In this study, the amount of waste intake is assumed to be 1,000 ton/day (similar to the Pre-FS). As the waste volume forecast in Chapter 4 suggests, the general trend for waste generation is increasing, and even taking into account the improvement in recycling (3R) efforts, it is predicted that at least 1,000 ton/day of be delivered to the final disposal sites. In the case that waste generated in the target region exceeds 1,000 ton/day, the excess amount is planned be processed at a different final disposal site within the region. Furthermore, in an unlikely event that the waste intake volume does not meet 1,000 ton/day, fixed costs out of service fees (i.e. for initial cost) will be fully paid, while variable costs will be linked to actual waste volume to the sites. Exact amount of service fees will be determined upon negotiation at the bidding stage based on proposals from a bidder. Variable costs of service fees will be liked to inflation based on price index. This will be stipulated in a draft contract document, and then exact stipulation will be drawn in a contract between West Java Provincial Government and SPC.

ii) Revenue from Plastic Sales

In Indonesia, the product value of plastic waste is high, trading at 350–2,000 Rp/kg in the marker. The estimated selling price is 800 Rp/kg and it is assumed that approximately 40% of the plastic wastes delivered to the final disposal site are at sale quality. As indicated in Chapter 5 and 6, through the sorting process in the intermediate facilities, if approximately 121 tons/day of high quality plastic are sold, approximately 4,300 USD/day (assuming 1,000 ton/day of waste intake volume, this value equates to approximately 4.3 USD/ton) of income can be expected.

West Java Provincial Government agrees to take-over such plastics from SPC and pay a fixed amount regardless its quantities, qualities and market prices.

Conditions Related to Cash Outflow

i) Capital and Operational Costs Related to the Use of the Access Road, Access Road Construction Costs

- Regarding Nambo, costs related to the compensation to PT. Indocement (capital and operational expenses related to RDF) will be entirely responsible to the West Java Provincial Government. Therefore, costs pertaining to RDF are not included in the SPC cash flow model.
- Access road construction costs for both Nambo and Legok Nangka are not included in the public private project scope. Budget is already allocated by the West Java Provincial Government, therefore not included in the public private project costs.

ii) Temporary Storage Space for Covering Soil, and Provision of Covering Soil

At the time of the Interim Report, due to site limitations, the disposal of soil from site excavation during the construction phase, and further purchase of covering soil at the time of operation, was proposed. However, it is clear that this strategy is not economical due to the increase in costs, and upon discussion with the Indonesian counterparts, the follow measure were concluded.

- In terms of Legok Nankga, the West Java Provincial Government has agreed to provide temporary storage space for excavated soil (to be utilized later as covering soil) and necessary covering soil. The costs included in the project costs are transport costs to and from the temporary storage space (assumed to within 1 km of the final disposal site).
- In terms of Nambo, the southern 60 ha within the site boundary will be utilized as temporary storage space for excess excavated soil. Hence, cover soil and extra temporary space outside of the site boundary is not necessary.

iii) Compost Takeover

For both Legok Nangka and Nambo, the West Java Provincial Government has agreed to take over the full amount of soil enhancer product (compost) [3] produced at the compost facilities. Furthermore, costs pertaining to the transport of such products will be absorbed by the West Java Provincial Government.

iv) B3 (Hazardous Waste) Takeover

By law and regulation, hazardous wastes and industrial waste (B3) are not permitted to enter the proposed final disposal site. However, in the case that such wastes are delivered to the final disposal site, the West Java Provincial Government has agreed to take over such waste at their own expense.

v) Workers for Sorting Facility

Costs related to waste sorting employees account for a large proportion of O&M costs, and its fluctuation has a relatively significant impact on the project cash flow. This project will hire scavengers and local residents as formal employees, and pay a salary with considerations of

[3] Accounts for approximately 30-36% by weight of the total waste intake. The West Java Provincial Government has agreed to be responsible for the issues such as risks pertaining to quality assurance due to the inclusion of hazardous wastes, and the acceptance of products, which are produced in large quantities daily.

minimum wage. On the other hand, employees are not permitted to sell valuable waste products sorted on site.

vi) Large Scale Renovation Costs

This project takes the form of BTO (Build Transfer Operate), hence large-scale renovation costs will be borne by the West Java Provincial Government the West Java Provincial Government basically agrees it.

vii) Construction Costs for Leachate Treated Water Discharge Pipe

The pipeline required to discharge the lechate treated water to a nearby river meeting the environmental standards, are estimated to be approximately 10-11 kilometers for Legok Nankga (to Pancat River) and approximately 2.5 kilometers for Nambo (Leunci River). Similar to the construction of the access road, the construction costs for the pipeline are not included in the project scope, but this will be constructed by the West Java Provincial Government (by their own budget). West Java Provincial Government will make a detail plan (cost estimation, locations) in the next stage.

viii) Amortization

The project will take the structure of either BOT (Build Operate Transfer)[4] or BTO (build Transfer Operate), hence, amortization of assets will be fully completed within the project period. Specifically, the total asset will be amortized at the same schedule as the principal repayment schedule.

ix) Costs Related to Waste Collection, Transport, and Delivery

The West Java Provincial Government is responsible for the management and financing of the costs related to waste collection, transport and 3R (issues upstream from the project scope).

(2) Criteria for Project Realization and Evaluation

The evaluation criteria for project realization, presented by the Indonesia counterparts are as follows.

i) Service Fee

The initial service fees suggested to be reasonable by the Indonesia counterparts were approximately USD 12/ton. However, as there is no precedent of a PPP sanitary landfill in Indonesia, continuous stakeholder meetings have been held to promote a better understanding of the necessary project costs and technologies required to meet the socio-environmental standards of the ODA loan. Though the continuous negotiation between the Indonesia counterparts and the survey team up until now, the Indonesia counterparts have suggested a threshold level of less than USD 20/ton for the service fee.

ii) Public-Private Ratio of Capital Costs

The basic idea the financial burden of the private portion must be covered by the service fee payment capacity of the West Java Provincial Government, and any exceeding portion will be financed by the Government of Indonesia through the use of an ODA loan. The initial public private ratio suggested to be reasonable by the Indonesia counterparts was 50:50. However, considering the nature of the construction of a sanitary landfill, both parties have recognized the inadequacy of the 50:50 ratio. Considering the fact that the construction costs for the final

[4] The Ministry of Finance Ordinance (MoF Decree No 248/KMK.04/1995) stipulates the approval of straight-line and accelerated depreciation within the project life for BOT projects.

disposal site (public financing portion) and the intermediate treatment facility (private financing portion) are significantly different, in the case that the construction cost must for both the final disposal site and intermediate treatment facility to be equal, the capacity of the final disposal site facilities must be reduced, thereby shortening the project life.

As a result of repeated discussions, the Indonesian counterparts have agreed to alleviate the criteria for 50:50 public private ratio, however, a certain level of public private ratio is to be achieved.

iii) Project Profitability and Returns to Private Investors

The proposed capital expenditure for the private portion (construction of sorting and compost facilities and purchase of heavy equipment and machinery) is to be financed 10% by equity and the remaining 90% by a loan from a policy-based financing such as PT SMI. In addition, equity investments will also cover initial soft costs (such as SPC incorporation costs, insurance for construction phase, and contingency fees) which equates to approximately 10% of the capital expenditure of the private portion.

In this proposal, dividend of approximately 8% (same rate at the interest rate for the debt financing portion) will be paid out to the investors annually, and the full equity amount will be paid back to the investors in the last year of the project. At least, those could be requirements by the investors.

(3) Optimal Project Structure (Financial Analysis)

The preconditions mentioned above have been applied as inputs to the financial model for analysis. The results are as follows.

- Service fees of USD 18.65/ton for Nambo and USD 19.74/ton for Legok Nangka have been achieved
- The public private ratio for Nambo is 68:32 and for Legok Nangka 75:25
- The results suggest that the by satisfying the preconditions, it is possible to achieve the evaluation criteria, indicating the optimal project structure. Furthermore, the preconditions have been agreed upon repeated discussions with the Indonesian counterparts, and have been formulated based on technical, socio-environmental, and financial analysis and assessment.

Table 12-1 Optimal Project Structure Based on Financial Analysis

Item	Nambo	Legok Nangka
Revenues from PFI Service Fees	18.65 $ / ton	19.74 $ / ton
Revenues from Plastic Sales	4.0 $ / ton	4.0 $ / ton
Project Life	16.7 years	14.2 years
PPP/ODA Ratio (CAPEX)	26.48 M USD / 57.15 M USD	26.53 M USD / 80.78 M USD
PPP/ODA Ratio	32% / 68%	25% / 75%
CAPEX (ODA)	57,152,337 USD	80,782,742 USD
CAPEX (PPP)	26,482,223 USD	26,532,223 USD
OPEX (PPP)	73,187,587 USD	65,608,051 USD
TOTAL	156,833,147 USD	172,923,016 USD
Project IRR for Private	9.25%	9.33%
Equity IRR for Private	7.30%	7.22%
DSCR (average)	1.35	1.35

Source: Survey Team

Furthermore, the preconditions and criteria for evaluation are indicated as below.

Table 12-2 Precondition and Criteria for Evaluation

Precondition and Criteria	Nambo	Legok Nangka	Unit
Revenues from PFI Service Fees	18.65	19.74	USD/ton
Revenues from Plastic Sales	4.00	4.00	USD/ton
Waste Intake Volume	1,000	1,000	ton/day
Days of Operation	360	360	days/year
Project Life	16.7	14.2	Years
Debt Service Period	16.0	14.0	Years
Debt Interest Rate	8	8	%
Corporate Tax Rate	25	25	%

Source: Survey Team

The following table shows the cash flow total based on the preconditions and the capital and operational expenses.

Table 12-3 Cash Flow Total

Unit: M USD

Cash Flow Total	Nambo	Legok Nangka
Revenues from PFI Service Fees	107.45	99.47
Revenues from Plastic Sales	23.04	20.16
Net Operating Income	130.49	119.62
Net Operating Expenses	−73.19	−65.61
Net Operating Cash Flow	57.30	54.02
Investment Cash Flow	−26.48	−26.53
Financial Cash Flow	30.81	27.49
Debt Financing	−21.12	−18.55
Equity Financing	5.19	5.38
Free Cash Flow After Financing	14.89	14.31
Tax	−3.06	−2.92
After Tax Cash Flow	11.83	11.40
Dividend	6.64	6.02
After Dividend Payout (Full Equity Investment Amount)	5.16	5.20

Source: Survey Team

(4) Summary

The project possibility in terms of financial feasibility as a PPP project has been analyzed in this chapter. The project can be realized assuming the following conditions are met. Therefore, it is necessary to coordinate and discuss the following issues with the Government of Indonesia and JICA.

Challenges to Project Realization

i) Service Fee

It is essential that the Indonesia counterparts have a solid understanding of the costs required to construct and operate the sanitary final disposal site. Furthermore, it is necessary that the Government of Indonesia consents to the setting of the service fee which will cover the costs mentioned above.

ii) Public Private Division of Project Scope

Understanding the nature of the final disposal site construction, flexibility of the public private ratio is required from the Government of Indonesia.

iii) Relationship with PT. Indocement (Nambo)

Regarding the requirements by Pt. Indocement for the handover of waste to their cement factory, the Government of Indonesia must consider technical and financial possibility of. A realistic consensus between Pt. Indocement and the West Java Provincial Government based on the above mentioned considerations must be made.

12.4.2 Project Implementation Structure

(1) Public-Private Division of Project Scope

While the public market demand for the proposed project is high, as the initial investment cost is large, the financial profitability of the whole project is not high enough for the private sector to enter alone. Thus, it is difficult to establish this project with private finance alone without the integration of an ODA loan. The scope and content of the project facilities (integrated intermediate treatment facility and final disposal site) have been identified and the project profitability has been analyzed based on calculating the required funds for each scope. The project has been segregated into the public project scope which is financed by the ODA loan, and the private project scope for review.

Based on the above mentioned review, the construction and initial O&M costs (procurement of machinery) of the integrated intermediate treatment facility (sorting facility and compost facility) will be financed by private financing. The sanitary landfill, and the leachate treatment facility will be constructed by the Indonesia Government through and ODA loan[5]. In terms of the operation and maintenance of the facilities, a special purpose company (SPC) will be established to operate the whole waste treatment facility.

The concept of the project is shown below

[5] With financing from the West Java Provincial Government, the Detailed Design has been completed for the 5.5km portion of the Nambo Access road to be constructed. Tender process for the construction works is in process. Similarly, the D/D for the Legok Nangka Access road has alreadybeen completed and tender process for construction works is in process.

