

INDONESIA'S COUNTRY REPORT ON DISASTER RESPONSE MANAGEMENT

Overview of Risk Profile and Disaster Impacts in Indonesia

Indonesia is one of the most disaster prone countries in the world. The country faces multiple hazards such as earthquake, tsunami, volcanic eruption, flood, landslide, drought, and forest fires. Data from the United Nations International Strategy for Disaster Reduction (UN-ISDR) mentions that in terms of human exposure, or the number of people present in hazard zones that may lose their lives due to a hazard event, Indonesia ranks 1st out of 265 countries ranked for tsunami hazard, with 5,402,239 people exposed; ranks 1st out of 162 countries for landslide, with 197,372 people exposed; ranks 3rd out of 153 countries for earthquake, with 11,056,806 people exposed; ranks 6th out of 162 countries for flood, with 1,101,507 people exposed; and ranks 36th out of 184 countries for drought, with 2,029,350 people exposed.¹

In terms of economic exposure, which is calculated based on the amount of Gross Domestic Product (GDP) present in hazard zones that are subject to potential losses, for tsunami hazard, Indonesia ranks 5th out of 265 countries ranked, with US \$ 3.46 billions of GDP potentially lost to a tsunami-related disaster event; for earthquake hazard, it ranks 11th out of 153 countries, with US \$ 79.13 billions of GDP potentially lost; for landslide hazard, it ranks 11th out of 162 countries, with US \$ 0.84 billions of GDP potentially lost; and for flood hazard, it ranks 20th out of 162 countries, with US \$ 1.05 billions of GDP potentially lost. It can be said that both in terms of human exposure (mortality) and economic loss risks, Indonesia ranks among countries that have high risks.

Another similar data from the World Bank suggests that, in the overall, Indonesia ranks 12th among countries with relatively high mortality risks from multiple hazards. It is among the top 35 countries that have high mortality risks from multiple hazards with about 40 percent population living in hazard prone areas. For a country that has a population of around 238 million people, this percentage gives a very large nominal number of around 95.2 million people. These figures imply that a major humanitarian catastrophe might happen should large disasters occur.²

¹ Indonesia Risk Profile, accessed on 7 September 2010, at <http://www.preventionweb.net/english/countries/statistics/risk.php?cid=80>

² Disaster Risk Management in Indonesia, Country Note, the World Bank, 2010

Disaster historical data have shown that Indonesia has experienced a substantial number of disasters, with significant number of people killed. In the period of 1980-2008, according to the UN-ISDR, Indonesia has experienced 293 disaster events that have killed 189,615 people, with an average number of people killed per year of 6,538. The number of people affected by those disasters is even bigger, i.e. 18,195,948 people, with an average number of people affected per year of 627,446. Besides human losses, economic damage effect by disasters during the period is also huge. The country suffers an annual economic damage of US \$ 731,705,000 caused by disaster, with a total of US \$ 21,219,450,000 for the period of 1980-2008.³

Of the numerous disasters that have happened in Indonesia in the period of 1980-2008, the most frequently occurring is flood (104 times), followed by earthquake (68 times, including tsunami), wet land mass movement (37 times), volcanic eruption (34 times), epidemic (29 times) and the other smaller-scale disasters. The distribution of disasters occurred based on the types can be seen in the below figure.

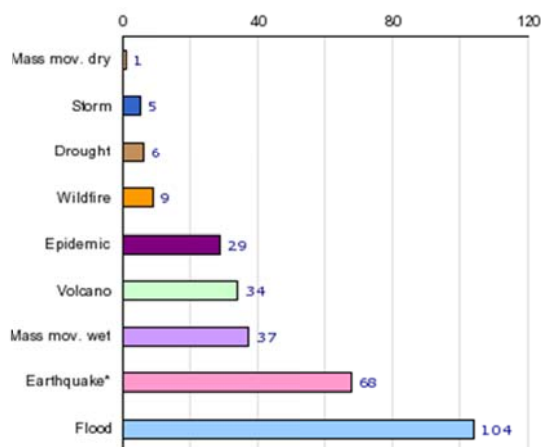


Figure 1. Natural Disaster Occurrence in Indonesia in 1980-2008

* Including tsunami

Of the 189,615 people being killed by disasters in the period of 1980-2008, approximately 95% were killed by earthquake and tsunami, while the other 3% by flood and 2% by epidemic. When in terms of the human loss geological disasters claimed more lives than hydro-meteorological disasters (climate-change related disasters) and epidemic outbreaks, in terms of the number of people affected by disaster, the situation is just the opposite. Out of the 18,195,948 people being affected by disasters in the period of 1980-2008, more

