URBAN RISK ASSESSMENT

JAKARTA, INDONESIA

MAP

Administrative map of Jakarta[1]

CITY PROFILE

Jakarta is located on the north coast of the island of Java in the Indonesian archipelago in Southeast Asia. It is the country's largest city and the political and economic hub of Indonesia. The city's built environment is characterized physically by numerous skyscrapers, concentrated in the central business district but also built ad hoc throughout the city, especially in the past 20 years. The rest of Jakarta generally comprises low-lying, densely populated neighborhoods, which are highly diverse in terms of income levels and uses, and many of these neighborhoods are home to varied informal economic activities. The population of Jakarta is considered wealthy relative to neighboring provinces and

[1] Source: DKI Jakarta

CITY SNAPSHOT

(From Global City Indicators)

Total City Population in yr: 9.6 million in 2010

Population Growth (% annual): 2.6%

Land Area (Km^2): 651 Km^2

Population density (per Km^2): 14,465

Country's per capita GDP (US$): $2329

% of country's pop: 4%

Total number of households (based on registered Kartu Keluarga): 2,325,973

Dwelling density (per Km^2): N.A.

GRDP (US$) 10,222

% of Country's GDP: 20%

Total Budget (US$) $3.1 Billion

Date of last Urban Master Plan: 2010

other islands, and indeed its Gross Domestic Product (GDP) per capita is more than four times the national average.

Jakarta is located in a deltaic plain crisscrossed by 13 natural rivers and more than 1,400 kilometers of man-made waterways. About 40% of the city, mainly the area furthest north near the Java Sea, is below sea level. Jakarta is prone to flooding from water draining through the city from the hills in the south, and also from coastal tidal flooding.

The successful provision and management of services by the provincial government is lagging in most sectors. In spite of a booming economy, much private-sector property development, Jakarta's spatial planning and infrastructure, as well as service provision—transportation, green space, affordable housing, clean water, healthcare, and education—have not kept pace with demand.

Traffic congestion is a major problem facing the city, with only incremental efforts to relieve congestion through the development of public transportation, most prominently, the TransJakarta Busway. The increasing number of vehicles on the streets of Jakarta is outpacing the development of new roads. Total gridlock in the city is projected to occur as early as 2016 under the transportation *business as usual* scenario.

Lack of piped-water provision is driving large multi-use developments and small residential communities alike to drill wells to access groundwater. This extraction of groundwater is causing areas of Jakarta to sink rapidly, particularly in the north of the city. Along with sea level rise, land subsidence is one of the greatest challenges facing Jakarta.

The provision of housing for the poor and lower-middle classes continues to be inadequate relative to demand. With consistent in-migration of people into the city, estimated at 250,000 annually, housing is in constant demand, but costs are escalating. Skyrocketing land prices and rampant private sector development that is under-regulated has resulted in a booming real-estate market that excludes the poor. Large informal settlements have grown over many years along waterways, natural rivers and reservoirs, contributing to the pollution and clogging of these areas.

There is currently no city-wide solid waste management plan for Jakarta. The waste collection mechanisms in the city are largely contracted out to private companies, with wealthier areas paying more, and consequently receiving better and more consistent service. In many areas, waste is collected and picked over by a highly efficient but informal waste picker and recycling community.

PILLAR 1 - INSTITUTIONAL ASSESSMENT

Agencies in Disaster Risk Management and Climate Change Adaptation

The key agencies in Jakarta responsible for coordinated efforts on climate change adaptation and disaster risk management are Kantor Asisten Pembangunan dan Lingkungan Hidup (Asbang)—Assistant to Secretary for Development and Environment Office; Badan Pengelola Linkungan Hidup Daerah (BPLHD)—the environmental agency; Badan Perencanaan Pembangunan Daerah (BAPPEDA)—the planning and development agency; Badan Penanggulangan Bencana Daerah (BPBD)—the provincial disaster management agency; Satuan Tugas Koordinasi dan Pelaksana (SATKORLAK)—the national disaster risk management board; and Biro Tata Ruang—the bureau of spatial planning.

- Assistant to Secretary for Development and Environment Office as a point of coordination for development and environment matters. Under this office, there are two bureaus which are Spatial Plan (Tata Ruang) and Infrastructure (Sarana dan Prasarana). Biro Tata Ruang is responsible for coordinating the development and management of short-, medium- and long-term spatial plans for the city. Within the plans are specific laws and articles articulating the incorporation of both climate change adaptation and mitigation actions as well as the need for disaster risk management. Biro Prasarana dan Sarana is responsible for monitoring city development. However, the implementation and enforcement of these laws and articles are through BAPPEDA and the Department of Public Works.