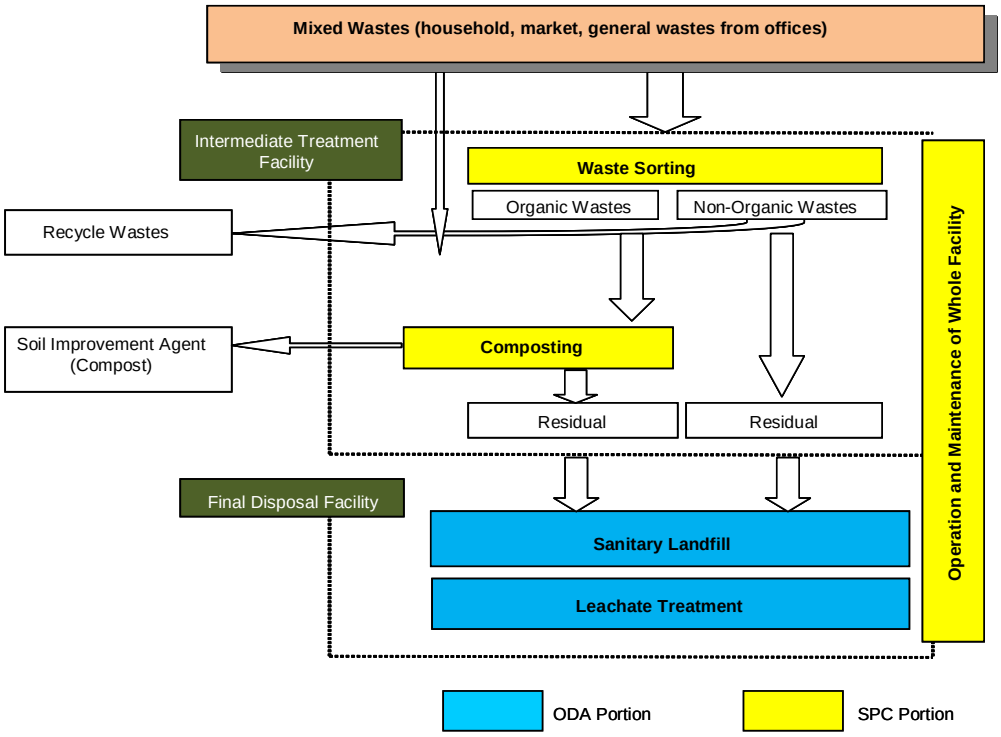


Figure 12-7 Public-Private Division of the Project

(2) Public-Private Division Project Costs

The public-private division for the total project costs for Legok Nangka and Nambo are as follows.

Table 12-4 Total Capital Costs

Capital Expenditure	**Nambo**			**Legok Nangka**		
Landfill Construction	42.23	M USD	ODA	59.51	M USD	ODA
Leachate Treatment Facility Construction	8.77	M USD	ODA	15.44	M USD	ODA
Common Area Construction	6.15	M USD	ODA	5.83	M USD	ODA
Sorting Facility Construction	17.27	M USD	Private	17.32	M USD	Private
Compost Facility Construction	7.63	M USD	Private	7.63	M USD	Private
Landfill Heavy Equipment	1.52	M USD	Private	1.52	M USD	Private
Common Area Heavy Equipment	0.60	M USD	Private	0.60	M USD	Private
Capital Expenditure (Public Private Ratio)	**Nambo**			**Legok Nangka**		
ODA Total (Public Portion)	57.15	M USD	68%	80.78	M USD	75%
PrivateTotal	27.02	M USD	32%	27.07	M USD	25%
TOTAL	**84.17**	**M USD**	**100%**	**107.85**	**M USD**	**100%**

Source: Survey Team

Table 12-5 Total Annual Operation and Maintenance Costs

Annual O&M Costs	**Nambo**			**Legok Nangka**		
Sorting Facility	1.61	M USD/yr	Private	1.61	M USD/yr	Private
Compost Facility	0.87	M USD/yr	Private	0.86	M USD/yr	Private
Landfill	1.02	M USD/yr	Private	1.15	M USD/yr	Private
Leachate Treatment Facility	0.72	M USD/yr	Private	0.68	M USD/yr	Private
Common Area	0.09	M USD/yr	Private	0.09	M USD/yr	Private
Insurance	0.22	M USD/yr	Private	0.23	M USD/yr	Private
O&M Costs Total	**4.53**	**M USD/yr**	**Private**	**4.62**	**M USD/yr**	**Private**

Source: Survey Team

(3) Project Plan

Project Plan for the Private Portion

1) An SPC will be established with equity from members of this consortium, and the project will be operated using a PFI scheme (BOT or BTO scheme).

2) Operating revenues shall be a fixed commission fee (service purchase scheme) under the PFI Project contract between the West Java provincial government and the SPC.

3) Revenues from the sale of plastic wastes will be considered as revenues to the SPC. However, risks pertaining to the sale of plastics (i.e. market price fluctuations, seasonal and inter-annual changes in waste composition) are expected, and payments for fixed amounts must be determined in the contract. Furthermore, revenues from CDM will generally be considers as revenues to the SPC, however due to its high uncertainty (such as possibility of approval and future availability of the Kyoto Protocol), CDM revenues are not included in the financial analysis at this time.

4) The construction period (including detailed design) is scheduled for 24 months. The SPC will commence operation of the facility. In the case of Legok Nangka, the SPC will operate the facility for 14 years and transfer to the West Java Provincial Government in year 15. In the case of Legok Nangka, the SPC will operate the facility for 16 years and transfer to the West Java Provincial Government in year 17.

Third parties which are hired by West Java Provincial Government will assess condition of assets in each year. At the last year of concession period, assets transfer from SPC to Public will be made after final assessment by them.

Project Plan for the Public Portion

1) For the public portion utilizing the ODA loan, the Ministry of Public Works (MPW) will be the implementing agency. MPW will contract consulting services (preparation of tender documents, bidding assistance, and construction supervision) with a consulting company. Furthermore, MPW will sign a construction contract with a construction company (assuming a member of the SPC), who will carry out the construction of the landfill and leachate treatment facility under the Design Build method.

2) The West Java provincial government will commission the services and project license pertaining to the whole waste treatment facility upon the PFI contractual agreement with the SPC.

3) West Java Provincial Government will bear liabilities related to service fees to SPC across budgetary/accounting year. To secure the long term budgetization, Bappeda as a member of the budget committee of West Java parliament (TAPD) will submit proposal to TAPD, ii) TAPD assesses the necessity in detail, and iii) finally step in to the process of approval in the parliament.

4) The provincial government (each municipality) bears the responsibility of regional waste collection and pays the fixed fee to the SPC commissioned to perform the waste disposal services. The risks associated with the change in demand of waste (quality and quantity) are inevitably borne by the West Java provincial government, and the SPC will not bear any revenue risk.

(4) Project Implementation Structure

Project Implementation Structure for the Private Portion

Based on the PFI Project Contract with the West Java Provincial Government, the SPC will operate and maintain the whole final disposal site (intermediate treatment facility and final disposal site). An operation company to perform the daily operations of whole final disposal site is expected to be outsourced to a local company. An appropriate company shall be located during this feasibility study.

The SPC will commission work to specialized companies (such as a final disposal site management company and intermediate plant engineering company in Japan) within the consortium, which will supervise the management of the operation company for a certain period of time. The contents of the commission are: 1) operation and maintenance training, 2) supervise important maintenance works, 3) operation and maintenance support services (including response to accidents and failures).

Project Implementation Structure for the Public Portion

For the public portion leveraging the ODA loan, the Directorate General of Human Settlement (Ministry of Public Works) is the implementation agency. The mentioned department has the responsibility to manage and supervise waste operation and management of the whole Indonesia, and provides technical advice and project approval to final disposal sites planned by the local governments. The detail of the department is indicated in Chapter 2.2.1.

For the private portion, the West Java Provincial Government is a contract implementation agency, and the SPC is expected to become the project implementer. Waste management will be handles by the regional construction bureau of the Ministry of Public Works, Human Settlement and Hosing Agency, West Java Provincial Government: KIMRUM. The detail of the bureau is indicated in Chapter 2.2.2.

The conceptual image of the project implementation structure is shown below.

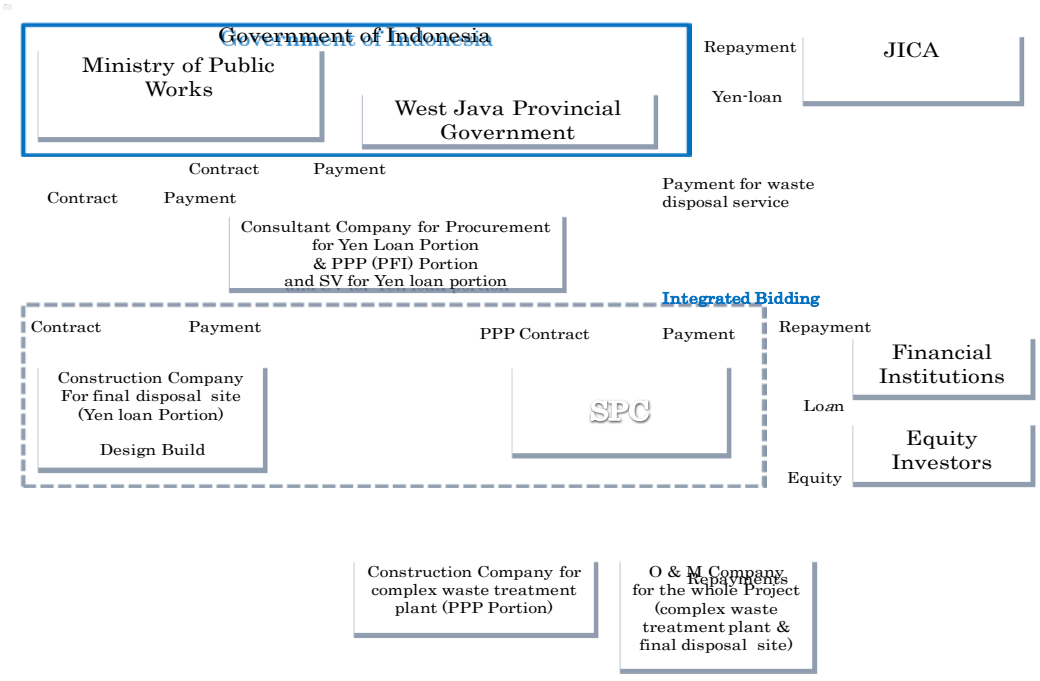


Figure 12-8 Project Implementation Structure

(5) Counterpart Implementation Agencies Capability and Correspondence

As this is the first sanitary final disposal site in Indonesia, it is ideal to proceed the project with the Ministry of Public Works leading and cooperating with the West Java Provincial Government in terms of the technical aspects. As both entities do not possess bountiful knowledge and experience of sanitary final disposal site and intermediate treatment facility, capacity building of both institutions will be required in the future.

Furthermore, in terms of PPP implementation, strengthening of the systems for appropriate bidding in the West Java Provincial Government, and management of project operation will be necessary.

12.4.3 Procurement of the SPC Portion and the Final Disposal Site Construction

The study team proposes that a joint tender system (integrated assessment) for two packages - the procurement of the PPP Project Contract (to be signed between the SPC and the West Java Provincial Government) and the procurement of the public (ODA) portion for the construction of the final disposal site.

The integrated assessment will allow for a comprehensive combined valuation of the public tender of the construction of the final disposal site which will be financed by public (ODA) funds and the public tender of the construction of the intermediate treatment facility and the operation of the whole facility financed by private funds under the PFI contract. That is, both bidding processes will conducted simultaneously, and the bidder with the highest combined points will be selected.

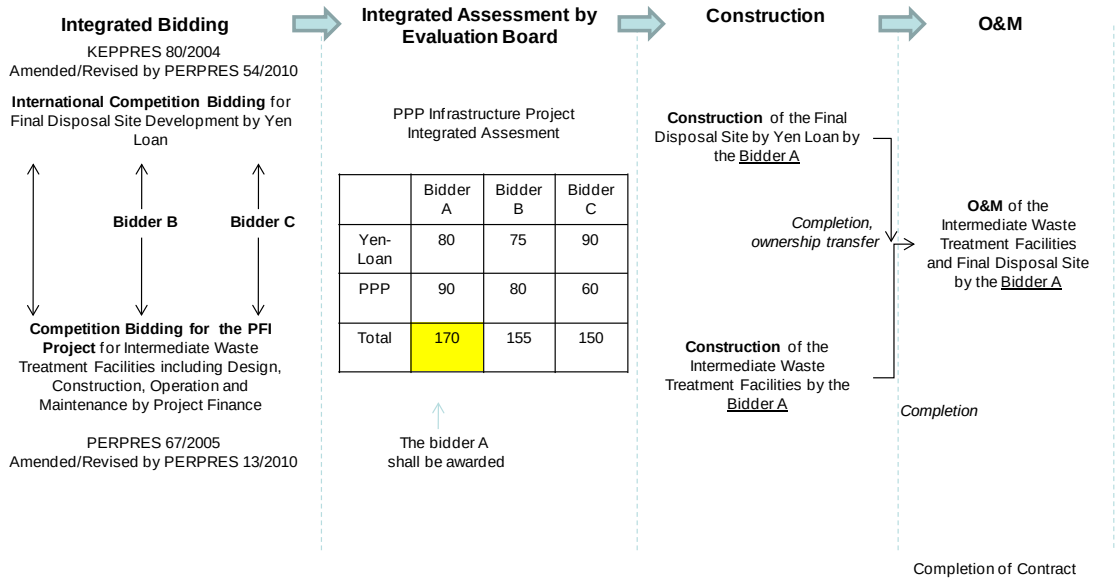


Figure 12-9 Integrated Assessment Concept

While he SPC will be responsible for the operation of the whole facility including the landfill and leachate treatment facility constructed by public financing, in the case that the SPC does not construct the mentioned facilities, the SPC must bear the environmental pollution risks which may be likely to occur do to improper construction of the leachate treatment facility or the impermeable liner sheet. The integrated assessment allows for the final bidder to be responsible for both of the projects, allowing for risk management and smooth implementation of the project.