³ Indonesia Risk Profile, accessed on 7 September 2010, at <http://www.preventionweb.net/english/countries/statistics/?cid=80>

than 62% were affected by hydro-meteorological disasters, while around 34% by geological disasters and around 4% by epidemic outbreaks. Figure 2 below from the United Nations International Strategy for Disaster Reduction shows the percentage of reported people affected by disaster types.⁴

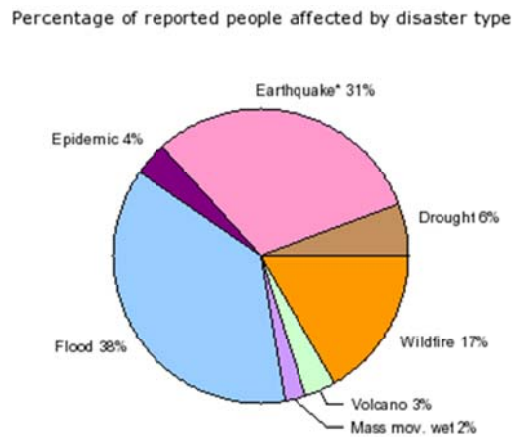


Figure 2. Percentage of People in Indonesia Affected by Disaster in 1980-2008

* Including tsunami

As has been mentioned earlier, in terms of economic damage for the period of 1980-2008 Indonesia suffers an economic loss to a total of US \$ 21,219,450,000. Of that enormous amount, the biggest loss is caused by wildfire (US \$ 9,329,000), followed by earthquake (including tsunami, at US \$ 8,962,726), flood (US \$ 2,372,789) and volcano (US \$ 344,190). Figure 3 below demonstrates the economic damages suffered by the country by disaster types.

