

# KOTA MATARAM – NATURAL DISASTER VULNERABILITY PROFILE

This profile summarises the vulnerability of the Natural, Built, Social and Economic environments of Mataram City to natural hazards. The Disaster Risk reduction initiatives by the local government are also described.

## 2016



GRC Masjid Mataram - the Mataram Islamic Centre



NEW ZEALAND  
MINISTRY OF FOREIGN AFFAIRS & TRADE  
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# NATURAL ENVIRONMENT

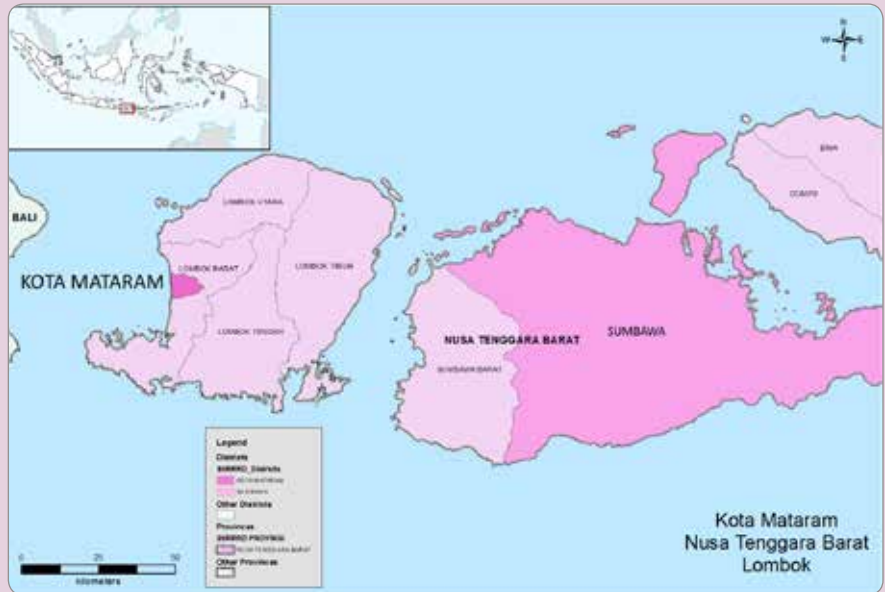
Mataram City is located in West Nusa Tenggara (NTB) province, Indonesia (Figure 1). The city is located next to the West Lombok District with the Lombok Strait on its western margin. Mataram is the capital of Mataram City district as well as the capital of West Nusa Tenggara Province. Mataram has an area of 61.30 km<sup>2</sup>.

## Hazards and Risks

Mataram City is at risk from a range of natural hazards. Observed events include floods, extreme weather, drought, extreme waves and erosion, earthquakes, landslides, volcanic eruptions, and social conflicts. While a large tsunami has not been observed in Mataram, this is a potential hazard due to the city's close proximity to the ocean. Mataram has a BNPB Disaster Risk Index Score of 149 (high) and is ranked 302nd out of the 496 districts assessed (BNPB 2013).

## Natural Environment Vulnerability

The active geological processes associated with the collision of Indo-Australian and Eurasian tectonic plates, makes Mataram vulnerable to natural disasters. The Sunda



Trench, to the south of Mataram, can experience large earthquakes capable of generating tsunamis that can affect the region. In addition, the presence of local active faults north of Lombok Island increases the risk of earthquakes. Formed by active volcanic processes, the island is also at risk from future eruptions.

Being located on an alluvial outwash plain, Mataram is vulnerable to frequent flooding, particularly in the rainy season. Due to its low-lying elevation, the city is also influenced by coastal processes from the long stretch of coast bordering the Lombok Strait with abrasion of the coastal margin common.

**Table 1.** Assessment of risk from hazards for Mataram Regency (Disaster Risk Index–2013).

Threat	Earthquake	Tsunami	Flood	Landslide	Coastal Erosion	Forest Fire	Drought
Risk	Moderate	Moderate	Moderate	High	High	High	Moderate

# SOCIAL ENVIRONMENT

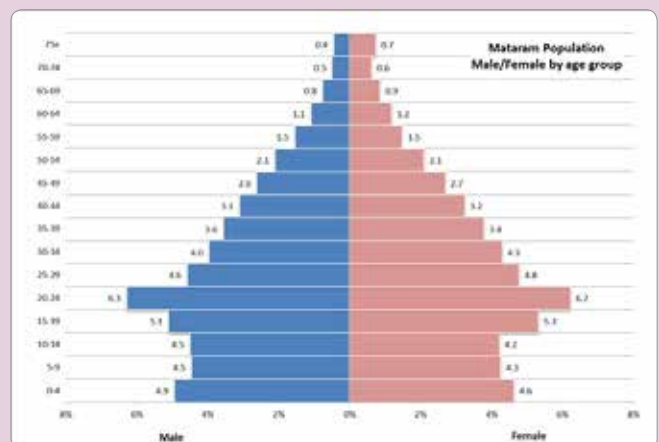
The population of Mataram City in 2014 was 441,054. The average population density of the district is 7,195 people per km<sup>2</sup>. Ampenan sub-district is the most densely populated with 9,096 people per km<sup>2</sup>. About 90% of the population is Muslim with Christians and Hindus making up most of the remainder of the religions within the district.

## Youthful Population

Mataram has a young population with over half of the population (51.9%) being 24 years old or younger. Younger people can be more vulnerable to disasters however this does present education opportunities on hazards and risks through schools. In addition, social media is a good education platform for children and young adults.

## Urban Population

Being largely urban, the population is inherently reliant on infrastructure, delivery of services and coordinated food supplies. This reliance means that communities in Mataram are vulnerable during a disaster due to these services being disrupted and increased competition for scarce resources.