From a legal perspective, as a result of reviewing the relevant laws/regulations including the Indonesia Presidential Decree on Government Procurement (No.54/2010), there are no regulations prohibiting an integrated assessment, vis-à-vis, there is also now regulation allowing for it either (see chapter 9.3). However, it is understood that there is room for negotiation regarding the integrated assessment with the Government.

The possibility for an integrated assessment process has been discusses with JICA, and have been indicated that an official answer to its compliance with the JICA ODA loan procurement guideline will be given upon JICA's internal review after the acceptance of the process is confirmed by the Indonesia side[6].

Furthermore, the possibility of including the procurement support consulting services (preparation of tender documents and bidding assistance) for the SPC portion to be included in the ODA loan has been inquired to JICA. JICA has responded that it is possible to include ODA loan. However, in the case that only the SPC is subject to the procurement, the JICA procurement guideline may not necessarily be applied.

12.4.4 Project Implementation Schedule

The project implementation schedule proposed is shown in Figure 12-10.

[6] Basically, West Java Provincial Government agrees to introduce integrated bidding.

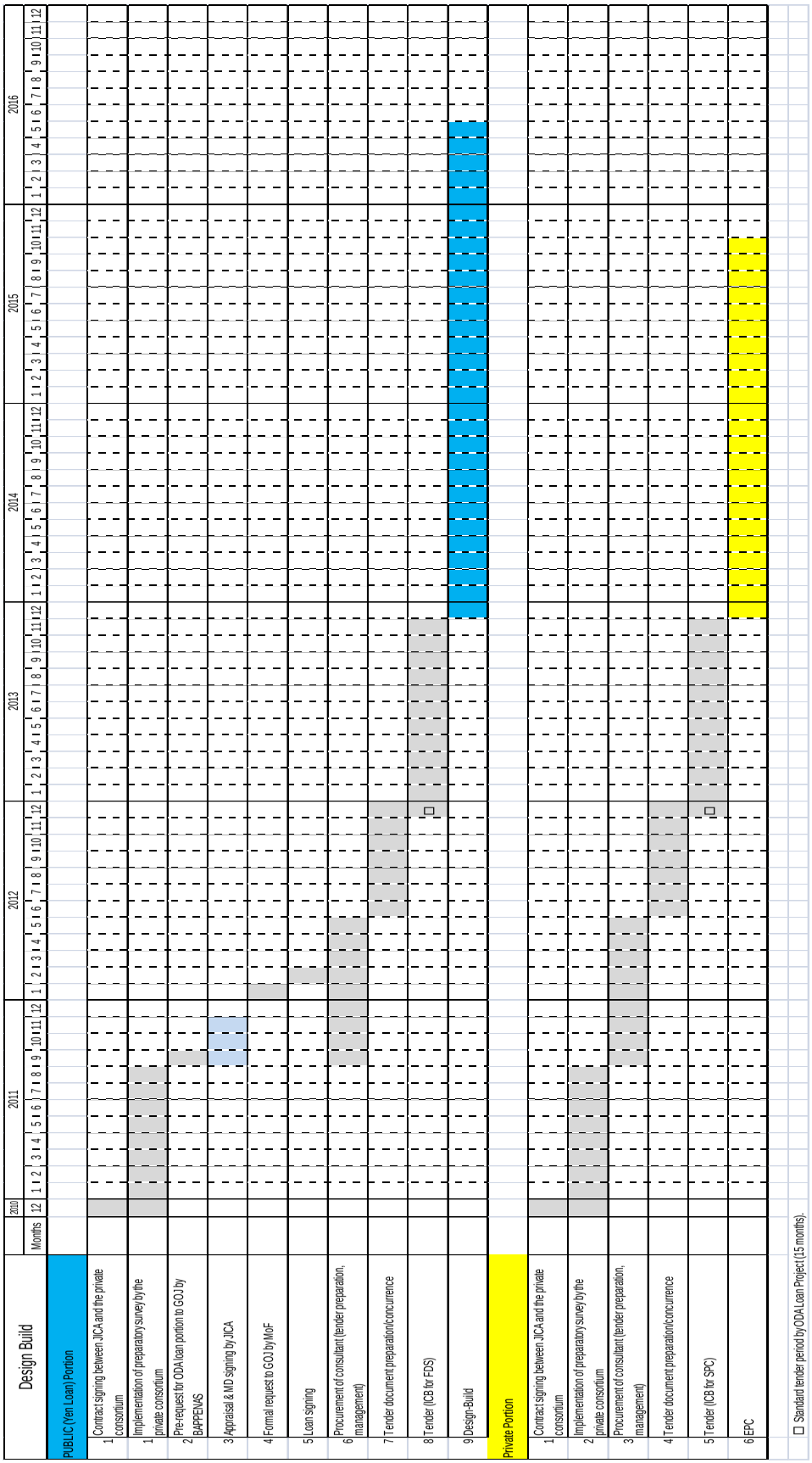


Figure 12-10 Project Implementation Schedule

12.5 Economic Evaluation

The proposed overall final disposal site and waste treatment site is economically viable and acceptable since the proposed system would have major positive economic benefit stemming from various aspects of social, economic, agricultural and industrial viewpoints as shown below.

Table 12-6 Expected Economic Benefits

Item	Expected Benefits
Secure the urban sanitary environment	As aforementioned in the chapter 3, the residual capacity of the final disposal site is quite limited in the West Java Province. This project can provide continuous service of final disposal site for 15 to 20 years, which will secure the urban sanitary environment in the target area. - This project will contribute to improve living environment of 15.71 million people[7], the population of the waste collection area. - This project contributes to urban aesthetic environment of Bandung city, which called as Paris in Indonesia. Bandung is major destination from Jakarta for weekend vacation, which will increase number of beneficiaries. - This project also contributes to urban aesthetic environment of Bogor city, which were awarded[8] as first destination of city tourism of Indonesia in 2010. The number of tourist per annum to Bogor was 1.8 million, including 60 thousand of foreigners.
Benefit for Shifting to sanitary landfill technology from open dumping	Shifting from open dumping method to sanitary landfill technology can minimize the external diseconomy to the surroundings of the FDSs. Consequently, this project will contribute to sustain environment as well as land price. The expected benefit for site in Legok Nangka is small because it is remote from area of habitation, and its population in surrounding is few, and its agro-productivity is not so high, . The Nambo site locates near to an industrial park.
Prevention of Pollution to Ground Water by Lechete Control	This project contribute to sustain the water environment quality by i) installation of multi leachete treatment system , and ii) install of double impermeable liner to avoid seepage pollution to ground water. Comparing to the ordinal methodology, this project can avoid the negative impact to the contamination. Note that there are fish pond and a headspring for agriculture near the LN site, and the ordinal technology will expand negative impact.
Benefit from proper drainage control	This issue was not considered in the Pre-FS. This study considered to facilitate storm water control reservoir in the site to avoid overflow in the drainage collection system or flood in the downstream after such a major development. In the LN site, the capacity of downstream is too small to manage the storm water, therefore, positive benefit can be expected. In Nambo site, similar positive benefit can be expected.
GHG reduction by installation of Compost	Please refer to CDM section in Chapter 5 and 6.

As a reference, a quantitative analysis based on a partial benefit and the following assumptions was conducted. The expected EIRR was 14.1%, which can expect an adequate feasibility as yen-loan project.

[7] ”Peta Indeks Wilayah 2010”
[8] http://www.bogor.net/index.php?option=com_content&view=article&id=3139:bogor-terpilih-jadi-kota-pariwisata&catid=43:nasional&Itemid=62

Assumptions

- The benefit of "Secure the urban sanitary environment" was quantified into monetary term. Without this PPP project, it could be assumed that there is no FDS site for the target area, the waste collection will be paralyzed, and the urban sanitary environment would be worsen. With this PPP project, FDS sites for the target area will be secured, the collection system will be on work, and it is assumed the average benefit can be USD 2 (Rp 17,000) per person per year. This benefit will be generated to i) 60% of population in the target area, and ii) tourist into the area (assumed 3 million[9] customers per year), and it will grow annually by 2%. This benefit will generate for 14 years, referring to life of the LN FDS.
- Regarding the assumption for the economic benefit (Rp.27,000 per year per person), it is assumed that the person per household is 3.5 in 2010[10], and economic benefit from the environmental aesthetic improvement per household per month is Rp 8,000. Regarding the economic benefit per household, a survey[11] for Willingness to Pay (WTP) for sewerage system in Jakarta and Jogjakarta was referred to. It reports that WTP of Jakarta including low income group was Rp 20,000 per household per month, and WTP in Jogjakarta was Rp 3,000 to 9,000. These assumptions can be justified by taking the WTP for both sites, geographical location and economic growth into consideration.
- The costs were accounted for both Legok Nangka and Nambo, including SPC investment and Yen loan. The initial costs were generated in the first three years (2012 to 2014). The Nambo site has 16.7 years for its project life, therefore, a residual value of two years was considered.
- The cash flow and EIRR can be calculated as follows. The project period was evaluated for 17 years, including 3 years for construction and 14 years for operation.

Table 12-7 Cost, Benefit and EIRR

Year	Cost	Benefit	Summary
2012	−62,619,843		−62,619,843
2013	−62,619,843		−62,619,843
2014	−65,774,760		−65,774,760
2015	−9,155,232	40,637,383	31,482,151
2016	−9,155,232	41,390,130	32,234,898
2017	−9,155,232	42,157,933	33,002,701
2018	−9,155,232	42,941,092	33,785,860
2019	−9,155,232	43,739,913	34,584,681
2020	−9,155,232	44,554,712	35,399,480
2021	−9,155,232	45,385,806	36,230,574
2022	−9,155,232	46,233,522	37,078,290
2023	−9,155,232	47,098,193	37,942,961
2024	−9,155,232	47,980,156	38,824,924
2025	−9,155,232	48,879,760	39,724,528
2026	−9,155,232	49,797,355	40,642,123
2027	−9,155,232	50,733,302	41,578,070
2028	−9,155,232	51,687,968	42,532,736
2029	−2,304,933	52,661,727	59,512,027
		EIRR =	14.0%

Source: Survey Team

[9] 1.8 million arrivals to Bogor are estimated
[10] Hartanto Wend, 2010 Indonesia Population Census
[11] JBIC, Financing Affordable Water and Sanitation System Study Report, 2006

12.6 Performance and Outcome Indices

The performance and outcome indices for this project were designated as follows. Two references from JICA (JICA Evaluation Guideline, June 2010 and JBIC Performance and Outcome index reference, 2009) were referred to on index designation.

Table 12-8 Performance Index

Index	Objectives	Target	How to collect
Tonnage of received wastes	This project aims to provide capacity of waste receiving continuously	Keep 1000 tonne per day as receiving capacity	The SPC keeps records of its waste receipt
Balance of Landfill site capacity	This project provide function of final disposal site for more than 10 years	Designated as shown in the next table	The SPC will estimate the balance of landfill volume every month by simplified survey.
BOD Concentration (at entree, exit, ratio of reduction)	This aims to evaluate performance of treatment facility	To achieve 95% reduction	SPC will keep record of sampling everyday

Source: Survey Team

The target for the balance of landfill site capacity was designated as follows;

Table 12-9 Performance Index

(In Cubic Meter)	Initial	After two years operation	After seven years operation
Legok Nangka	1.73 million	1.48 million	87 million
Nambo	1.73 million	1.55 million	1.11 million

Source: Survey Team

Table 12-10 Outcome

Index	Objectives	Target	How to collect
Sanitary Landfill Coverage = (tonnage of waste delivery to Sanitary landfill Site from the target area) / (tonnage of waste generation in the target area)	Promote the waste treatment by sanitary landfill in the target area	80% after the operation start	Estimate by using statistics from KIMRUN and SPC
Sanitary Landfill Coverage = (tonnage of waste delivery to Sanitary landfill Site from the target area) / (tonnage of waste generation in the target area)	Promote the waste treatment by sanitary landfill in West Java	50% after the operation start	Estimate by using statistics from KIMRUN and SPC

Source: Survey Team

13. Perspectives

In the above Chapter, this study has proposed a project structure implemented as PPP project. However, there are possibilities that this proposal is not meet conditions which the Government of Indonesia could make a final decision (i.e. project life, financial capability of WJPG to pay service fees). And therefore, it might be possible that the PPP project structure proposed by Japanese companies JV is not be realized.

In this chapter, therefore, first possibilities of expansion of the project life are examined. Then, comparative analysis for financial feasibility between Public Works and PPP projects are tested, because, to some extent, the PPP project structure would be difficult to realize.