- BPLHD is the environmental agency and the key governmental contact for many of the non-governmental organizations (NGOs) and other organizations working at the community level. They are involved in a number of greenhouse gas emission abatement programs in Jakarta, including overseeing the development of a greenhouse gas emissions baseline, to be completed in 2011. BLPHD also manages a number of community-level adaptation initiatives and studies in partnership with NGOs and donor organizations.

- BAPPEDA is the development and management body for Jakarta. They manage large infrastructure projects such as sea-wall construction in north Jakarta and the building of floodgates along the rivers and major infrastructure projects like the East and West Flood Canals. They manage, finance and monitor the physical management of flood infrastructure carried out by Dinas Pekerjaan Umum (DPU) - the public works agency.

Institutional Snapshot

Leading agency coordinating Disaster Risk Management efforts:

Badan Penanggulangan Bencana Daerah (BPBD)

Government staff trained in early warning, preparedness, and recovery:

N.A.

Disaster Risk Management budget: *Actions and programs under different agencies*

Non-governmental organizations involved in Disaster Risk Management:

, Institute for Essential Services Reform, Mercy Corps

- BPBD was established as the citywide agency for disaster risk management at the end of 2010. Until then, disaster response was handled by SATKORLAK, which is a national association based largely in the fire department and acted more as a committee since it was not anchored in a particular agency or formalized into government structure. The formal empowerment and role of BPBD has yet to be fully developed, integrated and made widely public.

Relevant Policies and Legislation

Climate change is integrated to a limited extent in the medium and long term city spatial plans, but they relate for the most part to areas of the city which are experiencing the greatest harm from flooding or other problems. The official language in the plans acknowledges the need for climate-change related strategies as well as disaster mitigation and response plans, but does not go into specific detail.(See table below for climate change-related policies in the RTRW 2030 Spatial Plan.)

Adaptation plans to cope with extreme weather events and sea-level rise are piecemeal within the plans and agencies. More generally, the governor of Jakarta has made public commitments in the international arena to reducing the city's greenhouse gas emissions.

The plans and policies of BPBD are not yet known, although a city-wide strategy for disaster prevention and response will most likely be developed and managed by this agency. Within the National Action Plan for Disaster Risk Reduction (NAP-DRR), there are a number of listed actions for Jakarta specifically, but they have been developed by different sectors and ministries. The budget numbers included are the requests by the implementing party and have not been allocated or approved.

Policies Relating to Climate Change in the RTRW Spatial Plan 2030	
1	that the Capital Region of Jakarta as other major cities in the world facing global challenges,particularly global warming and climate change, which requires action on climate change, both adaptation and mitigation actions need to be included in spatial planning;
Article 5	5) To realize the integration and control of space utilization as referred to in Article 4, letter e, set the policy as follows: a. implementing nature conservation reserves, nature conservation area, area protection, water resources, and development of green space for urban ecological balance in Jakarta; b. improve the quantity and quality of green space as an effort to improve the quality of Jakarta city life; c. reduction in greenhouse gas emissions in an effort to anticipate global warming and climate change; and d. establish and maintain areas that have strategic value of the influential on environmental aspects.
Article 5	(8) In order to achieve disaster risk reduction as referred to in Article 4 letter h, set the policy as follows: a. develop infrastructure and facilities for natural disaster risk reduction; b. develop the infrastructure and non-natural disaster risk reduction; and c. promote adaptation and mitigation to prepare for the threat of global warming and climate change and increased risk of another disaster.
Article 10	3) Strategies to implement the policy referred to in Article 5 paragraph (5) c, include: a. implement the carrying capacity of natural resources and environmental capacity for sustainable development; b. apply the concept of environmentally friendly building and the concept of sustainable urban design; c. improve the quality and quantity of green space; d. increase alternative energy e. based waste management technology; f. improving wastewater treatment; g. reduce the use of ozone depleting substances; h. restore the function of mangrove forest;

	i. improve public facilities, mass transit, and j. improve the control of mobile source emissions and stationary sources.
Article 13	(1) Strategies to implement the policy referred to in Article 5 paragraph (8) letter a, including: a. develop infrastructure and facilities for flood control; b. improve and enhance the drainage system; c. develop a path, region, and disaster evacuation space; and d. build a sea dike in order to anticipate rising sea water.
Article 13	(3) Strategies to implement the policy referred to in Article 5 paragraph (8) c, include: a. direct utilization of disaster areas for cultivation activities that have a high adaptability; b. reducing disaster risk through redesign through the application of technology and engineering in disaster areas; c. mengembangankan North Coast region (northern) as an effort to anticipate changes in climate; d. improve the provision of open space for the anticipated blue intensity rainfall; e. create life side by side with water; and f. Laws refine areas of the building and the environment appropriate hazard threat.
Article 57	(1) The development of energy systems and networks referred to in Article 45 letter d is intended to merjamin supply reliability and continuity of supply of energy for household needs, services, trade, industrial, and transportation with respect to conservation and energy diversification factor. (2) energy conservation factors referred to in paragraph (1) attention to aspects of mitigation of climate change and global warming. (3) Development of energy systems and networks referred to in paragraph (1), include: a. electrical system; b. infrastructure systems of fuel gas and c. infrastructure systems of fuel oil.

