

1. The Disaster

A heavy rainfall during the period of Jan 29-Feb 2 2007 has caused flood in some areas in greater Jakarta area. Floods are recurring phenomena in Jakarta area, it has happened regularly from 17th century, in 20th century, great flood happened among others during the following year: 1976,1996,2002,2007. Details of area affected during 2007 flood are as below:

	City of Jakarta	Banten (Tangerang)	West Java (Depok,Bogor, Bekasi)	Total Greater Jakarta (Jabotabek)
Area width (km2)	649.71	1294.38	3833.21	5777.30
Flooded area (Km2)	454.8	221	250	926
% Affected	70	17.1	6.5	16
Population (Mn)	9	4.9	10.3	24.1
Displaced Population (thousand)	276	42.3	271.8	590.4
Dead Fatalities	48	13	18	79

2. Damage and Losses Estimate

2.1 Housing Sector

The data received from West Java province emergency center and the press are on flooded houses not damage house, hence the housing damage figure need to be estimated.

Table 1. No of Flooded House by District

Propinsi / Wilayah	Rumah terendam (unit)
Provinsi DKI Jakarta	89,770
1 Jakarta Pusat	15,289
2 Jakarta Utara	8,207
3 Jakarta Barat	6,627
4 Jakarta Selatan	23,297
5 Jakarta Timur	36,350
Provinsi Jawa Barat	52,972
1 Kota Bogor	453
2 Kabupaten Bogor	589
3 Kota Depok	6,083
4 Kota Bekasi	9,624
5 Kabupaten Bekasi	36,223
Provinsi Banten	3,000
1 Kota Tangerang	
2 Kabupaten Tangerang	
TOTAL	145,742

The estimates were done with the following assumption:

1. Distribution of: drifted, heavily damage, and lightly damage houses are respectively 10%, 15% and 75% of the flooded house.
2. Unit cost per house are as follow:
 - 2.1 Drifted house: 10 mn/house considering that these houses are generally non permanent house located at the river bank
 - 2.2 Heavily damage: 20 mn/house, including damage to household equipment.
 - 2.3 Lightly damage: 5 mn/house, including household equipment.
 - 2.4 The damage to housing infrastructure was estimated at 15% of the house damage figures

Table 2 below provide estimate of damage figures by district.

Propinsi / Wilayah	Klasifikasi Kerusakan Rumah Terendam dan Perkiraan Nilai							
	Hilang		Rusak Berat		Rusak Ringan		Total	
	Unit	Rp. 10 jt /unit	Unit	Rp. 20 jt /unit	Unit	Rp. 5jt / unit	unit	Rp juta
Provinsi DKI Jakarta	8,977	89,770	13,466	269,310	67,328	336,638	89,770	695,718
1 Jakarta Pusat	1,529	15,289	2,293	45,867	11,467	57,334	15,289	118,490
2 Jakarta Utara	821	8,207	1,231	24,621	6,155	30,776	8,207	63,604
3 Jakarta Barat	663	6,627	994	19,881	4,970	24,851	6,627	51,359
4 Jakarta Selatan	2,330	23,297	3,495	69,891	17,473	87,364	23,297	180,552
5 Jakarta Timur	3,635	36,350	5,453	109,050	27,263	136,313	36,350	281,713
		-						
Provinsi Jawa Barat	5,297	52,972	7,946	158,916	39,729	198,645	52,972	410,533
1 Kota Bogor	45	453	68	1,359	340	1,699	453	3,511
2 Kabupaten Bogor	59	589	88	1,767	442	2,209	589	4,565
3 Kota Depok	608	6,083	912	18,249	4,562	22,811	6,083	47,143
4 Kota Bekasi	962	9,624	1,444	28,872	7,218	36,090	9,624	74,586
5 Kabupaten Bekasi	3,622	36,223	5,433	108,669	27,167	135,836	36,223	280,728
		-						
Provinsi Banten	300	3,000	450	9,000	2,250	11,250	3,000	23,250
1 Kota Tangerang	-	-	-	-	-	-	-	-
2 Kabupaten Tangerang	-	-	-	-	-	-	-	-
		-						
TOTAL	14,574	145,742	21,861	410,533	109,307	1,129,501	145,742	1,129,501

2.2 Infrastructure

Based on data from line ministries, local governments, and the media, the damage to infrastructure are as below.

1. Road Transport: The damage to this sub sector is estimated to reach **Rp. 272 bn.** This constitute 19 km of road in Jakarta Metropolitan area, 17 km in Tangerang,etc. 5 bridges are damaged. Losses in terms of increase fuel consumption, time value, and car repairs have not been calculated in this assessment.
2. Railway: 3 train station were flooded, some rail track and signaling equipment damaged, the damage estimate for this item is 14.1 bn. Losses are based on revenue foregone for six days because of reduction in train frequency.
3. Toll Road: some toll road are flooded, losses are estimated based of decline in the revenue of toll operator, estimated to be around Rp. 1 bn

4. Public transport: losses estimate based on foregone revenue reach Rp. 320 bn
5. Electricity: damage to water pump and 7 main transmission station valued at Rp. 22.7 bn, revenue losses of the electricity company Rp. 75.6 bn. No estimate was made on opportunity losses of the private business lost opportunity and increase cost of person who have to buy electricity substitute.
6. Fuel: direct damage to fuel station valued at Rp. 1 bn
7. Telecommunication: losses because of one week disturbance: Rp. 18 bn
8. Water and Sanitation: Damage to water treatment facility: Rp. 15.4 bn, damage to distribution network in Bogor: Rp. 2 bn and foregone revenue in Bogor: Rp. 2bn. No estimate was made on foregone revenue and consumer loss in Jakarta.
9. Irrigation: Damage to irrigation infrastructure estimated at 18.6 bn

Table 3 below summarize damage (*Kerusakan*) and Losses (*Kerugian*) in Infrastructure sector.