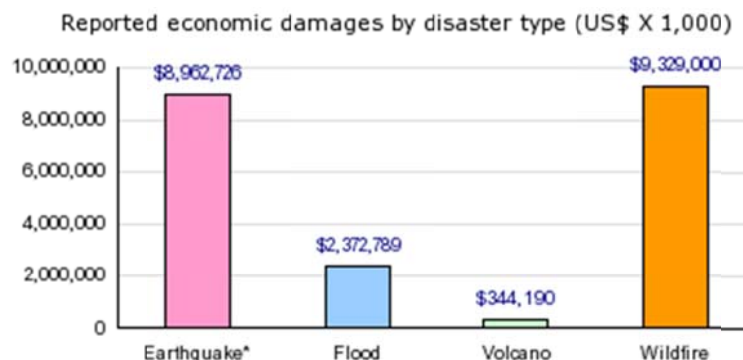


Figure 3. Economic Damages by Disaster Type in 1980-2008

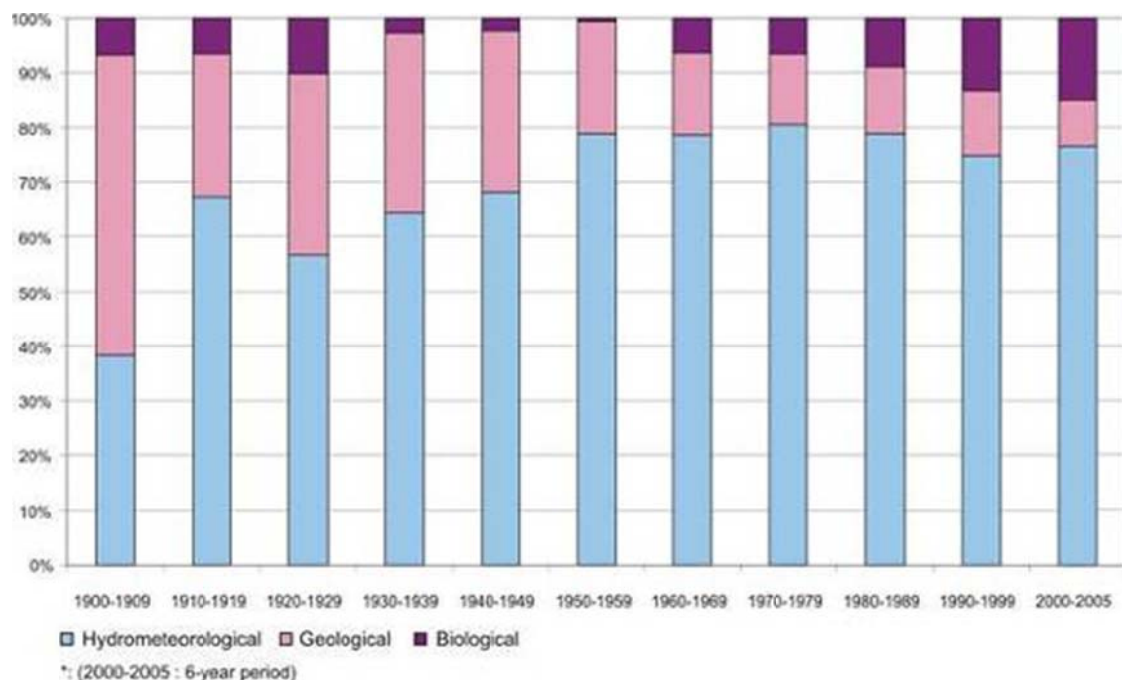
* Including tsunami

⁴ Idem

Nature of Disasters in Indonesia

When examined deeper, it can be seen that Indonesia has more hydro-meteorological disasters than geological and biological disasters. Besides being bigger in the number of disaster events, the economic damages caused by hydro-meteorological disasters are also bigger than those caused by geological and biological disasters, particularly if we consider that wildfire disaster are usually closely related to climate change (see figure 3 above). Also, as has been mentioned above, the majority of people affected by disaster are affected by hydro-meteorological disasters (more than 62%).

It is obvious that climate change has increased disaster events and made higher the intensity of meteorologically influenced events such as floods and droughts. In many parts of the world climate change has indeed generated hydro-meteorological-related disasters. Data from the United Nations International Strategy for Disaster Reduction mention that during the period of 1991-2005, around 76% of all disasters occurred in the world are hydro-meteorological disasters, while geological disasters only account for 10% and biological disasters 14% of the total.⁵ Figure 4 below presents World Distribution in Percentage of Natural Disasters: by Origin for 1900-2005.⁶



⁵ UN-ISDR: <http://www.unisdr.org/disaster-statistics/occurrence-type-disas.htm>, accessed on 20 September 2010

⁶ Ibid, with source from: EM-DAT: The OFDA/CRED International Disaster Database: <http://www.em-dat.net>, UCL - Brussels, Belgium

Figure 4. World Distribution in Percentage of Natural Disasters 1900-2005: by Origin

From the above chart it could be seen that in terms of their origin, in the past 105 years, hydro-meteorological disasters have far surpassed their geological and biological counterparts. Since hydro-meteorological disasters are closely related to the climate factor, these data may suggest that there has been a growing influence of climate change on disaster situation in Indonesia.

With the current rate of global warming, it is projected that approximately 2,000 islands in Indonesia will disappear by 2030 due to sea level rise. The same sea level rise will submerge major portions of the northern part of Indonesia's capital city, Jakarta, by 2050.⁷ The disappearance of smaller islands, together with climate change related-coral bleaching and ocean acidification may pose severe long-term threats to poor fishers whose livelihood depend on marine biological resources. In the long run this may also reduce the capacity of these people to cope with potential disasters.