[2]Articles found in the RTRW 2030 relating to climate change.

Ongoing Programs in Disaster Risk Management and Climate Change

An important step taken by the DKI government is the establishment of the provincial disaster risk management agency, BPBD. Currently, there is no comprehensive disaster risk management program for the city of Jakarta, or disaster response plan. There are a number of large-scale infrastructure projects, such as the Jakarta Coastal Defense that protects coastal neighborhoods from tidal surges, and the East and West Flood Canals. The Jakarta Coastal Defense has been presented to the Jakarta government as a feasibility study. The Canals are the largest and most ambitious projects for Jakarta in terms of flood management, but the intricate and smaller secondary and tertiary systems are still under-managed and inadequate.

Many of the alert systems work at the community level and are largely self-organized. These are generally warnings from upstream floodgates that water is getting high that are sent via SMS text message to neighborhood heads so they can warn their communities. It is unknown how many of these small and informal networks are actually in place. It appears that they evolved out of local necessity. Many of the resources for the smaller, community-level projects and programs come from local and international NGOs. Small government agencies at the neighborhood level (RT and RW) are allocated budgets for some infrastructure interventions, but they are not consistent across the city and in many cases kelurahan-level budgets are not spent in their entirety every fiscal year due in part to complicated and lengthy approval mechanisms by the provincial government, or a lack of capacity at the local level to carry out physical interventions. This is a national trend and not specific to Jakarta.

[2] Source: RTRW 2030, Biro Tata Ruang

Policy Shortcomings

Formalization, publication and awareness-raising are still sorely lacking in the areas of climate change and disaster risk management in Jakarta, both inside many government agencies and in the public realm. In many ways the Jakarta government is only beginning to comprehensively measure and understand the city's key vulnerabilities – as well as its strengths and resources—to become climate-resilient and to anticipate potential disasters. There is also a lack of coordination between the agencies described above, and very little enforcement of well-meaning laws to create a safer and more securely-built environment. BNPB (Badan Nasional Penanggulangan Bencana) was developed as the national coordinating and monitoring agency in 2008, with an operating budget for disaster response of about IDR four trillion (US$464 million). However, more is currently needed for upgrades and implementation as reported in the National Action Plan for Disaster Risk Reduction (NAP-DRR). The table below lists items submitted for financing by various agencies for Jakarta (not exhaustive, since Jakarta is included in initiatives that also include other cities).

Target	Location	Performance Indicator	Funding Indication (in approx. USD value)			Source of Funding	Implementing Party/Coordinator
	Province		2010	2011	2012		
Improvement of the roles of the supervisory and monitoring institutions in the context of disaster risk reduction	Jakarta	Availability of a special directorate responsible for safety with an authority that can assure compliance (of the operator of facility and infrastructure) with the applicable railway regulations	$92,453	$0	$0	APBN	The Ministry of Transportation, Directorate of Safety and Technicalities of Facilities, Directorate General of Railways
CBOs and Government	Jakarta	# of IEC materials produced/ guideline for advocacy developed	$8,841	$0	$0	PHLN	ECB Indonesia (Care-CRS-Oxfam-World Vision-Save the Children-Mercy-Corps- MPBI-IMC)
—	—	Support to national and local strategy for DRR and CCA linkages	$91,202	$91,202	$91,202	PHLN	National Council for Climate Change (DNPI), National Disaster Management Agency (BNPB)
To make the command post of the Ministry of Home Affairs as the center of disaster management communication and coordination	Jakarta	Availability of data and information on disasters in regions in the Disaster Command Post of the Ministry of Home Aff airs	$57,783	$0	$0	APBN	KEMDAGRI - Ministry of the Interior
ECB members-CBO's government	Jakarta	CP of ECB members compiled	$2,600	$5,201	$0	PHLN	OCHA - UN Office of the Coordination of Home Affairs
2 activities (Preparation of Program Guidelines and Planning)	Jakarta	Organization of activities for preparing program guidelines and planning which focus on the Main Program of the Ministry of Social Affairs in the National Disaster Management System namely "CCBDM" or community-based integrated disaster management aimed at increasing the capacity of the community in an integrated manner to be more prepared for anticipating future disaster through early warning system process, rapid response and social recovery	$432,715	$519,258	$623,110	APBN	The Ministry of Social Affairs
Strengthening of regulation for responding to railway accident, including accident caused by disasters	Jakarta	Availability of Ministerial Regulation concerning guideline on the audit of the safety of railway facilities and infrastructure	$46,227	$0	$0	APBN	The Ministry of Transportation, Directorate of Safety and Technicalities of Facilities, Directorate General of Railways