13.1 Expansion of Project Life

13.1.1 Technical Study for Project Life Expansion

According to our proposal, waste buried into the landfill consists of the following kinds of waste (refer to Figure 5-3, and Figure 6-4):

- Non-recyclable plastic and Other waste (Textile, Rubber, Nappies, and etc.) sorted in the Sorting unit
- Residue separated in the Composting unit

Technical study has been carried out in order to expand the project life by reducing the volume of these wastes.

(1) Compaction

According to our proposal, 25ton landfill-compactor is used in order to compact waste when it is buried into landfill. This type of landfill compactor has been used at almost of the Japanese landfills in order to expand their project life. Its compaction pressure is very big (about 8 MPa). The main specification is as follows:

- Type: 816F2
- Operating weight: 23,050 ton
- Engine output: 173 kw
- Size: 7,855(L) x 3,650(W) x 3,805(H)

By applying this landfill compactor, compaction ratio higher than two would be obtained and makes it possible to increase the waste's final density to the following values:

- In case that waste's main component is combustible: density up to 0.6
- In case that waste's main component is incineration ash: density up to 0.9

(Note: these values are based on average data from Japanese landfill.)

In the Flow-sheet/material balance (Figure 5-3 and 6-4), we adopted density of 0.6 since its main component is combustible.

Next, we introduce the other system in order to compact the waste. The following specification is one of the efficient capacity compaction machineries in Japan.

- Type: MAC110/1
- Compaction weight: 170 ton

- Motor: 92 kw
- Size of pale: 1,100mm (W) x 1,100mm(L)
- Capacity: 26–33 t/h
- Size: 11,960(L) x 6,450(W) x 4,455(H)

Compaction pressure equals to 1–2 MPa which is much lower than 8 MPa of the landfill compactor.

Another compaction system is one applied in municipal-waste transfer stations. Waste is filled into container by being compacted. The purpose is cost reduction for transportation of waste to landfill. This system has been already adopted in Jakarta also. Its compaction ratio (design value) is two in case that waste density before compaction is 0.25. Its main specification is as follows:

- Compaction weight: 60 ton
- Theoretical capacity: 550 m^3/h
- Motor; 30 kw x 2 + 11 kw x 1

As described here above, since waste is thoroughly compacted by the landfill-compactor that we have proposed, "further compaction" is difficult.

(2) Treatment or Utilization of Non-Recyclable Plastic

In this survey, we carried out the sampling and analysis of waste. Based on this result, "recyclable plastic" such as PET is recycled in our proposal (refer to Figure 5-3 and Figure 6-4). On the other hand, according to the analysis result, "plastic" includes not only "recyclable plastic" but also "other plastic". It is difficult for us to judge if the "other plastic" is recyclable or not. Therefore, in our material balance sheet (refer to Figure 5-3 and Figure 6-4), it is not recycled but buried into the landfill as "non-recyclable plastic". The best solution for this type of plastic is to incinerate or utilize as "RDF" after appropriate treatment.

(3) Incineration

According to our material balance (refer to Figure 5-3, and Figure 6-4), the amount of waste buried into the landfill is described in Table 13-1.

Table 13-1 Amount of Waste Buried into the Landfill (t/d)

	Legok Nangka	Nambo
Plastics	58.5	44.0
Rubbers, Leathers	4.9	5.3
Textiles	73.6	38.4
Glass	9.2	12.4
Nappies	50.4	66.3
Metals	0.6	0.8
Hazardous	0.4	0.1
Others	5.4	5.6
Total	203	173

Source: Survey Team
Note: Amount of plastic is summation of non-recyclable plastic and plastic (<50mm) included in residue from composting facilities.

This table shows that main composition of waste to the landfill is combustible. Therefore, the incineration treatment would be the best for the purpose of volume reduction.

(4) Conclusion

In this section, we carried out the study to reduce the volume of waste buried into the landfill. As a conclusion of technical study, incineration treatment would be the most suitable technology from the view point of volume reduction, because the main composition of waste is combustible, i.e. plastics, textiles and nappies.

The compaction pressure of the alternative way to reduce the volume, the compactor machinery or the compaction system applied in municipal-waste transfer stations, is lower than that of the landfill compactor.

And, as the matter of the non-recyclable plastic, it is not economical to build a RDF plant, since the volume of non-recyclable plastic is too small. The incineration treatment is also the most suitable for non-recyclable plastic.

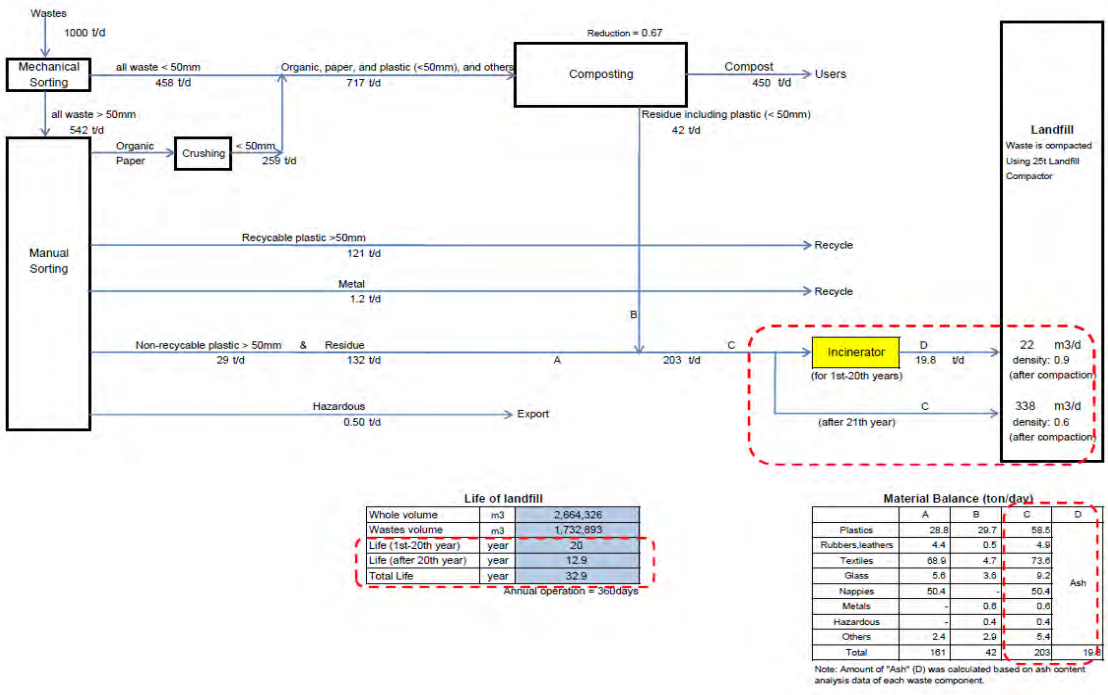
- Legok Nagka : 29 ton/day
- Nambo : 27 ton/day

As a conclusion of technical study, incineration treatment would be the most suitable technology from the view point of volume reduction.

13.1.2 Feasibility Study in Case that Incinerator is Introduced

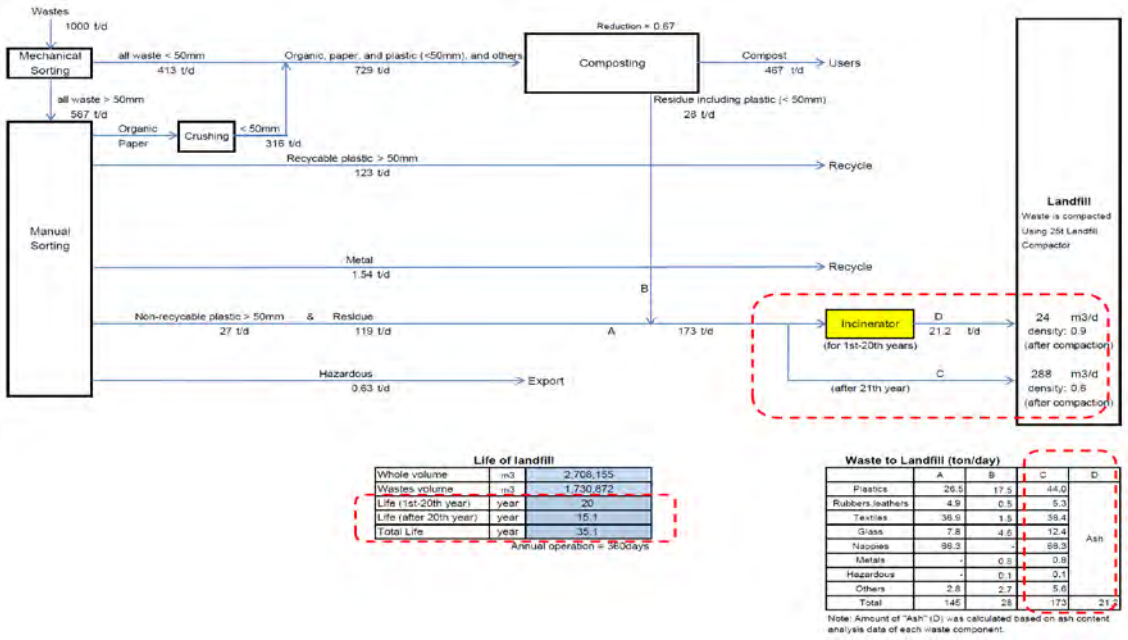
(1) Material Balance and Project Life

Material balance is as shown in Figure 13-1(1) and (2), where project life also are described.
LN



Source: Survey Team

Figure 13-1 Material Balance and Project Life of Landfill in Case that the Incineration Facilities are Installed (Legok Nangka)



Source: Survey Team

Figure 13-2 Material Balance and Project Life of Landfill
In Case that the Incineration Facilities are Installed (Nambo)

The following time schedule is assumed considering that the useful life of incinerator is 20 years.

- 1st –20th year: Waste is buried into the landfill after incineration treatment.
- After 21st year: Waste is buried into the landfill without incineration treatment.

Ash content data in waste, which was obtained by the sampling and the analysis, was used for the material balance calculation.

The summary is as follows:

Table 13-2 Waste volume, Project Life (Legok Nangka)

Period	Incinerator	Waste to landfill	Life	
1-20th year	Operating	20 t/d (22m3/d)	20 years	32.9 years
After 21st year	After useful life	203 t/d (338 m3/d)	12.9 years	

Source: Survey Team

Table 13-3 Waste volume, Project Life (Nambo)

Period	Incinerator	Waste to landfill	Life	
1-20th year	Operating	21 t/d (24m3/d)	20 years	35.1 years
After 21st year	After useful life	173 t/d (288 m3/d)	15.1 years	

Source: Survey Team

(2) Outline of the Incineration System

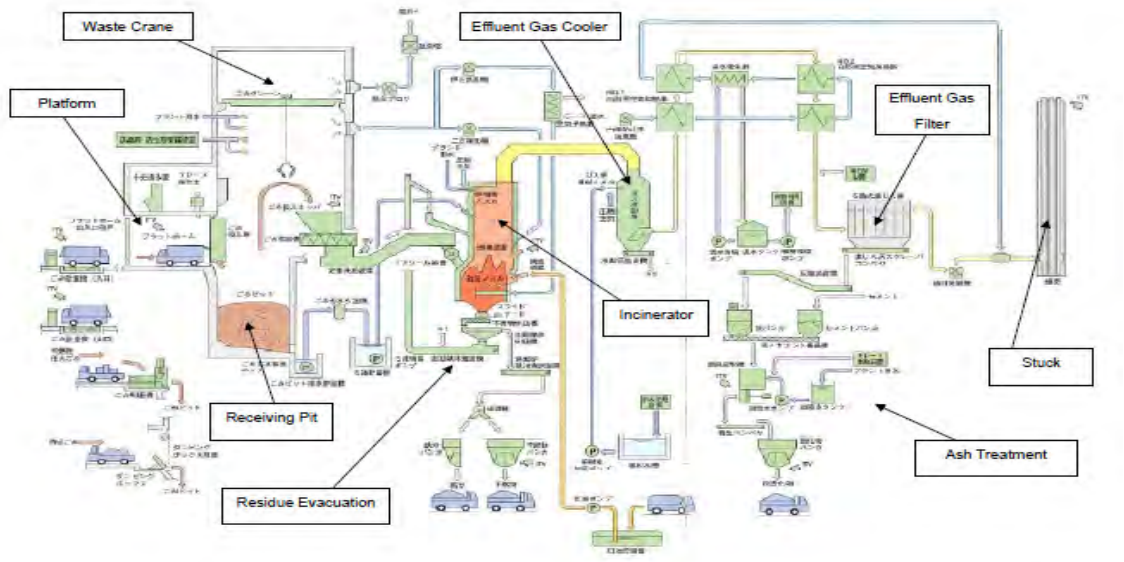
The outline of incineration system is as follows:

Table 13-4 Outline of the Incineration System

	Legok Nangka	Nambo
Average amount of waste to be treated (t/d)	203	173
Capacity (t/d)	260	220
Annual operation days (d)	280	280
Type of incinerator	Stoker type, or Fluid bed type	
Foot print	Approximately 9,000m^2	

Source: Survey Team

Incineration system is the whole treatment system including not only incinerator but also receiving pit, ash evacuating unit, effluent gas treatment unit, and etc. An example of the incineration system is as shown in Figure 13-2.