A Climate Change Vulnerability Mapping for Southeast Asia conducted by the Economy and Environment Program for Southeast Asia (EEPSEA) suggests that Indonesia is among the countries that are highly vulnerable to climate change.⁸ The study defines vulnerability as a function of exposure, sensitivity, and adaptive capacity, in line with the terminologies of the Intergovernmental Panel on Climate Change (IPCC).⁹ In the overall assessment, seven districts/cities in Indonesia rank among the top 10 most vulnerable regions in Southeast Asia, with Central Jakarta (*Kota Administrasi Jakarta Pusat*) holding the first rank as the most vulnerable city in the region. The second and third places are held by North Jakarta City and West Jakarta City consecutively. The figure 6 below presents part of the list of vulnerable provinces and districts/cities in Southeast Asia.

⁷ Indroyono Soesilo, Ph.D., Presentation at the Ministry of Home Affairs

⁸ Arief Anshory Yusuf & Herminia A. Francisco, Climate Change Vulnerability Mapping for Southeast Asia, Singapore: 2009

⁹ IPCC defines exposure as "the nature and degree to which a system is exposed to significant climatic variations"; sensitivity is defined as "the degree to which a system is affected, either adversely or beneficially, by climate-related stimuli"; and adaptive capacity is defined as "the ability of a system to adjust to climate change (including climate variability and extremes), to moderate the potential damage from it, to take advantage of its opportunities, or to cope with its consequences".

COUNTRY/ PROVINCE	VUL	RANK	CHAZ	SENS	ADAP	PDEN	PROT	POP	INC	POV	HDI
CAMBODIA											
Mondol Kiri	0.83	4	0.02	0.37	0.99	3	0.56	42	1,409	52.0	0.43
Rotanakiri	0.78	6	0.05	0.25	1.00	9	0.37	121	1,409	52.0	0.42
Kampong	0.67	11	0.22	0.16	0.75	91	0.24	730	1,029	52.0	0.51
Preah	0.64	13	0.01	0.26	0.82	11	0.38	152	1,409	52.0	0.29
Pouthisat	0.56	24	0.17	0.27	0.50	31	0.41	428	1,347	42.8	0.56
INDONESIA											
Central	1.00	1	0.65	1.00	0.00	20,419	0.00	889.00	21,708	3.2	0.89
North	1.00	2	1.00	0.61	0.04	12,400	0.00	1,446	9,822	6.3	0.85
West	0.90	3	0.77	0.68	0.04	9,993	0.29	2,093	7,841	2.7	0.83
East Jakarta	0.79	5	0.65	0.64	0.03	13,116	0.00	2,391	5,371	3.0	0.82
South	0.77	8	0.65	0.60	0.04	12,282	0.00	2,001	8,375	3.2	0.84
Kota	0.77	9	0.58	0.65	0.06	13,298	0.00	2,289	2,374	3.7	0.75
Kota	0.75	10	0.70	0.53	0.03	10,729	0.00	2,612	5,761	7.5	0.79
Kota Bekasi	0.65	12	0.64	0.40	0.06	8,260	0.00	1,993	1,496	3.6	0.72
Kota Bogor	0.63	14	0.65	0.33	0.08	6,664	0.00	891	1,017	8.9	0.70
Kota Depok	0.63	15	0.65	0.34	0.07	6,959	0.00	1,375	876	2.9	0.71
Kota	0.60	16	0.72	0.25	0.05	5,012	0.00	1,342	2,112	9.4	0.74

**Figure 6. List of Vulnerable Provinces/Districts in Southeast Asia
(Southeast Asia Standard)**

Disaster Response Strategies in Indonesia

There is a need to realize that there are important linkages between poverty reduction, sustainable development, climate change impacts, and disaster risk reduction issues. The Hyogo Framework for Action (HFA) adopted in Kobe, Japan, at the 2005 World Conference on Disaster Reduction highlights the need for integrating disaster risk programs comprehensively, increasing institutional and personnel capacities in reducing disaster risks, and integrating disaster risk reduction within sustainable policy, planning, and development processes.

From disaster risk reduction point of view, Indonesia is committed to the HFA, as shown in the formulation of the National Action Plan on Disaster Risk Reduction (RAN PRB), which is a guideline issued every 3 budget-year and contains the grounds, priorities, action plan as well as institutional and implementation mechanisms of the action plan. The action plan constitutes a strong and systematic ground for cross-sectoral and cross-territorial priorities in reducing disaster risks. The first action plan covered the period of 2006-2009, and currently the action plan covers the period of 2010-2012.