Strengthening of regulation for responding to railway accidents including accidents caused by disasters	Jakarta	Availability of regulation concerning guidelines on investigation, examination and response to railway accidents, including those caused by disasters	$46,227	$0	$0	APBN	The Ministry of Transportation, Directorate of Safety and Technicalities of Facilities, Directorate General of Railways
Data management center, earthquake database and data sharing system	Jakarta	The realization of reliable national and international earthquake data service	$115,567	$57,783	$57,783	APBN	BMKG (Meteorology, Climatology and Geophysics Agency) Deputy for Geophysics
Mapping the region having high risk strong earthquake vibration	Jakarta	The availability of information for the need of earthquake-resistant building and other needs	$34,670	$34,670	$34,670	APBN	BMKG (Meteorology, Climatology and Geophysics Agency) Deputy for Geophysics
Improvement of earth magnet data and information service	Jakarta	Users may obtain more up to date data	$14,446	$0	$0	APBN	BMKG (Meteorology, Climatology and Geophysics Agency) Deputy for Geophysics

Sample projects for DRM and DRR activities submitted to the NAP-DRR by various agencies.[3]

Lead Agency for Disaster Risk Management

Until recently, a national ad-hoc agency (SATKORLAK) anchored in the fire department was responsible for disaster response, but was doing very little anticipatory planning. Jakarta did not have a dedicated working group or agency. At the end of 2010, BPBD was established for the province of Jakarta. As it is a new agency, the role it will play in the development of disaster mitigation plans or funding allocation for the city's kota or kelurahan remains unclear.

Mainstreaming Risk Reduction

In order to mainstream risk-reduction activities, the government is incorporating those activities and projects into the long-term spatial plans, the most recent of which is Jakarta's plan for 2010-2030. NGOs and other donor organizations are currently playing important roles to aid communities and community-level government actors to educate and prepare individual citizens, families and community leaders to prepare for damaging events such as floods from extreme rainfall or tidal flooding. However, these actions are piecemeal across the city and it is mostly poor communities that are targeted by these organizations.

Expenditure on Pro-Poor Programs and Climate Adaptation

The 2011 city budget for Jakarta is slightly more than US$$3 billion. Indonesia has a countrywide poverty alleviation program (Program Nasional Pemberdayaan Masyarakat (PNPM) - Mandiri or the National Program for Community Empowerment4) that has had success in other urban areas, but has not adequately reached extremely poor parts of Jakarta. Many of the poverty reduction actions are disbursed throughout various services and departments.

[3] Source: National Action Plan for Disaster Risk Reduction, DKI Jakarta
[4] For more information see www.pnpm-mandiri.org

Total Annual Budget of Departments Carrying Out Pro-Poor Services[5]

Agency/Department	Annual Budget 2010
Community Empowerment	$4,757,965
Health	$198,596,454
Family Planning and Prosperity	$4,810,028
Social Services	$5,243,572

The most relevant spending on climate change adaptation related infrastructure. This is not the entire budget, but lists some larger-scale initiatives[6].