Source: Survey Team

Figure 13-3 Outline of Incineration System (Example)

(3) Construction Cost

Approximate construction cost is as follows:

- Legok Nangka: 45 – 55 MMUSD
- Nambo: 40 – 50 MMUSD

Based on the past similar example in foreign countries, the construction costs of the waste incinerator are 15–20 million yen /(t/d) in general.

(4) O&M Cost

Approximate O&M cost is as follows:

- Legok Nangka: 2.2 MMUSD/y
- Nambo: 2.2 MMUSD/y

The O&M costs of the waste incineration plant were calculated about 3%–5% of construction costs based on the past similar example.

It has to be noted: this study is based on the assumption that self burning of waste in the incinerator is possible. However, when the moisture content of waste is high and its calorific value is accordingly low, auxiliary fuel such as gas or oil is necessary. In such a case, O&M cost will increase.

(5) Considerations

The study concerning the introduction of incineration system in this chapter is preliminary one. The detail study will be necessary from the view point of technology, environment, and economics. The construction cost and the O&M cost that we showed in this chapter are approximate value for the purpose to compare with alternative system. We suggest that further cost estimation is necessary for realization of the project.

The Possibility to Bring Waste to Solid Waste Management Improvement (Incinerator) Bandung Municipal Project

Legok Nangka landfill is planned as the area-wide landfill site, and it shall receive the wastes from service areas in the target 6 cities/regencies. For example, the total amount of transported wastes to in 2010, as 1,377 t/day, was the wastes from the service areas in the target cities/regencies, but not the wastes from the whole areas in the target cities/regencies.

These service areas were determined by the questionnaire and interview surveys with each target city/regency. Regarding to the case of Bandung City, the Project team discussed with Solid Waste Enterprise of Bandung City. As a result, the service area was set as same as the target area for the existing area-wide landfill (Sarimukti landfill), which was 48.9% of total area (total population) in Bandung City.

On the other hand, Bandung City plans to construct an incinerator for the areas, which do not include the service area for Legok Nangka landfill. Bandung City also plans not to transfer the residue (ash) from the incinerator into Legok Nangka landfill. Therefore, the amount of transported wastes into Legok Nangka landfill shall not be changed even though this incinerator would be constructed because each service area is different.

However, there is a possibility that the plan of Bandung City might be changed and the amount of transported wastes into Legok Nangka landfill might be changed consequently. But, it is impossible to estimate how the transported wastes can be changed because the system of the incinerator is unclear, such as the storage pits, operation days, etc.

At the time of DFR explanation, the Study team evaluated that the incinerator construction would not be realized in near future by the following reasons;

- From the hearing survey, the time of bidding for the incinerator construction was changed from February 20111 to July 2011. However, it was postponed again.
- EIA for the incinerator project was expired, and Bandung City should complete the new EIA.
- Bandung City faces the difficulty to build consensus with residents on the incinerator project.

Hence, the amount of transported wastes into Legok Nangka landfill shall be kept as the estimation by the Study team as 1,000t/day although there is a possibility that Bandung City might construct the incinerator, or change their plan. It means that the construction of the incinerator cannot be an option to extend the lifetime of Legok Nangka landfill.

13.2 Possible Scenarios for Project Structure

For further discussion among the stakeholders in the Government of Indonesia, two new project structures as alternatives, apart from the proposed project structure in the above chapters, are given.

(1) Case 1: All Construction and O&M by Public

Case 1 represents that all construction and operation are implemented by Public as normal public works. The central government is responsible for all construction (intermediate facilities, final disposal site) and purchase of operation heavy equipments by Yen loans, while the West Java Provincial Government implements O&M by the budget in the provincial government[1].

Table 13-5 Responsible Organization and Finance in Case 1

	Central Gov	Provincial Gov	Private
Intermadiate Facirity	○		
Incinerator			
Operation heavy equipments	○		
Final Disposal Site	○		
O&M		○	
Finance	ODA	Budget of Provincial Gov	-

Source: Survey Team

(2) Case 2: All Construction (including Incinerators) and O&M by Public

Case 2 represents that, in order to extend the project life, incinerators are installed in addition to Case 1, and all construction and operation are implemented by Public as normal public works. The central government is responsible for all construction (intermediate facilities, incinerators and final disposal site) and purchase of operation heavy equipments by Yen loans, while the West Java Provincial Government implements O&M by the budget in the provincial government[2].

Table 13-6 Responsible Organization and Finance in Case 2

	Central Gov	Provincial Gov	Private
Intermadiate Facirity	○		
Incinerator	○		
Operation heavy equipments	○		
Final Disposal Site	○		
O&M		○	
Finance	ODA	Budget of Provincial Gov	-

Source: Survey Team

[1] O&M could be contracted out from Provincial Gov to Private (i.e. O&M PPP)
[2] O&M could be contracted out from Provincial Gov to Private (i.e. O&M PPP)

(3) Case 3: Construction for Final Disposal Sites by Public, Construction for Intermediate Facilities and O&M by Private (the PPP Case Show in the Previous Chapters)

Case 3 is that construction for final disposal site are conducted by Public as normal public works, and construction for intermediate facilities/purchase of operation heavy equipments and O&M are implemented by Private. The central government is responsible for public portion by Yen loan, while Private is responsible for BOT or BTO by their finance. The West Java Provincial Government is a contract agency for PPP service agreement.

Table 13-7 Responsible Organization and Finance in Case 3

	Central Gov	Provincial Gov	Private
Intermadiate Facirity			○
Incinerator			
Operation heavy equipments			○
Final Disposal Site	○		
O&M			○
Finance	-	-	Private (loan, equity)

Source: Survey team

(4) Case 4: Construction for Final Disposal Sites by Public, Construction for Intermediate Facilities Plus Incinerators and O&M by Private

This case is not realistic as the PPP model because both initial cost and O&M cost largely increase due to installation of incinerators, while a case of public works (Case 2) considers incineration in order to extend the project life more than 25 years. Therefore, financial analysis is not tested for Case 4.

Table 13-8 Responsible Organization and Finance in Case 4

	Central Gov	Provincial Gov	Private
Intermadiate Facirity			○
Incinerator			○
Operation heavy equipments			○
Final Disposal Site	○		
O&M			○
Finance	-	-	Private (loan, equity)

Source: Survey team

13.3 Project Cost and Financial Outcomes in Each Case (Comparative Analysis)

To compare financial aspects in each case, financial analysis is done. The followings are the outcomes from the analysis.

(1) Case 1: All Construction and O&M by Public

[Assumption]
The below items are assumptions for financial analysis for Case 1. Basically, except the below items, the assumptions are same as ones shown in Chapter 12 (i.e. Case 3).

- All construction and O&M[3] are implemented by Public, which are finance by Public
- Finance cost by Public (interests) and profit (dividend) are not considered because the project are implemented as public works.
- All insurance costs for SPC are not included.
- Corporate income tax is not included.

[The outcomes from financial analysis]

Table 13-9 The Outcome from Financial Analysis for Case 1

	Nambo	Legok Nangka
CAPEX (ODA) for all construction cost	US$82,057,000	US$105,738,000
CAPEX (ODA) for O&M equipments	US$1,577,000	US$1,577,000
OPEX for whole project period	US$69,036,000	US$61,492,000
TOTAL	US$152,670,000	US$168,807,000
PPP/ODA Ratio (CAPEX)	0 US$ (0%) / 83,634,000 US$ (100%)	0 US$ (0%) / 107,315,000 US$ (100%)
Service Fees at provincial government	7.99 US$ / ton	8.20 US$ / ton
Revenues from Plastic Sales	4.0 $ / ton	4.0 $ / ton
Project Life	16.7 years	14.2 years
Project IRR for Private portion	N/A	N/A
Equity IRR for Private portion	N/A	N/A
DSCR (avarage)	N/A	N/A

Source: Survey team

(2) Case 2: All Construction (including Incinerators) and O&M by Public

[Assumption]
The below items are assumptions for financial analysis for Case 1. Basically, except the below items, the assumptions are same as ones shown in Chapter 12 (i.e. Case 3).

- All construction and O&M[4] are implemented by Public, which are finance by Public
- Finance cost by Public (interests) and profit (dividend) are not considered because the project is implemented as public works.
- Initial cost for incinerators USD49.5 million (Nambo), USD54.9 million (Legok Nangka) are added.
- O&M costs for incinerators USD2.2 million per year are added during 20 years, while after 21 years, the said O&M cost are not included.
- O&M costs for final disposal site, leateche treatment facilities and common area are calculated by 10% of it in case 3 for first 20 years. After 21 years, 100% of it in Case 3 is appropriated.
- Useful year for incinerators are 20 years.
- After 21 years incinerators will not work, and therefore, residues and non-recycle plastics will be disposed to the final disposal sites.
- After 21 years, life of the final disposal sites is 15.1 years (Nambo), 12.9 years (Legok Nangka). Total project life which is extended by introduction of incinerators are 35.1 years (Nambo) 32.9 years (Legok Nangka).

[3] In case of contracting out O&M to private, tax, insurance costs, debt service costs should be included.
[4] In case of contracting out O&M to private, tax, insurance costs, debt service costs should be included.

- All insurance costs for SPC are not included.
- Corporate income tax is not included.

[The outcomes from financial analysis]

Table 13-10 The Outcome from Financial Analysis for Case 2

	Nambo	Legok Nangka
CAPEX (ODA) for all construction cost	US$131,508,000	US$160,683,000
CAPEX (ODA) for O&M equipments	US$1,577,000	US$1,577,000
OPEX for whole project period	US$155,822,000	US$146,753,000
TOTAL	US$288,907,000	US$309,013,000
PPP/ODA Ratio (CAPEX)	0 US$ (0%) / 133,085,000 US$ (100%)	0 US$ (0%) / 162,260,000 US$ (100%)
Service Fees at provincial government	9.41 US$ / ton	9.45 US$ / ton
Revenues from Plastic Sales	4.0 $ / ton	4.0 $ / ton
Project Life	35.1 years (20 years of Incineration)	32.9 years (20 years of Incineration)
Project IRR for Private portion	N/A	N/A
Equity IRR for Private portion	N/A	N/A
DSCR (avarage)	N/A	N/A

Source: Survey team

(3) Case 3: Construction for Final Disposal Sites by Public, Construction for Intermediate Facilities and O&M by Private (the PPP Case Show in the Previous Chapters)

[Assumption]
The assumptions are same as ones shown in Chapter 12 (i.e. Case 3).

[The outcomes from financial analysis]

Table 13-11 The Outcome from Financial Analysis for Case 3

	Nambo	Legok Nangka
CAPEX (ODA) for final disposal site	US$57,152,000	US$80,783,000
CAPEX (PPP) for intermediated facilities & O&M Equipments	US$26,482,000	US$26,532,000
OPEX for whole project period	US$73,188,000	US$65,608,000
TOTAL	US$156,822,000	US$172,923,000
PPP/ODA Ratio (CAPEX)	26,482,000 US$ (32%) / 57,152,000 US$ (68%)	26,532,000 US$ (25%) / 80,783,000 US$ (75%)
Service Fees to PPP Company	18.65 US$ / ton	19.74 US$ / ton
Revenues from Plastic Sales	4.0 $ / ton	4.0 $ / ton
Project Life	16.7 years	14.2 years
Project IRR for Private portion	9.25%	9.33%
Equity IRR for Private portion	7.30%	7.22%
DSCR (avarage)	1.35	1.35

Source: Survey team

(4) Comparison of Each Case (Summary)

In general, in case of conduct comparative financial analysis for several cases, indicator FIRR is commonly used to analyze profitability of the projects. For the waste management project, PPP case (Case 3) can make FIRR calculation because the service fees to SPC could be assumed as revenue in cash inflow. However, for other public works cases (i.e. Case 1, 2), FIRR calculation cannot formed, because the statics regarding tipping fee collection from users have not been well established and accordingly forecast of tipping fee collection would be difficult.

Therefore, to examine each alternative, it must be compared the following points; i) extent of financial burden in the central government/the provincial government, ii) the amount of service fees which should be borne by the provincial government, iii) the project life. As viewpoints would be differed by each organization (the central government, the provincial government, private), this chapter does not discuss its superiority or inferiority, but it is purposed for discussion among the stakeholders in the Government of Indonesia

[Nambo]
The outcomes of financial analysis for each case are shown in the below table

Table 13-12 Comparative Analysis (Nambo)

	Case 1	Case 2	Case 3
CAPEX Total for Central Gov (ODA)	US$83,634,000	US$133,085,000	US$57,152,000
OPEX Total for WJPG	US$69,036,000	US$155,822,000	
CAPEX for SPC			US$26,482,000
OPEX Total for SPC			US$73,188,000
TOTAL	US$152,670,000	US$288,907,000	US$156,822,000
PPP/ODA Ratio (CAPEX)	US$ 0 (0%) / US$ 83,634,000 (100%)	US$ 0 (0%) / US$ 133,085,000	US$26,482,000 (32%) / US$ 57,152,000 (68%)
Service Fees at provincial government	7.99 US$ / ton (Service fees which can cover OPEX)	9.41 US$ / ton (Service fees which can cover OPEX)	18.65 US$ / ton (Service fees which can cover SPC cost)
Revenues from Plastic Sales	4.0 $ / ton	4.0 $ / ton	4.0 $ / ton
Project Life	16.7 years	35.1 years (20 years of Incineration)	16.7 years

Source: Survey team

[Legok Nangka]
The outcomes of financial analysis for each case are shown in the below table.

