



# Cities and Climate Change Initiative

ABRIDGED REPORT

Makassar  
Indonesia

Climate Change  
Vulnerability Assessment



**UN HABITAT**  
FOR A BETTER URBAN FUTURE



# Cities<sup>and</sup> Climate Change Initiative

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UN-Habitat Regional Office for Asia & the Pacific-Fukuoka  
United Nations Human Settlements Programme,  
ACROS Fukuoka Building, 8th Floor,  
1-1-1 Tenjin, Chuo-ku,  
Fukuoka 810-0001, JAPAN  
E-mail: [habitat.fukuoka@unhabitat.org](mailto:habitat.fukuoka@unhabitat.org)  
[www.fukuoka.unhabitat.org](http://www.fukuoka.unhabitat.org)

UNDP Indonesia Country Office  
MenaraThamrin 8-9th Floor,  
Jl. MH ThamrinKav. 3  
Jakarta 10250, INDONESIA  
[www.id.undp.org](http://www.id.undp.org)

UNEP Regional Office for Asia and the Pacific (UNEP/ROAP)  
2nd Floor, Block A, UN Building,  
Rajdamnern Avenue,  
Bangkok 10200, THAILAND  
Email: [uneproap@un.org](mailto:uneproap@un.org)  
[www.unep.org/roap](http://www.unep.org/roap)

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Principal author:	John Taylor
Contributors:	Omar Saracho, Ahmad Rifai
Satellite imagery analysis:	Arlene Ducao, Juhee Bae, Ilias Koen
Reviewers:	Liam Fee, Joyce Lee, Verania Andria, Ashley Palmer, Omar Siddique
Coordination:	Bernhard Barth, Ilija Gubic
Summarised by:	Ian Barnes
Editors:	Brittany Jordan, Ian Barnes
Photography:	Bima Pratama, John Taylor, © UN-Habitat for all photographs
Design and Layout:	Kenan Mogultay, Deepanjana Chakravarti



# Contents

<b>01</b>	<b>Introduction</b>	01
1.1	Cities and Climate Change Initiative	02
1.2	Methodology	02
<b>02</b>	<b>Overview of the City</b>	<b>03</b>
2.1	Geography	03
2.2	Ecosystems	03
2.3	Climate Change Issues	04
2.4	Urban Economy	04
2.5	Governance System	04
2.6	Urban Trends	04
2.7	Makassar's City Vision	05
2.8	The Medium-Term Budget Funding Profile	05
<b>03</b>	<b>Climate Change Vulnerability Assessment</b>	<b>06</b>
3.1	Methodology and Definitions	06
3.2	Climate Change Exposure	06
3.2.1	Climate Trends in Makassar	06
3.2.2	Climate Hazards in Makassar	07
3.3	Climate Change Sensitivity	10
3.3.1	Sensitivity and Physical Urban Systems	10
3.3.2	Sensitivity and Economic Systems	11
3.3.3	Sensitivity and Ecosystems	11
3.3.4	Sensitivity and Urban Poor Housing	11
3.4	Adaptive Capacity to Climate Change	13
<b>04</b>	<b>Ecosystem-Based Adaptation Assessment</b>	<b>15</b>
<b>05</b>	<b>Institutional Capacity Assessment</b>	<b>17</b>
<b>06</b>	<b>Analysis and Recommendations</b>	<b>18</b>
<b>07</b>	<b>Conclusion</b>	<b>20</b>

## List of Figures

Figure 1:	Location of Makassar on the island of Sulawesi and in relation to the neighboring districts of Takalar, Gowa and Maros	..... 01
Figure 2:	The mean rainfall and temperature over the long term in Makassar	..... 07
Figure 3:	Makassar Rainfall Intensity	..... 07
Figure 4:	Makassar Average Temperature 1993 – 2012	..... 08
Figure 5:	Exposure rating by district in Makassar	..... 09
Figure 6:	High population growth is occurring in the city's periphery where the city's current water supply network is limited. The map demonstrates the need to expand the water supply network to keep up with increasing demand	..... 10
Figure 7:	Sensitivity rating by district in Makassar	..... 13
Figure 8:	Exposure rating by district in Makassar	..... 16

# Introduction

Climate change is already affecting millions of people worldwide. In urban areas, which are typically characterised by significantly higher population density, climate change will exacerbate and compound existing vulnerabilities, especially for the urban poor.