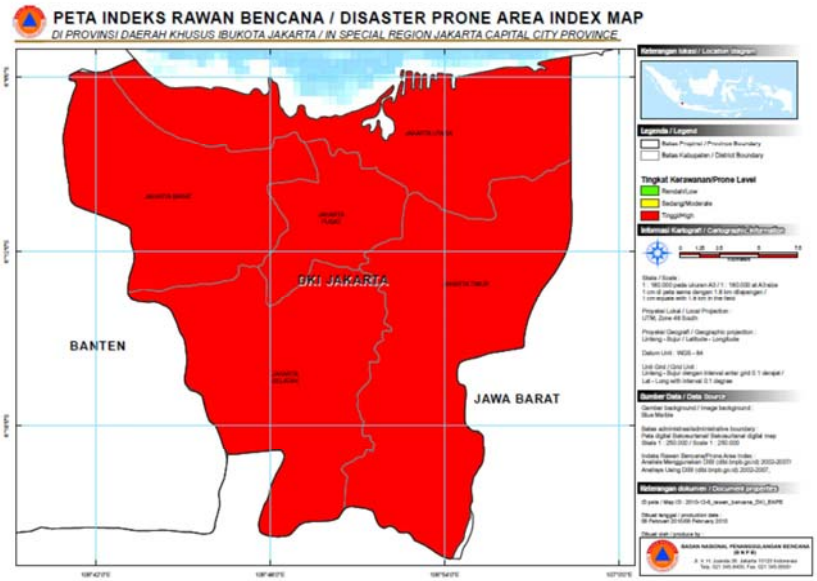
Infrastructure Investments per Year DKI	2009	2010
Flood Control		
East Flood Canal	$93,132,994	$60,350,180
Drainage and River Dredging	$10,803,427	$11,424,314
Dam, polder and catchment area development	$620,887	$40,605,985
Pollution Containment		
Open Green Space Development	$15,909,599	$77,238,296
Climate Change Adaptation		
Sea Wall	$2,235,192	$5,587,980

Institutional Mapping of Disaster Risk Management Functions

	Risk reduction		
Risk Assessment	Technical (planning, management, maintenance)	Early Warning and response	Public Awareness
DNPI • Climate change technical studies • Mitigation activities coordination	BNPD • National DRR plans and policies • NAP-DRR (2010)	RT and RW • Localized early warning systems for floods via SMS and	BPLHD • Climate change related events and programs like car free day
BPBD • DRM and DRR plans, management and training	BPBD • local disaster management and response plan for Jakarta (to come).	DKI Department of Public Works (PU) • Early warning system coordination with other provinces (water management)	DNPI • Conferences and publications
BAPPENAS • Inter-agency coordination for infrastructure plans	BAPPEDA • Infrastructure and planning projects; maintenance with PU and other agencies	SATKORLAK • Emergency Response	Biro Tata Ruang • Publication of 20 year spatial plan available to public.
P2B • Risk mapping for earthquakes			

[5] Source: www.jakarta.go.id
[6] Source: www.jakarta.go.id

PILLAR 2 - HAZARDS ASSESSMENT



Map of Ranking of disaster-prone area by BNPB in 2008, with red being the most disaster prone. Maps beyond this level of detail do not yet exist.[7]

Past Natural Disasters

The largest floods in Jakarta's history are those that took place in 2002 and 2007. Jakarta's floods are notorious, and the resulting stalling of traffic, lost productivity and property damage is said to cost the city more than US$400 million per year[8]. By 2002, more than a quarter of Jakarta's area was affected. The most disastrous flood to date, in February 2007, cost 57 lives, displaced more than 422,000 people, and destroyed 1,500 homes, damaging countless others. Total losses to property and infrastructure were estimated at US$695 million[9]. However, flooding of that magnitude is relatively infrequent and is not necessarily the principal issue for Jakarta—flooding occurs regularly throughout the year, stalling traffic, damaging houses and gravely affecting the flow of business at all levels of society. Even with just a moderate amount of rain, traffic mobility in the city is critically impaired, often for hours.

In the NAP-DRR, parts of Jakarta are listed as vulnerable to three hazards listed in the report. However for DKI Jakarta, the analysis does not go beyond

Natural Hazards Snapshot

	Y /N	*Date of last major event*
Earthquake	***Y***	***September 2009 and periodic***
Wind Storm	***N***	
River Flow	***Y***	***Regularly, extreme during rainy season***
Floods, Inundations and waterlogs	***Y***	***October 2010***
Tsunami	***N***	
Drought	***N***	
Volcano	***N***	
Landslide	***N***	
Storm Surge	***Y***	***January 2008 and recurring***
Extreme Temperature	***Y***	***Increasing on a yearly basis***

[7] Source: bnpb.go.id
[8] http://www.dredgingtoday.com/2010/07/23/indonesia-problems-with-flooding-in-jakarta-continues/
[9] *Why Are There Floods In Jakarta? Flood Control by the Government of the Province of Jakarta*, PT Mirah Sakethi, 2010

the level of the kota, so it is hard to know how the risk affects different areas of the municipalities and their diverse populations.

Table 1 - Jakarta's Kota in the National Ranking of Kabupaten or Regencies at HIGH risk for various disasters.