Table 13-13 Comparative Analysis (Legok Nangka)

	Case 1	Case 2	Case 3
CAPEX Total for Central Gov (ODA)	US$107,315,000	US$162,260,000	US$80,783,000
OPEX Total for WJPG	US$61,492,000	US$146,753,000	
CAPEX for SPC			US$26,532,000
OPEX Total for SPC			US$65,608,000
TOTAL	US$168,807,000	US$309,013,000	US$172,923,000
PPP/ODA Ratio (CAPEX)	US$ 0 (0%) / US$ 107,315,000	US$ 0 (0%) / US$ 162,260,000	US$ 26,532,000 (25%) / US$ 80,783,000 (75%)
Service Fees at provincial government	8.20 US$ / ton (Service fees which can cover OPEX)	9.45 US$ / ton (Service fees which can cover OPEX)	19.74 US$ / ton (Service fees which can cover SPC cost)
Revenues from Plastic Sales	4.0 $ / ton	4.0 $ / ton	4.0 $ / ton
Project Life	14.2 years	32.9 years (20 years of Incineration)	14.2 years

Source: Survey team

13.4 Differences and Issues in Each Case

The differences in project implementation for each case are clarified in the below matrix. Also, issues are pointed out in the matrix.

Table 13-14 Differences and Issues in Each Case

	Case 1	Case 2	Case 3
Differences			
Implementation agency (Construction)	The Central Government (whole facilities in the sites)	The Central Government (whole facilities in the sites)	The Central Government (the final disposal sites) Private (Other facilities)
Implementation agency (O&M)	The Provincial Government	The Provincial Government	The Provincial Government (as contract agency) Private (whole facilities in the sites)
Financial source	Yen Loan (construction) The provincial government budget (O&M)	Yen Loan (construction) The provincial government budget (O&M)	Yen Loan (construction) Private fund (construction and O&M)
Finance cost	Yen loan: interest 0.65%	Yen loan: interest 0.65%	Yen loan: interest 0.65% Loan for SPC: interest 8% Equity: dividend 8%
Procurement (Construction)	The central government procure a contractor by ICB (whole facilities)	The central government procure contractors by ICB (whole facilities)	The central government procure a contractor by ICB (final disposal site only)
Procurement (O&M)	Not required (the provincial government executing O&M)	Not required (the provincial government executing O&M)	The provincial government procure a PPP service provider by ICB (BOT/ BTO)
Risk sharing ※In all cases, issues stated in chapter 11 should be resolved,	All risks are borne by Public (except risks born by contractors stipulated in construction contracts)	All risks are borne by Public (except risks born by contractors stipulated in construction contracts)	Risks are properly shared by both Public and Private from planning stage to the end of project period.

	Case 1	Case 2	Case 3
unless otherwise, realization of the project is impossible.			(see 10.1.2)
Facilities and technologies which are required	Basically same as PPP case. Design concept will be reviewed at D/D stage. In case of utilizing Yen loan, international standard is required.	Incinerators are added to Case 1. Design concept will be reviewed at D/D stage. In case of utilizing Yen loan, international standard is required.	Basically same as proposal in the previous chapter (PPP case). Design concept will be reviewed at D/D stage. In case of utilizing Yen loan, international standard is required.
Revenues from sales of recyclable plastic	Public	Public	PPP service provider
	Case 1	Case 2	Case 3
Issues			
Public Debt	Public debt in the Government of Indonesia is increased (Middle)	Public debt in the Government of Indonesia is increased (Large)	Public debt in the Government of Indonesia is increased (Small)
Project Cost		Significant increase of the project cost by installation of incinerators	
Subsidy	A cash flow at the central government doesn't generate for source of repayment of Yen loan for initial cost (i.e. all construction cost is subsidized by the central government)	A cash flow at the central government doesn't generate for source of repayment of Yen loan for initial cost (i.e. all construction cost is subsidized by the central government). The provincial government shall bear huge O&M cost for incinerators by their bugets.	The provincial government shall use subsidies to pay service fee to SPC, because of low levels of tipping fee collection from users.
Defect liability	In case of defect, the Central Government takes risks.	In case of defect, the Central Government takes risks.	In case that damages cause unknown are occurred in the final disposal site, defect liability would be unclear between Public and Private.
O&M	Since Public itself play a role of a operator, check & balance (including monitoring) may not work well. As a result, compliance for relevant standard in environment and waste management laws/regulation may not be strictly done.	Since Public itself play a role of a operator, check & balance (including monitoring) may not work well. As a result, compliance for relevant standard in environment and waste management laws/regulation may not be strictly done.	Because a private service provider which has experience for waste management will be selected, efficient and appropriate O&M would be realize based on technologies and know-how from experiences
Environment	In prior appraisal for Yen loan, EIA should be approved.	Detail environmental study for incinerators is essential. Also, EIA including public consultation is needed, which takes long time.	In prior appraisal for JICA' Private Investment Fund, EIA should be approved.

Source: Survey team

Appendices

Appendix 1 Validity of Cost Estimation

The proposal in this study is a build and operation of the sanitary landfill which is applied the international standard, and it has been planed based on the comments from JICA Environmental Advisory Committee. Namely, if lowering technical standard from the aforesaid standard (e.g. double liner sheets), it would be difficult for JICA to provide ODA loans to this project. As for the prices, JICA Survey team has thoroughly examined the local unit prices (Indonesian Standard) and has applied such prices wherever possible, and international prices has been applied to items that cannot be procured locally (e.g. liner sheets).

Tipping fees proposed by JICA Survey Team, USD19.74 (Legok Nangka), USD 18.65 (Nambo), are consisted by i) capital costs for intermediate facilities (i.e. sorting facility, composting facilities), ii) O&M costs for whole waste management facilities (both intermediate facilities and final disposal facilities) and others.

First, to lower **capital costs** (as well as to minimize waste volume) as the first priority, conventional intermediate facilities are selected. Second, as for **O&M, cost** international standards are applied for the method of O&M. And the unit price for O&M cost is basically estimated by local unit prices.

A1.1 CAPEX

(1) Intermediate Facility

[Sorting facility]

1) To make adequate and minimize scale of intermediate facilities and final disposal site, the sorting process is the most important factor. Therefore, in consideration of refuse property, the adoption equipment required commeasurable process performance and structure & materials are needed superior durability for reducing trouble & part exchange frequency as much as possible.

2) As a matter of policy in this proposal, the equipment will be supplied by Indonesian vender as much as possible. As described above, for satisfying the process performance, the durability (materials, structure) and the safety of the worker (function as emergency stop button and preventive rolled up), it is a plan to be improved the equipment which Indonesian standard reflect a Japanese technique.

3) In addition, about the equipment required product precision such as the trammel that assumes to be produced and imported from Japan or the third nation which have a past record of sales.
   Japan has a lot of past record of sales and knowledge of this technique that can satisfy process performance. In consideration of maintenance-safety-economy, Japan can offer superior equipment on total balance.

4) The estimation of equipment etc is based on Japanese products level, in case of Indonesian equipment don't have a past record of sales. The estimation of civil engineering is based on the unified local unit price in the project.

[Composting facility]

The capital cost estimation of the compost facility is based on experience of a contractor and a consultant doing business in Indonesia. The turner or special equipment is inquired to its maker for our estimation.

(2) Final Disposal Site

The design concept of the Final Disposal Sites is set up based on the "Design & Management Standards and Ordinance" hereinafter referred to.

Most of the materials, construction equipment and labors should be procured in Indonesia. However, as far as the landfill liner works are concerned, which are very important as an environmental impact mitigation measure, sealing sheet, protection mat and technical supervisor should be procured from Japan in order to achieve the requirements of the standard by Japan Sealing Work Association.

The cost estimations of the Final Disposal Sites are based on the average unit prices which are obtained from our recent projects performed in Indonesia.

Most influential factors for the cost estimations of the Final Disposal Sites are as follows:

"Design & Management standards and Ordinance" applied

1) Ministerial ordinance for Technical Standard regarding Final Disposal Site-1977.3.14 (amendment-10 November 2006)
2) Summary of Planning & Design & Management for the Final Disposal Site (Revised in 2010: Japan Waste Management Association)
3) Voluntary Standards on Sealing Sheets and Protection Mats (dated 23 May 2007 and 11 June 2010 by Japan Sealing Work Association)
4) Advices from the Working Group of the Environmental Social Consideration Advice Committee organized for this Project by JICA.

Base of the Cost Estimation

1) Sealing sheet and Geotextile (protection mat) are Japanese products. (their import cost from Japan is included.)
2) The sealing liner works shall be performed by local workers under the supervision of Japanese technical supervisors.
3) Most of the materials and construction equipment other than the lining sheets shall be procured locally.

Special Conditions of the Land Formation Work (Earth Work)

1) The project site is located on a hill inclined with a gradient of 15 to 25% (Legok Nangka).
2) Total volume of earth work will amount to 2 million cubic meters for Legok Nangka and 1.5 million cubic meters for Nambo in order to secure the maximum volume of the final disposal.
3) To make cut and fill balanced, approx., 800,000 and 970,000 cubic meters of excavated soil shall be moved out from Legok Nangka and Nambo respectively which shall be temporarily stocked in the designated areas as covering soil. (The cost of the land formation work includes the transportation cost as well as the cost of the temporary embankment.)
4) As the cutting and filling areas are distant each other, 1.2 million cubic meters of excavated material shall be transported by dump trucks even within the project site.
5) Required construction period (two years) is very tight under the weather condition where a long rainy season lasts almost half a year.

Additional Technology and Works (in comparison with Pre-FS)

1) Double sealing sheet structure is adopted.
2) Fiber reinforced spray concrete is adopted not only to make smooth surface of slope preventing any damage to the sealing sheet being placed on it, but also to protect the exposed soil slope from erosion caused by the rain fall before covering by the lining sheet.
3) Underground water collection and removal facility is adopted.
4) Surface water collection and removal facility inside the landfill area is adopted to prevent the leachate water from increasing.
5) Surface water regulating reservoir is adopted.

(3) Leachate Facility

1) Each treatment process of the reachate treatment facility adapts the minimum required process to preserve the local aqueous environment with considering the standard "Industrial Plant" in the Republic of Indonesia, and the suggestions by the Advisory Committee for Environmental and Social Considerations, JICA.
2) The calculation of the capacity of the tank and the machinery ability in each treatment process is in accordance with "the guideline for plan, design, and management of Municipal Solid Waste landfill-sites", edited by the Japan Waste Management Association, etc; it isn't the over-designed.
3) The estimation of civil engineering and construction such as the water tank etc is based on the unified local unit price in the project.
4) Machineries are supposed to be procured in either Japan or third country having experiences with a) securing an ability of the facility and b) considering durability etc. to a risk with non-handling appropriate water-treatment depending on the ability of driving & operation and a concern about the environmental influence.
    a) Specifically, machineries researched & developed in Japan, such as the floating carriers of the biological reaction tank, multi-disc sludge dehydrator and removable sewage & sludge submersible pump etc are supposed to be manufactured and imported in either Japan or third country.
    b) In addition, the chemical feeding pump and the roots-blower etc, required a product-accuracy and durability, are supposed to be manufactured and imported in either Japan or third country. Moreover, the tanks and the control panels, processed steel materials, are supposed to be manufactured in Indonesia.

A1.2 OPEX

(1) Intermediate Facility

[Sorting facility]

1) The number of plant operators is estimated with the minimum required under the comments by Indonesia government.
2) The estimation of employment cost is based on the unified local unit price in the project.
3) The estimation of maintenance cost is based on the local unit price in Indonesia, but maintenance frequency and total amount of replacement parts are based on the Japanese past record of sales. In addition, about the equipment part of great precision and unprocurable parts in Indonesia that assumes to produce and import from Japan or the third nation which have a past record of sales.

[Composting facility]

The operation and maintenance cost estimation of the compost facility is based on experience of a contractor and a consultant doing business in Indonesia.

(2) Final Disposal Site

1) Personnel system and quantity of heavy equipments are demanded from regulations which set up a minimum of work of landfill in Japan, and calculated based on empirical value in Japan.
2) Secure of manpower on site is premised. Labor cost is calculated based on site in order to fit reality.
3) Fuel of heavy equipments is reduced in consideration of promotion of streamlining and optimization of operating time of heavy equipments.
4) Daily cover and intermediate cover is needed connection with landfill of wastes. These cover soil is made an effective use by using soil occurred during the construction, and cost of soil is reduced.

Appendix 2 Steps Involved in Establishing a New Foreign Investment Company ("PT PMA") in Indonesia

All investments into Indonesia need to be in the form of an Indonesian subsidiary (with very limited exceptions in for example the banking and oil & gas sectors).