As part of the institutional strengthening of disaster management system in the country, Indonesia has also launched its National Platform for Disaster Risk Reduction (Planas PRB) in 2009. This multi-stakeholder forum promotes disaster risk reduction and mobilizes the community and the relevant stakeholders to implement risk reduction measures based on the Hyogo Framework for Action. Several provinces and districts/cities are in the process to establish similar DRR forums.

A milestone in the country's disaster management arena was reached in 2007 when the national parliament passed the Disaster Management Law (Law no.24 of 2007). The law marked a shift of paradigm from a previously response-oriented disaster management to disaster risk reduction. Subsequent to that Indonesia enacted a number of ancillary regulations and numerous rules and procedures that regulate the many aspects of disaster management in the country, with the involvement of all stakeholders.

In the institutional aspect, the year 2008 saw the official establishment of the National Agency for Disaster Management (known as *Badan Nasional Penanggulangan Bencana*, or BNPB) through the Presidential Decree No. 8/2008. BNPB is a ministerial level independent body that has the authority to coordinates and implements disaster management programs and activities. Prior to the establishment of BNPB, disaster management in Indonesia at the central level was managed by National Coordination Body for Disaster Management (Bakornas PB), a coordinating body headed by the Vice President and directly responsible to the President.

The establishment of BNPB strengthens disaster management efforts, which are also handled by the National SAR Body (Basarnas), the Indonesian Red Cross (PMI), Indonesian Armed Forces (TNI), and various other actors such as students volunteers (Menwa).

The Government of Indonesia, with the establishment of the National Agency for Disaster Management (*Badan Nasional Penanggulangan Bencana/BNPB*) as the coordinator of all ministers/agencies in disaster management measures, has made much progress in promoting better disaster management in the country.

At the local levels disaster management was managed by an ad-hoc coordinating body that consists of representatives of local government offices, the local military and police, and local SAR agency. The establishment of BNPB (and BPBD at the local level) constituted a significant progress in the

field of disaster management as it signified the departure from an “ad-hoc” and responsive approach to disaster management. To date, 27 of 33 provinces in Indonesia have established their Local Disaster Management Agencies (BPBD), while at the district/city levels more than 140 districts/cities out of 275 districts/cities in hazard-prone areas have set-up BPBDs.

As part of the effort to build an integrated disaster management system, at the national level, the Government has formulated the National Plan on Disaster Management (*Rencana Nasional Penanggulangan Bencana*) for 2010-2014. The plan contains disaster reduction programs and activities that will be integrated into the national and local development plans. At the more operational level, BNPB has also coordinated the implementation of risk reduction measures based on the National Plan and the HFA, including through the set-up of two Disaster Rapid Response Teams that can be mobilized in just hours to respond to major disasters. The agency, in cooperation with the other ministries/agencies, has facilitated many local governments in preparing disaster contingency plans, organizing disaster simulations and exercises and other initiatives to build disaster resilience at all levels. Many ministries and agencies other than BNPB have also implemented disaster risk reduction programs in line with their key duties and responsibilities.

Indonesia has developed quite a significant number of disaster risk reduction programs and activities. Some of the programs, like the coastal erosion and tsunami mitigation initiatives implemented by the Ministry of Marine Affairs and Fishery even combine climate change adaptation, disaster risk reduction, and livelihoods objectives.

Several international organizations, such as the United Nations Development Programme (UNDP) and the World Bank, have supported the government in piloting initiatives at the community level that integrate disaster risk reduction and climate change adaptation. Through the Safer Communities through Disaster Risk Reduction (SC-DRR) project, BNPB, Bappenas and UNDP implements village resilience initiatives at six villages in the Province of the Special Region of Yogyakarta and another six villages in Central Java Province. Through the project the village governments and communities developed village disaster management plans that combine DRR and CCA programs.