Earthquake (out of 151 listed)	
80	West Jakarta
95	North Jakarta
122	East Jakarta
137	South Jakarta
Drought (out of 182 listed)	
8	North Jakarta
9	East Jakarta
10	Central Jakarta
11	West Jakarta
37	South Jakarta
Flood (out of 174 listed)	
2	North Jakarta
3	West Jakarta

Main Climate Hazards

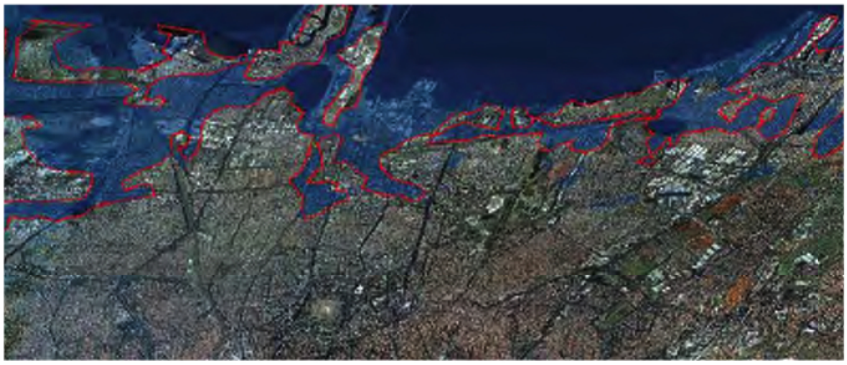
The main hazards for Jakarta relate to water management and flood control. Extreme weather events cause overloading of the existing drainage system, while sea-level rise coupled with land subsidence is making Jakarta increasingly vulnerable to tidal floods due to its coastal location. Jakarta has also experienced earthquakes (although minor, but as recently as 2009) and should be prepared for other unprecedented geological events and tsunamis.

Hazard	Effects	Losses
Earthquake	Until now small in scale with very little physical damage.	Until now no great material or life loss from earthquakes.
River Flow	Disruption of business, damage to property, power outage, groundwater pollution, distribution of solid waste through high and fast water flow.	Property damage, business damage, tainting of ground water, loss of life, spread of disease and refuse.
Floods, Inundation	Depending on severity can affect traffic circulation, business activity, damage to property, power outages, displacement, and spread of disease.	Loss of property and businesses, spread of illness and loss of life, loss of access to clean water.
Storm Surge	Locally known as rob, extreme tidal floods from the sea have become more serious in the past few years in the coastal areas of the city. Seawater intrusion into aquifers.	Seawater intrusion into drinking water, damage to property including boats, halt of industry and mobility.
Extreme Temperature	As a result of both urbanization and loss of green space, increases in ground temperature and resulting instances of dengue.	Loss of life due to dengue, usually in very poor communities.

Areas at High Risk of Disasters and Climate Impacts

In the sea-level rise scenarios that have been modeled for North Jakarta, there are a number of industrial and residential areas and ports that will be submerged in the next 100 years, given projected sea-level rise and land subsidence. Most of Jakarta's remaining industries are located in the north, as are its historic and active ports, which are key for Java's fishing economy. The airport and major roads, as well as Kota Tua, the 17th century remnants of the first Dutch settlement, will also be affected.

Figure 6.3. Impact of Sea Level Rise Caused by Global Warming: Jakarta in 2050



Blue = inundation due to sea level rise at 1 cm/yr

(ITB 2007)

Figure 1 - Impact of sea-level rise on North Jakarta in a business-as-usual scenario.

Other sources of Information on Potential Impacts of Disasters

- Jakarta Coastal Defense Strategy (JCDS): Recommendation and study by an international consortium to build a 60 kilometer long sea defense along the coast to prevent damage from both land subsidence and sea level rise. The consortium is funded by the city of Rotterdam and is still only at a feasibility study stage.[10]

- Jakarta Urgent Flood Mitigation Project (JUFMP): A study and dredging plan by the World Bank and DKI Jakarta, which included the "Jakarta Flood Hazard Mapping Framework" which does not include cost analysis but provides the infrastructure framework required. However, the complete financial study is available at DKI and the World Bank.[11]

- The Jakarta Building Control and Monitoring Office (Penataan dan Pengawasan Bangunan: P2B) is developing a risk map for Jakarta within micro-zones of 150 square meters each, which analyzes buildings and soil conditions. This initiative relates specifically to earthquakes and building quality. The map is not yet complete.[12]

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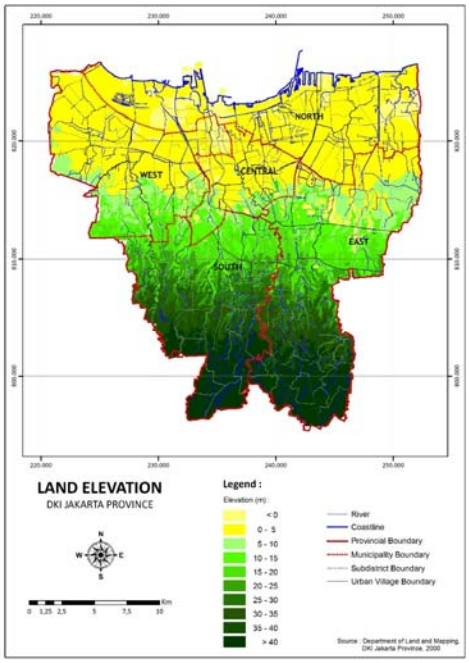
[10] http://www.beritajakarta.com/2008/en/newsview.aspx?idwil=0&id=17983