Across Indonesia cities are facing two interlinked challenges, that of rapid population growth and the impacts of climate change. Rapid urbanization offers the benefits of larger economies, increased human resources, and potentially more development opportunities, however, unplanned rapid growth can also strain public services and infrastructure, invite casualization of labour and unsafe informal sector employment, causes pollution and overwhelm ecosystems, and leads to traffic congestion. As a result of climate change, we expect that storm frequency and intensity will increase, flooding will become serious and droughts will affect food production in rural areas, which has damaging knock-on effects in urban areas. Coastal areas are threatened by inundation from sea-level rise, and other urban challenges. Meanwhile, cities are the main drivers of increased greenhouse gas emissions. This means that cities must be the centre of actions both to mitigate the causes of climate change, and to adapt to their anticipated effects.

Makassar is a coastal city, sitting on the far southwestern tip of the island of Sulawesi, in eastern Indonesia. The population has grown from 1.1 million in 2003 to about 1.35 million today, an increase of over 20 per cent in a decade. At the same time, its land area is expanding as reclaimed land extends the city's coastline creating opportunities for new commercial developments. On the periphery of the city new housing estates are being developed with rising demand for homes and public services. The city recently built a new international airport and is expanding its port facilities to boost trading capacity and create jobs. Major infrastructure such as roads, hospitals and water supply networks, as well as basic services such as health-care, are becoming vulnerable to the negative effects of climate change.

The vulnerability assessment aims to bring together an understanding of urban growth dynamics with that of climate trends and its impacts in Makassar. The vulnerability assessment consists of three components: (i) the climate change vulnerability assessment; (ii) the ecosystem-based adaptation assessment and (iii) the institutional capacity assessment. It is targeted at national and local government officials, policy makers and key members of organizations and institutions working to improve urban systems and living conditions of poor and vulnerable communities as well as community leaders, NGOs and community based organizations, and anyone interested in taking action to decrease climate vulnerability in the city. It is intended to be used as a planning tool as well as an advocacy document to guide decision-making at the metropolitan, city and community levels about effective responses to climate change impacts. The recommendations can be used to identify priority urban systems, places and populations that are being impacted by climate change and to design appropriate policies and programmes that target specific issues, systems and weaknesses.



Amongst the most vulnerable areas and people of Makassar are the urban poor who live along the coast. Climate change threatens their livelihoods and physical safety, and this compounds their existing social vulnerabilities of lacking access to water and low income.

## 1.1 Cities and Climate Change Initiative

The Cities and Climate Change Initiative was developed by UN-Habitat to promote the mitigation of, and adaptation to, climate change in developing countries. More specifically, the Initiative supports the development of pro-poor innovative approaches to climate change policies and strategies. It builds on UN-Habitat's rich experience of sustainable urban development (through the Environmental Planning and Management approach of the Sustainable Cities and Agenda 21 Programmes) as well as on internationally recognised capacity building tools. The Initiative develops, adapts and disseminates methodologies that put city managers and practitioners in a better position to support adaptation to climate change. The Cities and Climate Change Initiative also promotes collaboration by local authorities and their associations in global, regional and national networks, with the triple rationale of: 1) enhancing policy dialogue so that climate change is firmly established on the agenda; 2) supporting local authorities' efforts to bring about these changes; and 3) enhancing awareness, education and capacity-building in support of climate change strategies.

## 1.2 Methodology

The research team gathered information from available government data and maps, through observation field trips, community meetings, and focus group discussions with civil society organizations, community members and government officials. Analyzed data was structured and aligned by the research team among the different components of vulnerability criteria. The information was used to create a vulnerability map at the sub-district level (Kecamatan) in combination with identified urban trends and predominant urban typologies, and three communities were selected to deepen vulnerability analysis. The results of the analysis were then discussed internally between team members, and then presented for verification to government officials and civil society members.

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