Source: Mataram City in Figures 2015.

## ECONOMIC ENVIRONMENT

### Reliant on Imports

As an urban centre increasing in size, Mataram is becoming more reliant on sourcing goods and services from outside of the district. This reliance makes it more challenging to source resources during a disaster leading to increased competition and social conflict.

### Land conversion

The conversion of productive agricultural land to residential and industrial land diminishes the potential for crop production. However, while this transformation of generally reduces crop production, the limited capacity of remaining land is driving innovation and technology to increase agricultural productivity in Mataram.

## BUILT ENVIRONMENT

### Loose land use planning and control

There is no land use planning that identifies and restricts or reduces infrastructure development or buildings in natural hazard areas. As such, many buildings are at risk of flooding and new locations identified for development do not take either natural hazards or site ground conditions into consideration. There is little information or data on the specific location of buildings and their proximity to high risk natural hazard areas, such as floodplains.

### Poor construction quality of buildings

Many buildings in Mataram do not adhere to design specifications or have been constructed using inferior materials. As such, the integrity of many structures is not strong meaning they would likely fail in an earthquake or other natural disaster.

## DISASTER RISK REDUCTION CAPABILITY

The budget for Disaster Risk Management (DRM) in 2016 is 4.6B Rupiah (USD\$350 k) and has on average, increased since 2011. There is good political support for DRM in Mataram City.

### Coordination

While there is a structure to facilitate DRR activities in place through regulation and the establishment of the BPBD; education, training and collaboration on DRR needs improvement in Mataram. Discussions identified that there is a lack of community participation and knowledge on DRR activities resulting in the community becoming more dependent on government authorities. A DRR Forum would help coordination and networking amongst stakeholders.

### Ownership of DRR Responsibilities

In Mataram, it is not well understood that government agencies other than BPBD, private sectors and communities have a responsibility to implement disaster risk reduction measures. As such, DRR activities are not well coordinated or integrated across these groups and agencies. These stakeholders typically have the view that disaster risk management is the sole responsibility of the government and specifically BPBD.

### Better Knowledge of Potential Hazards and their Impacts

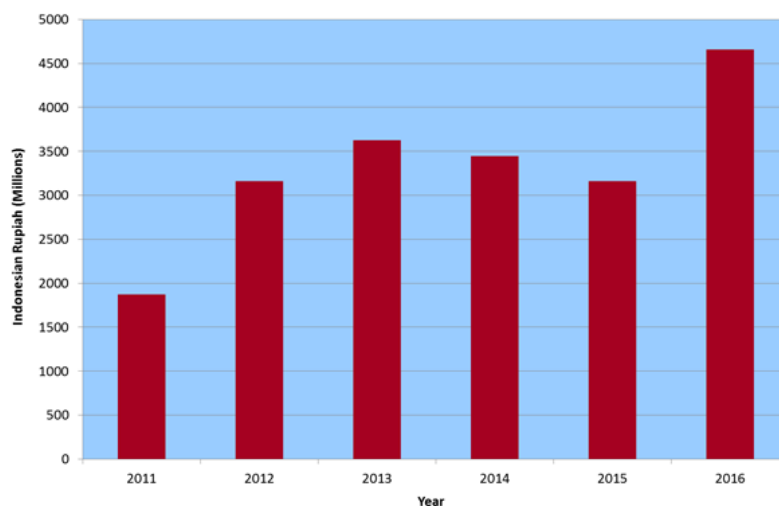
While risk maps have been developed for potential hazards in Mataram, there is not a lot understanding of hazards that may originate from outside of the city. A good example is the significant ash fall potential from a large eruption of a nearby volcano such as Mount Rinjani or Mount Agung. A better understanding of Mataram's full hazards profile will enable agencies and the community to be better prepared.

Performance score for each category of DRR  
Mataram, February 2015



The Local Government – Self Assessment Survey (LG-SAT) diagram summarises the strengths and weaknesses of the DRR environment for Mataram City, February 2015.

Mataram District Disaster Risk Management Budget (Million IDR), 2011-2016



Source: BPBD Mataram, 2016.

# ABOUT StIRRRD

## STRENGTHENED INDONESIAN RESILIENCE: REDUCING RISK FROM DISASTERS



With funding support from the New Zealand Aid Programme, Universitas Gadjah Mada (UGM) is partnering with GNS Science in an Activity which supports the Indonesian Government to reduce the impacts of natural disasters through increasing the disaster risk reduction (DRR) capability of local government and local universities. The Activity assists 10 districts and associated universities to understand their DRR issues and priorities, helps develop their capability to understand and manage these issues, and

then to develop an action plan and implementation programme. A key part of this involves cementing relationships between local government and local universities who will develop teaching and research programmes in aspects of disaster risk management to support their local communities. The districts involved in the Activity will also provide peer support to each other on the learning journey. The Project is supported by the Indonesian National Agency for Disaster Mitigation (BNPB) and Kemendesa.

### Sources:

BNPB, 2013. *Indeks Rawan Bencana Indonesia*.

BPS, 2015. *Kota Mataram Dalam Angka 2015*.

BPBD Kota Mataram, 2015. *Rencana Penanggulangan Bencana Kota Mataram*.

*Notes from StIRRRD Introductory Visit Workshop (24 November 2014)*.

*Notes from StIRRRD Preliminary Action Plan Workshop (26 February 2015)*.

*Notes from StIRRRD Women's Focus Group Discussion (28 February 2015)*

*Notes from StIRRRD Finalisation Action Plan Workshop (23 February 2016)*.

## FOR MORE INFORMATION:

<http://StIRRRD.org> or

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