The following is a description of the usual application process for establishing a PMA (foreign investment) status company. There are various nuances given policy and approaches that can, and perhaps should, be taken. Consequently this guide is just that and appropriate legal advice should be sought.

1. Applying for an Investment Registration

Foreign investors that wish to invest in Indonesia must first secure an Investment Registration Approval ("Investment Registration"). Under current regulation, BKPM Regulation No. 12 of 2009, the Investment Registration can be obtained before or after a PT PMA secures its status a statutory body from the Minister of Law and Human Rights ("MOLHR"). However, it is advisable if the PT PMA secures this Investment Registration prior to obtain status as a statutory body. Under current regulation, an application to obtain the Investment Registration ("Investment Registration Application") can only be processed at the Capital Investment Coordinating Board ("BKPM").

The following documents are attached as enclosures to the attached Investment Registration Application:

(a) Powers of Attorney (if needed) to the individuals who sign/submit the application, in a strict prescribed form;

(b) the foreign party's Annual Report and brochures (if requested by BKPM);

(c) the Articles of Incorporation and amendments (if any) in English or its translation in Bahasa from a sworn translator of the foreign investor (Articles of Association if an Indonesian company participates);

(d) If a joint venture, the Indonesian company's Taxpayer Registration Number (NPWP);

(e) Proforma Joint Venture Agreement, in initialled form (if applicable);

(f) (i) a description and a flow chart of the production stages of the process, with an explanation, and the kinds of basic/auxiliary materials involved (for a manufacturing company);

(ii) a description of the business activities if in the services sector;

(g) a bank reference for foreign and the Indonesian applicants if they are individuals (if requested by BKPM);

(h) if the foreign investor is an individual, a copy of the pages of his passport, notarized and then legalized at the nearest Indonesian Consulate;

(i) if an Indonesian investor is an individual, a copy of ID Card (KTP) and Tax ID Number (NPWP);

(j) letter of recommendation from the technical ministries or other related government agencies concerned, if required.

In order to ensure the efficient processing of the application, it is desirable that applicants furnish all requested information and documents with their applications. Failure to submit this information leads to delays in granting approval.

The official time frame set by BKPM to process the Investment Registration Application is 1 working day, calculated from the date the complete set of application documents is "accepted" by BKPM, but in practice the process will depend on the availability of the officials and a complete submission of the required documents (that is there are no requisitions).

Important points to note when filling in the Investment Registration application:

· Applicants

Law No. 40/2007 on the Limited Liability Company (the "Company Law") requires at least two shareholders to establish and maintain a limited liability company. If the situation arises after establishment where there are less than two shareholders, then within six months the remaining shareholder must transfer a portion of its shares to another party or the company must issue new shares to a new shareholder. Otherwise, the relevant shareholder will be personally liable for all liabilities and losses of the company and, at the request of an interested party, the court can dissolve the company.

· Line of Business

Under Presidential Regulation No. 36 of 2010 regarding List of Business Fields Closed to Investment and Business Fields Open, with Conditions, to Investment provides, a foreign company may establish a wholly-owned foreign company under Indonesia laws and regulations, provided that the proposed business is open for foreign investment (according to the List of Business Sectors Closed for Capital Investment ("Negative List"), which is amended from time to time).

Therefore, the first order of priority of any foreign investor seeking to establish an operating company in Indonesia is to establish whether its proposed business activity is open, partially closed, or completely closed to foreign investors. That will involve an examination of the Negative List, and in some cases, discussions with BKPM.

· Debt/equity ratio

There is no minimum equity requirement, but the applicant generally must maintain a debt to equity ratio of 3 : 1. In recent years, BKPM has insisted on a 1 : 1 ratio for certain services companies.

· Total intended investment

There is no minimum or maximum total intended investment (equity plus loan) stipulated. However, BKPM will base its review on the commercial feasibility of the applicant's proposal/data.

The location of the operations needs to be specified and this will include the head office of the PT PMA. Identifying operation locations and where the head office will be located are of primary importance.

There are certain processes and steps not outlined in this desk top reference given policy prevails (and changes quite frequently). Currently BKPM requires a prescribed form of power of attorney to accompany an application.

An additional power of attorney, likewise duly notarized and legalized, will need to be issued for incorporation/establishment matters, discussed below, which do not involve BKPM.

2. Approval of Investment Registration

BKPM will issue an Investment Registration approval letter as the provisional Investment License for investors; the content of which includes details of the approved project and usually reflects the submitted application.

The provisional Investment License allows the investors to establish a PT PMA and start the actual investment in Indonesia. The Investment Registration will expire if the investors do not perform any follow up on/implement the Investment Registration (e.g. establishment of the PT PMA) within six months after the date of issuance of the Investment Registration.

3. Executing the Deed of Establishment

Having obtained the Investment Registration from BKPM, the parties may execute the Deed of Establishment of the new PT PMA containing the proposed company's Articles of Association, before a civil notary in Indonesia. This Deed of Establishment should be drafted to be consistent with the Joint Venture Agreement (if any), the Company Law and the Investment Registration. Certain commercial matters in the Joint Venture Agreement are not normally stated in the Deed of Establishment.

4. Obtaining Letter of Domicile from the local Head of Sub-district (Lurah) and the Building Management

After the parties have executed the Deed of Establishment, the PT PMA will need to have leased an office space at the domicile of the PT PMA. In practice, the negotiation on the lease agreement may take sometime and it is advisable to initiate this as early as possible prior to the execution of the Deed of Establishment and indeed submitting an application for an investment registration. The lease though is only signed after the Deed of Establishment is executed. Having an office and starting to engage staff is important for some of the processes outlined below; given the importance that Indonesia attached to the concept of a company's domicile (this needs to be a proper office and not for example a law firm).

The following documents are required to obtain a Letter of Domicile from the local Lurah:

(i) statement of Domicile from the building management;

(ii) lease agreement for the office space of the PT PMA (if the PT PMA leases an office space in a building);

(iii) identity card/passport of the President Director of the PT PMA; and

(iv) Investment Registration issued by BKPM on the establishment of the PT PMA.

5. Obtaining Taxpayer Registration Number (NPWP) and Taxable Entrepreneur Number (PKP) After the parties have executed the Deed of Establishment, they may apply to the relevant Tax Office for their Taxpayer Registration Number (Nomor Pokok Wajib Pajak -NPWP) and Taxable Entrepreneur Number (Nomor Pokok Pengusaha Kena Pajak - PKP).To obtain the NPWP, the following documents must be submitted.

(a) application letter (a form is available at the Tax Office);

(b) copy of the executed (notarial) Deed of Establishment;

(c) Surat Keterangan Domisili (Statement of Domicile) of the proposed office or factory issued by the local Lurah/Camat (Head of Village/Head of Sub-District);

(d) Copy of the Investment Registration Approval;

(e) Copy of the ID card/passport of the PT PMA's President Director;

(f) Power of Attorney from the President Director if the application is processed by someone else.

Normally, the NPWP can be obtained within one week.

After obtaining NPWP, a PKP can be processed at the Tax Office. The process to apply for a PKP is similar with the process to obtain a NPWP, except that the following additional requirements must be fulfilled:

(i) NPWP;

(ii) lease agreement where the PT PMA is domiciled; and

(iii) there is usually a site visit to the PT PMA's domicile by the Tax Office.

6. Opening a PMA Bank Account

The applicable regulations of Bank Indonesia require that all banking transactions of the newly established the PT PMA with respect to (i) paying in capital (cash) by both the foreign and the Indonesian party, (ii) administering loans which are part of the approved intended investment, and (iii) paying for imported capital equipment and raw materials be transacted through a special foreign investment account ("PMA Account") opened with an approved foreign exchange bank in Indonesia. Separate operating Rupiah accounts will normally be opened at the same time. These accounts can be opened after the Deed of Establishment has been executed and a copy of the Deed is submitted to the bank along with appropriate authorization letters to the individual operating the account. Each bank will have its own set of documentation requirements.

7. Obtaining Approval of the Manpower Plan (RPTKA)

If the PT PMA intends to utilize expatriate, it must file an application for approval of its Manpower Plan (RPTKA). Approval of this plan will permit the PT PMA (after it is established by execution of its Deed of Establishment) to employ expatriates. Employment of expatriate directors in the numbers specified in the Investment License is relatively easy. The numbers of expatriate technical advisors, however, must be justified by reference to the number of Indonesian counterparts who will be trained to replace them in due course. Expatriate

members of the board of commissioners seldom are resident and, therefore, they will not need work permits.

8. Obtaining Approval of the Deed of Establishment from the Minister of Law and Human Rights

The civil notary responsible for drawing up the Deed of Establishment will submit it to the Department of Law and Human Rights for approval within 60 days as of the execution of the Deed of Establishment. The submission will include the statement of domicile from local Lurah/Camat (Head of Village/Head of Sub-District), tax ID number (NPWP) of the newly established company and a bank statement regarding the PMA Bank Account, showing evidence of payment of the capital from the founders. Normally, within one or two months after the Deed of Establishment has been filed with the Department of Law and Human Rights and examined by its employees, the Minister of Law and Human Rights will grant approval. Upon this approval, the PT PMA exists as a limited liability company.

9. Registering the approved Deed of Establishment at the Registry of the Minister of Law and Human Rights and announcing the registered Deed of Establishment in the State Gazette

After the Deed of Establishment is approved by the Minister of Law and Human Rights, the approved PT PMA's Deed of Establishment will be registered in the Registry of the Minister of Law and Human Rights, and published in the State Gazette. Under the Company Law, this will be done by the Minister of Law and Human Rights.

10. Registering at the Company Registry of the Department of Trade

Under Law No.3 of 1982 on Mandatory Company Registration, every company must be registered in the Company Registry. The registration is conducted at the Department of Trade Office where the company is domiciled. This process can be done by the appointed notary.

11. Obtaining Post-Establishment Licenses

To become fully operational, the PT PMA will need to obtain several additional licenses, e.g., an import license (APIT) for importation of its capital goods, a Customs Registration Letter (SRP), and sign up its employees (assuming 10 or more) under the JAMSOSTEK mandatory employees' social insurance program. If the PT PMA employs more than 10 employees, it must also issue and obtain approval from the Manpower Department for its corporate labor and employment policies referred to as Company Regulations.

In recent years, the regional governments have begun to impose a variety of additional local permits and assessments, varying from province to province.

12. Convening First Extraordinary General Meeting of Shareholders

The first Extraordinary General Meeting of Shareholders (EGMS) normally is convened within 60 days after the approval of the Deed of Establishment by the Minister of Law and Human Rights. In the first EGMS, at least the following resolutions should be adopted:

· Ratification of the appointment of the members of the Board of Directors and the Board of Commissioners named in the Deed of Establishment;

· Assumption by the Company of obligations under contracts and agreements (if any)

executed by the founders on behalf of or for the benefit of the company prior to the date of the Minister of Law and Human Rights' approval;

· Approval on the opening of and administration of the company's PMA Bank Account and other operating bank accounts;

· Approval on the issuance of share certificates and the form of the Share Register Book.

13. Applying for Business License (Ijin Usaha/IU) to BKPM

The IU must be applied once the PT PMA is ready to commence commercial operations and acts as its main general business license.

The following documents are required for processing IU:

(a) the Investment Registration from BKPM;
(b) the latest LKPM report;
(c) Articles of Association and amendments, and the notarial deed reflecting the latest composition of the Board of Directors and the Board of Commissioners of the Company (including their MOLHR's approvals and/or notifications);
(d) Statement of Domicile from the building management;
(e) Letter of Domicile from the local Village Head/Lurah;
(f) NPWP;
(g) PKP;
(h) Land lease agreement or Land certificate;
(i) Office Lease Agreement;
(j) Nuisance Permit (Undang-undang Ganguan/HO) (Please ask the building management to provide the copy);
(k) Building Construction Permit (IMB) (Please ask the building management to provide the copy – if requested by BKPM);
(l) Passport of the President Director of the Company;
(m) Cover Letter to BKPM from Company to apply IU;
(n) IU Application Form;
(o) Power of Attorney to the proxy of the Company/Agent to process the IU;
(p) Other requirements as requested by relevant/local authority; and
(q) Environmental license i.e. AMDAL or UKL-UPL.