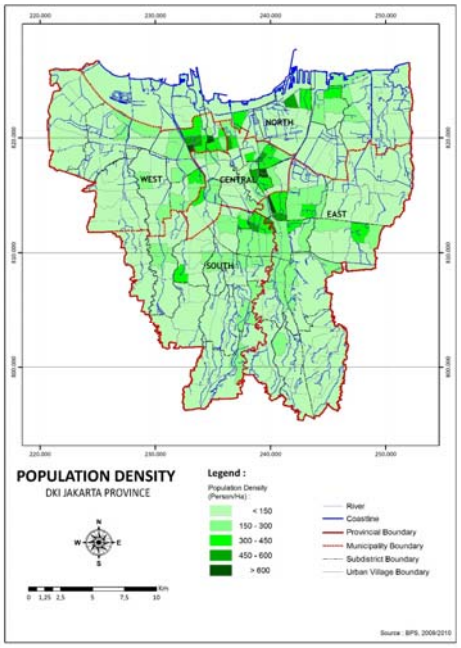
[11] http://web.worldbank.org/external/projects /main?pagePK=64283627&piPK=73230&theSitePK=40941&menuPK=228424&Projectid=P111034

[12] Source: http://www.thejakartaglobe.com/opinion/editorial-mapping-out-path-to-a-quake-ready-jakarta/432586(downloaded on April 25, 2011)

PILLAR #3 -SOCIECONOMIC ASSESSMENT

Population Exposure to Hazards





All of Jakarta is considered at high risk to disaster, since very few areas of the city are immune to recurrent floods. However, the most vulnerable areas of the city are those along the coast, since they are susceptible not only to the effects of tidal flooding from the sea, but also floods from the rivers and canals that are discharged into Jakarta Bay. These communities in the northern areas are also experiencing the greatest land subsidence. The poorest people in Jakarta are generally those squatting on empty land along riverbanks and canals. It is estimated that they comprise about 3.5% of the urban population.

Location of the Urban Poor

The level of exposure of very poor communities in Jakarta to both climate and natural hazards is extremely high. This is due in part to the fact that many of the poorest communities have settled illegally in areas close to sources of water—along major drainage and water management areas and along the coast. This renders them vulnerable to both flooding due to increased rain, as well as extreme hydrological events and tidal anomalies and floods from the sea.

Social Assessment Snapshot

Percentage of city population below poverty line: 3.6%

Social inequality (Gini index) in 2002 (UN Habitat): .32

Unemployment (% of total labor force): 11.05%

Areal size of informal settlements as a percent of city area: Unknown

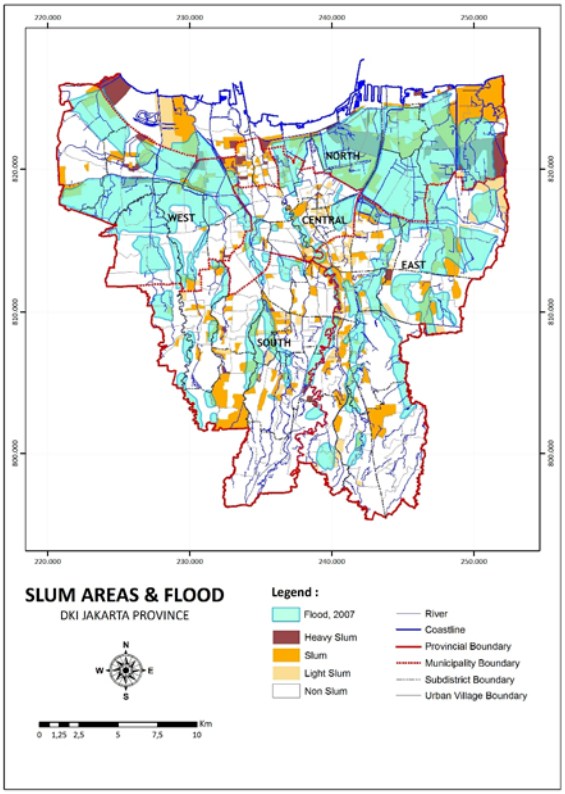
Percentage of city population living in slums: 5%