The World Bank supports the government through the Climate Resilient Cities (CRC) framework that is intended to promote Local Resilient Action Plans by engaging local government, universities, communities and NGOs to

reduce the negative impacts of climate change and to improve community preparedness to disaster in two sub-districts in the City of Yogyakarta. Similarly, international Non-governmental Organizations such as Oxfam, Catholic Relief Service (CRS), Action Contre la Faim (ACF), Plan International and many others have collaborated with local governments in implementing integrated DRR and CCA programs at the community level.

In terms of international cooperation, Indonesia has been actively participating in various international forum on disaster management, and the high appreciation of Indonesia's role in this field is shown with Indonesia being the hosts of international forum such as the ASEAN Regional Forum Disaster Relief Exercise (ARF Direx) held in Manado in March 2011; International SAR Forum and International Search and Rescue Advisory Group (INSARAG) Asia Pacific Regional Meeting to be held in Bali in July 2011; and the 5th Asian Ministerial Conference on Disaster Risk Reduction (AMCDRR) to be held in Yogyakarta in 2012.

Indonesia has also been participating in the many humanitarian situations, among others by contributing disaster relief funding through the Central Emergency Response Fund (CERF) and sending relief team to countries hit by major disasters, including Haiti and Japan. Indonesian community has also shown an increasing interest in participating in humanitarian issues and relief effort in the global level. Indonesia also cooperates with United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA) to enhance disaster management and relief capacity as well as with the United Nations Office of the Recovery Coordinator (UNORC) for the rehabilitation and reconstruction of areas hit by disasters.

Future Direction

There is a need to improve sub-regional, regional, and international coordination in the field of disaster management and disaster risk reduction, particularly in the development of early warning mechanisms and disaster preparedness to minimize the impact of disasters. In this regard, Indonesia needs to keep utilizing existing multilateral cooperation and national measures to improve institutional capacity and people's awareness in the effort of reducing disaster risks and impacts.

The Government of Indonesia is committed to pursuing a synergized approach to its disaster risk reduction and climate change adaptation programs for the future. In its National Middle-Term Development Plan (RPJM) 2010-2014,

which lays out specific national, regional, and sectoral plans and serves as a basis for annual budgeting, disaster response management along with environmental issues (including climate change) sit as the ninth priority out of eleven national priorities, where it calls for the conservation and managing of nature to support sustainable economic growth and welfare which is accompanied with disaster risk management to anticipate the occurrence of disaster. The plan has fundamentally been developed to meet the principles of pro-poor, pro-growth, pro-job and pro-environment.

In addition to the ninth priority, the plan contains action programmes such as (1) climate change mitigation in forestry sector; (2) control of environmental damage; (3) development of early warning system; and (4) disaster management. In line with that, the government emphasized disaster risk reduction policy direction (1) to put disaster risk reduction mainstreaming as national and local priorities; (2) to build disaster risk reduction capacity at the national and local levels; (3) to optimize the instruments in controlling disaster mitigation based spatial lay out; and (4) to increase community participation in disaster management and disaster risk reduction. In response to these issues, the Government of Indonesia allocates 2.1 M USD and 370,000 USD for climate change adaptation and disaster risk reduction. Furthermore, the National Action Plan for Disaster Risk Reduction (RAN PRB) and National Action Plan for Climate Change (NAP CC) were developed to meet the RPJM 2010-2014.

The government also seeks partnership with other initiatives to support action on disaster management from international development partners such as AFD, USAID, JICA, UNDP and the World Bank. Referring to the Second Global Platform for Disaster Risk Reduction in Geneva in 2009, where countries pledged a global commitment of allocating a minimum of 10% budget for disaster recovery, a minimum of 1% from development budget and 30% from Climate Change Adaptation budget, the government is now developing a trust fund namely IMDFF-DR (Indonesia Multi Donor Fund for Disaster Recovery) and ICCTF (Indonesia Climate Change Trust Fund) for climate change adaptation to realize the commitment. Efforts are also being done to develop Risk Financing Framework in Indonesia, which is still relatively under developed, to manage alternative instruments of funding through risk transfer or retention.

The Government of Indonesia believes that good disaster management constitute key priority areas to protect the poor, who will likely experience the greatest impacts, yet have the least resources and capacity to respond, and

therefore will continuously support efforts and cooperation in the field of disaster management.