Appendix 3 RDF and Nambo Access Road

THE PREPARATORY SURVEY ON THE PROJECT FOR WEST JAVA REGIONAL SOLID WASTE TREATMENT AND FINAL DISPOSAL

Feasibility Study

RDF and Nambo Access Road

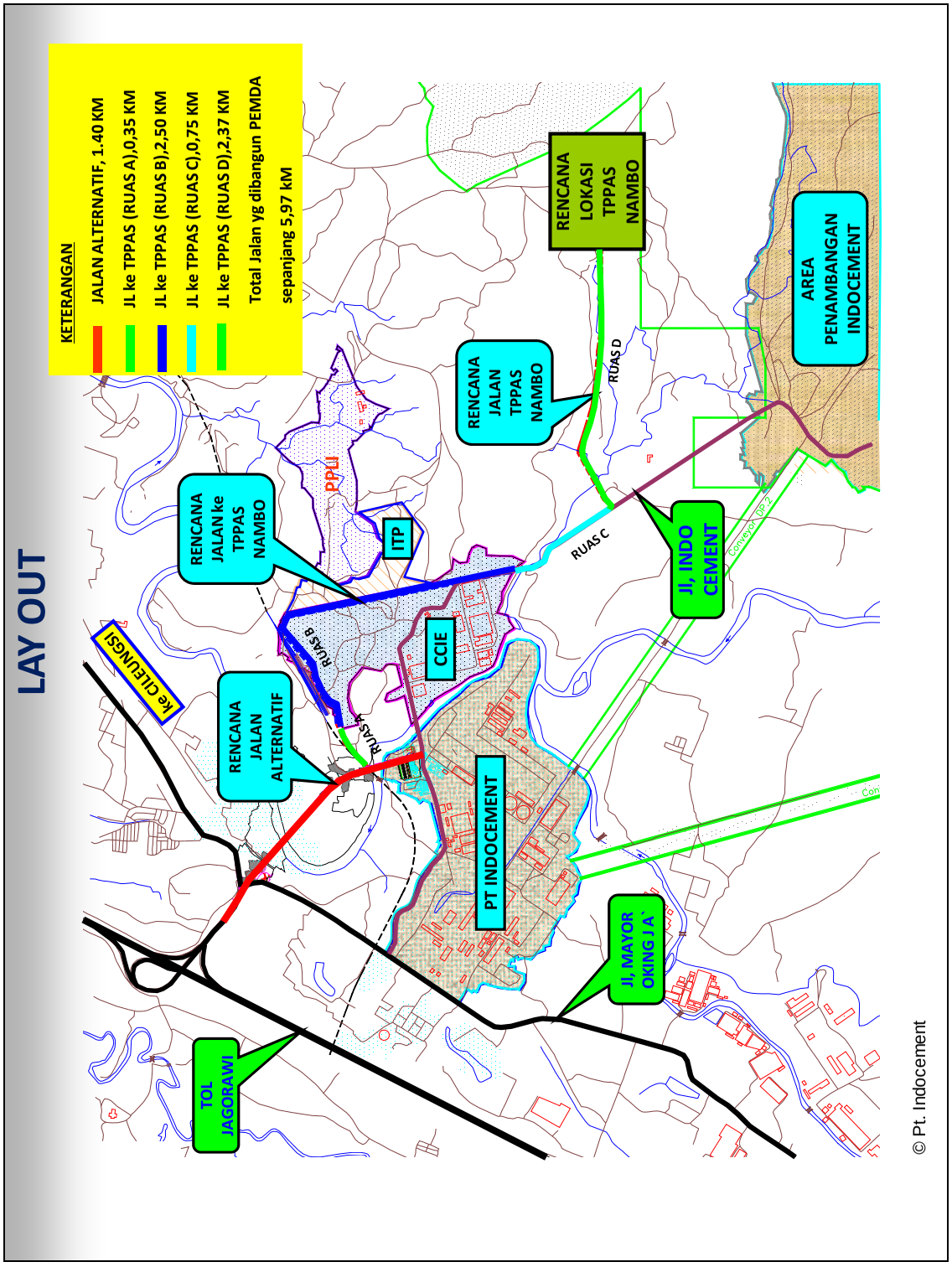
September, 2011

Survey Team Consortium Consisting of:

PADECO Co., Ltd., Kajima Corporation, Kyudenko Corporation, Shimizu Corporation, Taisei Corporation, Chodai Co., Ltd., JGC Corporation, Maeda Corporation, Mitsui Engineering & Shipbuilding Co., Ltd., Yachiyo Engineering Co., Ltd.

4 Party MOU for Nambo Access Road

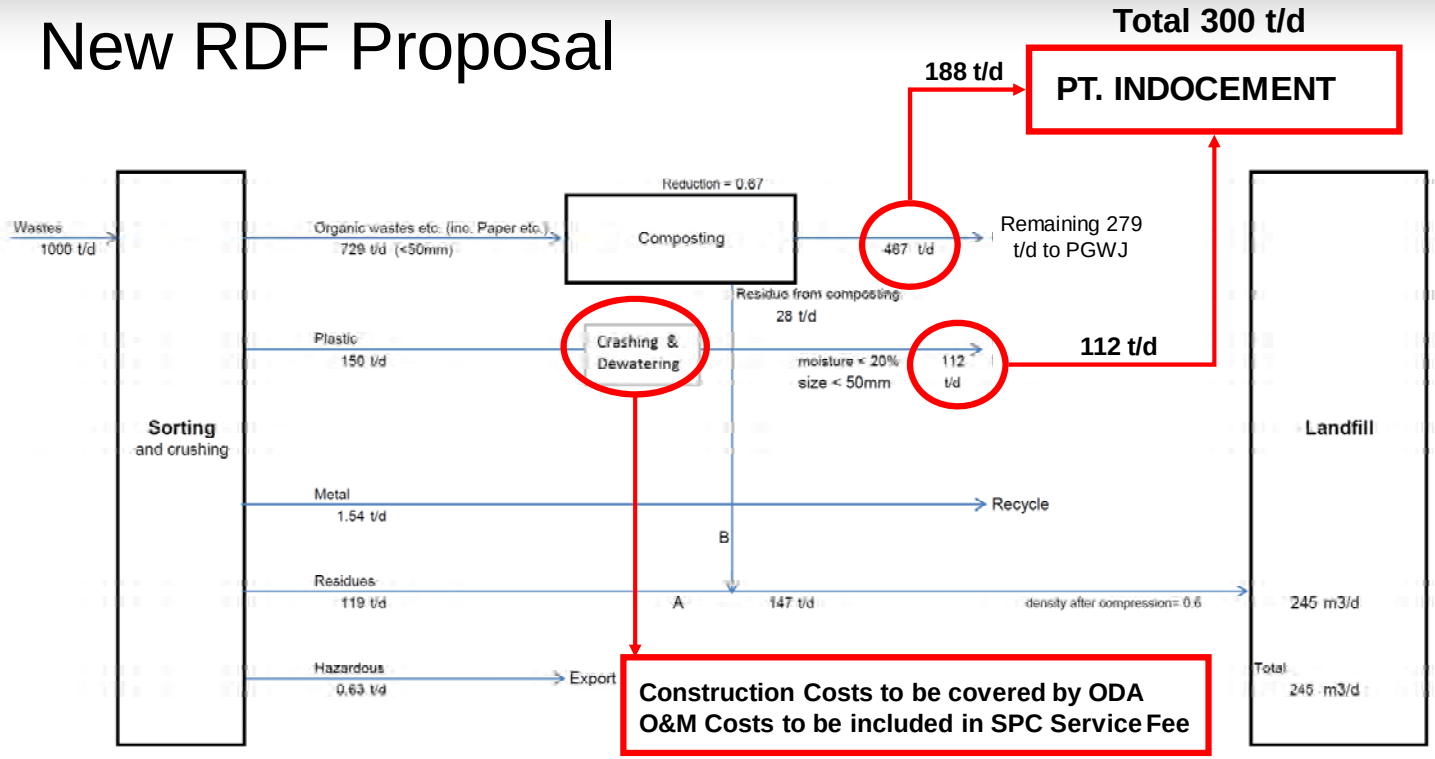
- The 4 parties involved in the signing of the MOU are
  - Provincial Government of West Java
  - Bogor Regency
  - ***Pt. Indocement***
  - *Pt. Cibingon Center Industrial* (private company, which holds the mining quarry land for the access road)
- The collective agreement has already been signed by the 4 parties. The cooperative agreement is in the process of being prepared and will be valid for 1 year after the singing by the 4 parties.


LAY OUT
KETERANGAN
JALAN ALTERNATIF, 1.40 KM
JL ke TPPAS (RUAS A),0,35 KM
JL ke TPPAS (RUAS B),2,50 KM
JL ke TPPAS (RUAS C),0,75 KM
JL ke TPPAS (RUAS D),2,37 KM
Total Jalan yg dibangun PEMDA
sepanjang 5,97 kM
RENCANA LOKASI TPPAS NAMBO
RENCANA JALAN TPPAS NAMBO
AREA PENAMBANGAN INDOCEMENT
RENCANA JALAN ke TPPAS NAMBO
RENCANA JALAN ALTERNATIF
Ke CILEUNGSI
TOL JAGORAWI
PPLU
ITP
CCIE
PT INDOCEMENT
JL. MAYOR OKING J A
JL. INDO CEMENT
RUAS A
RUAS B
RUAS C
RUAS D
Conveyor Opp 2
© Pt. Indocement

Specifications by PT.Indocement on Use of Nambo Access Road

- Provision of waste products (called “RDF” from here on) with the following specifications
  - 300 tons/day
  - Size under 30 mm
  - Moisture under 20 %
  - Calorie of greater than 12MJ/t

New RDF Proposal



Life of landfill

Whole volume	m3	2,708,155
Wastes volume	m3	1,730,872
Life	year	19.65

Annual operation = 360days

Waste to Landfill (ton/day)

	A	B
Plastics	-	17.5
Rubbers,leathers	4.9	0.5
Textiles	36.9	1.5
Glass	7.8	4.6
Nappies	66.3	-
Metals	-	0.8
Hazardous	-	0.1
Others	2.8	2.7
Total	119	28

Waste Material Balance and Flow

Plastics Drying and Dewatering Capital Costs

	Item	Quantity	Total (USD)	Remarks
Capex	Plastics Crushing system	5 units	4,819,780	2.7～4.0t/hr/unit Screen under 30mm
	Plastic Dehydration system	10 units	1,961,538	After dewatering : moisture 20%
	Conveyer	1 units	330,000	
	Equipment installation work/Power & operator control	1 units	2,200,000	
	Dump truck(10t)	7 units	923,076	Dump truck 10t = 25m3, 150t/d / 0.15t/m3 / 25m3 = 40 round-trip, 40 round-trip / (12h:Uptime / 2h:1round-trip) = 7 unit
	Civil and structural engineering work	1 units	1,550,000	
TOTAL			**11,784,395**	

*** Capital Costs of 11.8 Million USD to be included in ODA Portion**

Plastics Drying and Dewatering Annual O&M Costs / year

	Item	Quantity	Total (USD)	Remarks
Heavy Equipment	Plastics Crushing system	4 units	879,120	Reserve 1unit
	Plastics Dehydration system	9 units	781,318	Reserve 1unit
Labor cost	Plastics Crushing system	4 persons	15,840	330USD/month x 12month = 3960 USD/y
	Plastics Dehydration system	9 persons	35,640	330USD/month x 12month = 3960 USD/y
	Dump truck Driver	7 persons	27,720	330USD/month x 12month = 3960 USD/y
Utility	Electricity expense for plastics crushing system	4 units	63,980	187 kw x 0.90 x 12h x 360d x 200Rp/kwh x 0.00011 = 15,995 USD/y
	Electricity expense for plastics dehydration system	9 units	23,402	274 kw x 0.90 x 12h x 360d x 200Rp/kwh x 0.00011 = 2,600 USD/y
Fuel & oil cost	Dump truck (10t)	40 roundtrip	81,312	14km / 3km/L x 11000Rp/L x 360d x 0.00011= 2033 USD/y
TOTAL			**1,908,335**	

Approximately 5.3 USD/ton of Tipping Fee

- **O&M Costs equating to approximately 5.3 USD/ton will be additionally included in the PGWJ Tipping Fee paid to the SPC.**
- **Anticipated 4 USD/ton revenue from the sale of plastic wastes will no longer be recognized and must be additionally included in the PGWJ Tipping Fee Paid to the SPC.**

Bio-Drying Technology 1/2

- PT. Indocement has suggested the Bio-Drying Technology to satisfy the specifications of waste to be provided, however, its implementation is difficult to do the following reasons

  - It is not possible to purchase Bio-Dry System by parts necessary to the Nambo Site
  - The purchase of the whole Bio-Dry System eliminates the necessity of a sanitary landfill, therefore changes the whole concept of the JICA Feasibility Study (FS), which is already in the Final Report Stage.
  - As a result, should it be required to implement the Bio-Dry System, the Nambo FDS proposal must be eliminated from this JICA FS, and a new FS must be conducted for the Bio-Drying System.
  - Without a clear budget source for a new Bio-Dry System FS in the horizon, the completion of the Nambo FDS may not meet the scheduled 2015 date.

Bio-Drying Technology 2/2

- Bio-Drying Technology is also expensive

Plant	Osnabruck	Rennerod	Dresden	Venice
Amount of waste (ton/y)	**90,000 ton/y**	**100,000 ton/y**	**85,000 ton/y**	**150,000 ton/y**
Construction Cost (MM euro)	**17MM euro**	**25MM euro**	**21MM Euro**	**30MM euro**
Operation cost	**(Gate fee: 79 euro/t)**	**60-80 pond/ton**	**-**	**-**

* 1 pond = 1.597 USD @OANDA Rate 2011/9/9

- **O&M cost is 95 - 127 USD/ton for 100,000 ton/year**
- **The Nambo FDS anticipates 360,000 ton/year**
- **In order to implement the Bio-Drying System to the Nambo Site, it will cost approximately 342 – 457 USD/ton of Tipping Fee**