Sektor & Sub-sektor	Nilai (juta rupiah)			Kepemilikan (juta rupiah)	
	Kerusakan	Kerugian	Total	Publik	Swasta/masyarakat
Transportasi Darat	271,149.88	330,240.00	601,389.88	281,389.88	320,000.00
1 Jalan dan Jembatan	257,021.88		257,021.88	257,021.88	
2 Kereta api	14,128.00	9,240.00	23,368.00	23,368.00	
3 Jalan tol		1,000.00	1,000.00	1,000.00	
4 Bus Way & Organda		320,000.00	320,000.00		320,000.00
Transportasi Laut	-				
Energi	22,768.00	175,600.00	198,368.00	198,368.00	
1 Listrik	22,768.00	75,600.00	98,368.00	98,368.00	
2 Depo Bahan Bakar Umum	NA	100,000.00	100,000.00	100,000.00	
Pos dan Telekomunikasi	-	18,000.00	18,000.00	18,000.00	
Air dan Sanitasi	15,400.00	2,000.00	17,400.00	17,400.00	
Infrastruktur Pertanian	18,652.22	-	18,652.22	18,652.22	
1 Irigasi Teknis	5,044.30		5,044.30	5,044.30	
2 Irigasi Non-teknis	80.00		80.00	80.00	
3 Irigasi Sederhana	20.00		20.00	20.00	
4 Tanggul & Tebing	12,836.00		12,836.00	12,836.00	
5 Pintu air	671.92		671.92	671.92	
Total	327,970.10	525,840.00	853,810.10	533,810.10	320,000.00

2.3. Social Sector

1. Damage to education facilities: Rp. 9.36 bn (including building, teaching material, and furniture). Losses estimated at Rp. 4.9 bn. Losses include cost of rehabilitation, and temporary relocation. It is assume that each school has 9 classroom, and temporary relocation cost, including book replacement and equipment is 1.5 mn/classroom for kindergarten and 2mn/class for other schools.
2. Health, damage estimate to this sector is Rp. 175 mn, this has not yet included losses of service provider and user.
3. Religious facility, damage estimate at 34.3 bn

2.4 Productive sector

1. Industry: Total damage and losses is Rp. 2.6 trillion. Most of it due to revenue losses during 7 days of operational disturbances.

2. Trade: Damage and Losses in trade sector estimated at Rp. 62.3 bn, including damage of 53 traditional market and foregone revenue during 7 days of operational disturbance
3. Tourism, no damage
4. Agriculture, and livestock: 32.75 ha of land were flooded, most of them has just been planted, damage estimated as value of seeds need to replaced, and additional losses because of delayed harvest.
5. Fishery, total damage to this sector valued at Rp. 16 bn, mostly constitute production losses in freshwater fishery.

Table 4 summarize damage and losses in the productive sector:

Sektor	Kerusakan (Juta Rp)	Kerugian (Juta Rp)	Total (Juta Rp)
Usaha			
Industri Besar		2,000,000.00	2,000,000.00
Usaha Kecil dan Menengah	13,650.00	729,000.00	742,650.00
Usaha Mikro Informal	530.25	46,000.00	46,530.25
Perdagangan			
Pasar	1,020.11	61,247.51	62,267.62
Pariwisata			
Pertanian, Peternakan dan Perikanan			
Pertanian	3,094.85	11,012.50	14,107.35
Peternakan		13,893.31	13,893.31
Perikanan	9,822.50	6,210.13	16,032.63
Total Sektor Ekonomi Produktif	28,117.71	2,867,363.45	2,895,481.16

2.5 Cross Sector

1. Government building: damage estimated to be around Rp. 320 mn
2. Security and Public Order: damage to military and police facility: Rp. 66.53 billion, according to Department of Defense data
3. Banking and Finance: according to Bank Indonesia data, damage to ATM network and facility is estimated to be Rp. 20.6 bn

2.6 Social and Economic Impact

1. National economic growth could decline by 0.2%; Bogor-Depok-Bekasi 1.33%; and Tangerang: 2.62%; Jakarta Metropolitan Province 0.59%.

Table 5 below provide summary of estimation on impact of the disaster to GDP growth.

Note: PDRB = Regional GDP

PDB = GDP

Column 2: RGDP/GDP 2006

Column 3: RGDP/GDP 2007

Column 4: Share of RGDP in National GDP

Column 5: Distribution of Losses by region

Column 6: Value of Losses by Region

Column 7: Decline in GDP growth by region (%)

Propinsi / Nasional	2006		2007			
	PDRB / PDB **	PDRB / PDB **	Rasio PDRB terhadap PDB Nasional (%)	Rasio Kerugian per Propinsi **** (%)	Besar Kerugian per Propinsi *****	Penurunan Pertumbuhan PDRB / PDB (%)
DKI Jakarta	311,510	331,135	16.88	49.00	1,827.19	0.59
Bo-De-Bek (Kab/Kot)	75,561	80,322	4.09	27.00	1,006.82	1.33
Tangerang (Kab/Kot)	34,153	36,305	1.85	24.00	894.95	2.62
Total	421,225	447,762	0.23	100.00	3,728.96	0.89
Indonesia	1,845,772	1,962,056	100.00			0.20