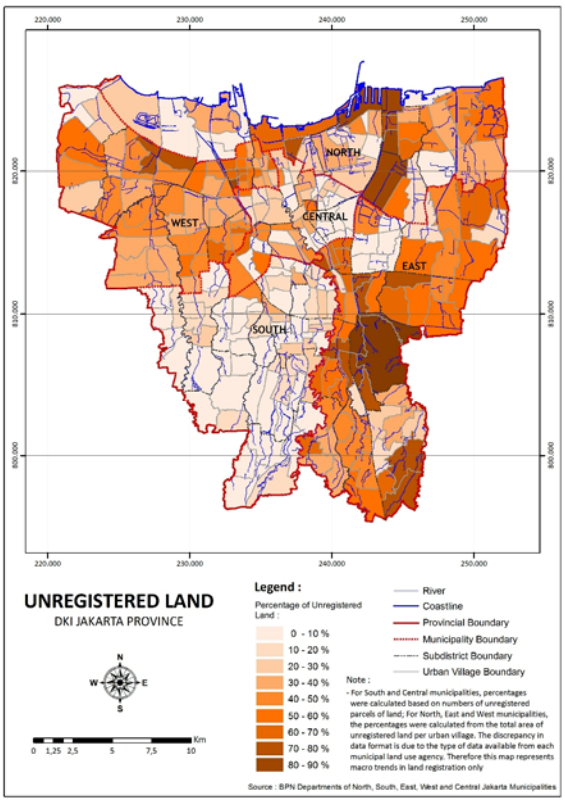
Percentage of households that exist without registered legal titles: N.A.

Percentage of children completing primary and secondary education: N.A.

Human Development Index: 77.36 in 2009

Predominant housing material: For the very poor, assorted salvaged materials, for self-builders, concrete blocks and brick.





Characteristics of Informal Settlements

The poorest communities in Jakarta live in self-constructed settlements, usually on land without formal legal title, and work in informal jobs. In some instances, illegal and undocumented land leasing and landlord-tenant contracting are practiced. Jakarta has a long history of these informal settlements. In many of these areas, some individuals and families have lived in what could be considered as 'slums' for decades, so well-established social networks and cultural identities in these areas of Jakarta run extremely deep.

While the numbers for Jakarta may be slightly lower, and remain hard to accurately measure, up to 68% of Indonesians across the country make their living through informal means.[13] In most areas of Jakarta, the residents of informal settlements work as maids, janitors, satpams (security guards), parking attendants and also run small local businesses such as food stalls and small tokos (retail kiosks). In coastal settlements, fishermen are key to providing larger companies with supplies of fish to sell across the city.

[13] International Labor Organization, 2010

Good Practice Examples

Jakarta has yet to develop a comprehensive plan to address extreme poverty in the city, especially in terms of involuntary relocation, housing provision and economic development of very poor communities. Indonesia has a number of poverty-alleviation policies like conditional cash transfers and other mechanisms, but many of these are not designed for the issues and challenges of a megacity. Many of the very poor subsist in jobs and small businesses that are part of Jakarta's vast informal economy. Integrating climate-change adaptation systems and education into regular social services and community awareness plans is new for the Jakarta government. It has really only been in 2011 that DKI Jakarta is engaging with local NGOs and other organizations and funders to develop and understand community resilience plans specifically focused on climate change disaster risk management. PNPM is a 10-year government poverty reduction program funded in part by the World Bank which will be incorporating disaster risk reduction activities into their established community empowerment mechanisms and capacity building, the addition US$15 million, funded over five years, is through a grant from the Global Facility for Disaster Reduction and Recovery, (GFDRR) starting in 2011. However only one or two of Jakarta's kelurahan may be eligible for this program.

Constraints and Opportunities

There is very little quantified, centralized information about the most vulnerable communities in Jakarta—the urban poor and informal settlements. However, the highly visible climate-vulnerable locations of these communities allows for easy identification of specific locations for interventions in spatial planning and social programming (like in North Jakarta and along many of the rivers). The creation and organization of data about the urban poor in Jakarta, and specifically about their livelihoods and economic contribution to Jakarta is key. Another asset in terms of community-information dissemination and preparedness is the already fairly decentralized local government structures of the RW and RT, with budget and administrative allocation down to a very disaggregated level in the city. With this strong system already in place, it is relatively simple to scale up or replicate good community-level programs across the city.

Greenhouse Gas Emissions Inventory

A greenhouse gas emissions inventory for Jakarta is currently under development in partnership with BPLHD, DNPI and the NGO group Swisscontact. The report is forthcoming in 2011.

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