



Overview of Natural Disasters and their Impacts in Asia and the Pacific 1970 - 2014



ESCAP Technical Paper
Information and Communications Technology and
Disaster Risk Reduction Division

Overview of Natural Disasters and their Impacts in Asia and the Pacific, 1970 - 2014

March 2015

Disaster Risk Reduction Section
ICT and Disaster Risk Reduction Division
ESCAP

Disclaimer: The designations employed and the presentation of the material in this paper do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. References and maps obtained from external sources might not confirm to the United Nations Editorial guidelines.

The Content in this document is the opinions and viewpoints of the author's and not that of ESCAP or IDD and this publication has been issued without formal editing.

Acknowledgements

Under the overall direction and guidance of Shamika Sirimanne, Director of the Information and Communications Technology and Disaster Risk Reduction Division of ESCAP (IDD), this technical paper has been prepared by Sung Eun Kim, Ho Miu David Li, and Jonghyo Nam of IDD.

Other contributing authors are Alf Blikberg, Nia Charrett, Kelly Hayden, Donna Mei-Ling Park, Nokeo Ratanavong, Shamika Sirimanne, Sanjay Srivastava, and Chiara Santantonio of IDD.

Abbreviations

| | |
|---------|--|
| ADPC | Asian Disaster Preparedness Center |
| EIC | Economic Institute of Cambodia |
| EM-DAT | Emergency Events Data Base / The International Disaster Data Base |
| ESCAP | United Nations Economic and Social Commission for Asia and the Pacific |
| GDP | Gross Domestic Product |
| GLOF | Glacial Lake Outburst Floods |
| HFA | Hyogo Framework for Action |
| IPCC | Intergovernmental Panel for Climate Change |
| LDCs | Least Developed Countries |
| LLDCs | land-locked developing countries |
| MDGs | Millennium Development Goals |
| NDRRMC | National Disaster Risk Reduction and Management Council (Philippines) |
| OECD | Organization for Economic Co-operation and Development |
| SIDS | small island developing States |
| UNISDR | United Nations Office for Disaster Risk Reduction |
| UNU-EHS | United Nations University Institute for Environment and Human Security |
| WCDRR | United Nations World Conference on Disaster Risk Reduction |

Table of Contents

| | Page |
|--|------|
| Highlights..... | 6 |
| Introduction..... | 7 |
| I. OCCURRENCES OF NATURAL DISASTERS | 9 |
| A. Overview of Occurrences | 9 |
| II. FATALITIES FROM NATURAL DISASTERS | 11 |
| A. Overview of Fatalities | 11 |
| B. ESCAP Subregions: Diverse Pictures | 13 |
| III. ECONOMIC LOSSES FROM NATURAL DISASTERS | 15 |
| A. Overview of Economic Losses | 15 |
| B. Trends in Economic Losses: Outpaced Global Average | 16 |
| C. Adverse Impacts of Natural Disasters on the Economy | 20 |
| IV. EXPOSURE AND VULNERABILITY TO NATURAL DISASTERS..... | 23 |
| A. High Exposure of SIDS and LDCs..... | 23 |
| B. Vulnerability of LDCs..... | 24 |
| C. Impacts on Vulnerable Groups | 26 |
| References..... | 28 |

List of Figures and Tables

- Figure 1.1 Total Occurrences of Natural Disaster Events (1970 – 2014)
- Figure 1.2 Occurrences of Natural Disaster Events in Asia and the Pacific by Type (1970 – 2014)
- Figure 1.3 Occurrences of Natural Disaster Events in Asia and the Pacific by Subregion (1970 – 2014)
- Figure 1.4 Average Yearly Occurrences of Natural Disaster Events in Asia and the Pacific by Subregion
- Figure 1.5 Average Yearly Occurrences of Natural Disaster Events in Asia and the Pacific by Category
- Figure 1.6 Occurrences of Natural Disaster Events in Asia and the Pacific by Number of Fatalities
-
- Figure 2.1 Total Fatalities and Affected from Natural Disasters (1970 – 2014)
- Figure 2.2 Total Fatalities and Affected from Natural Disasters in Asia and the Pacific by Type (1970 – 2014)
- Figure 2.3 Average Yearly Fatalities from Natural Disasters in Asia and the Pacific by Category
- Figure 2.4 Average Yearly Fatalities from Natural Disasters in Asia and the Pacific by Type
- Figure 2.5 Fatalities per Natural Disaster Event in Asia and the Pacific
- Figure 2.6 Percentage of Occurrences of Natural Disaster Events by Number of Fatalities
- Figure 2.7 Total Fatalities from Natural Disasters in Asia and the Pacific by Subregion (1970 – 2014)
- Figure 2.8 Average Yearly Fatalities from Natural Disasters in Asia and the Pacific by Subregion
- Figure 2.9 Average Yearly Fatalities from Natural Disasters in Each Subregion by Type
-
- Figure 3.1 Total Economic Losses from Natural Disasters (1970 – 2013)
- Figure 3.2 Average Yearly Economic Losses and the Percentage of Asia and the Pacific in Global Total
- Figure 3.3 Economic Losses from Natural Disasters in Asia and the Pacific by Type (1970 – 2013)
- Figure 3.4 Total Economic Losses of Asia and the Pacific from Natural Disasters by Subregion (1970 – 2013)
- Figure 3.5 Average Yearly Economic Losses from Natural Disasters in Asia and the Pacific by Category
- Figure 3.6 Average Yearly Economic Losses from Natural Disasters in Asia and the Pacific by Type
- Figure 3.7 Economic Losses per Natural Disaster Event in Asia and the Pacific by Category
- Figure 3.8 Average Yearly Economic Losses from Natural Disasters in Asia and the Pacific by Subregion
- Figure 3.9 Average Yearly Economic Losses from Natural Disasters in Each Subregion by Type
- Figure 3.10 Comparison of Average Yearly GDP and Economic Losses from Natural Disasters
- Figure 3.11 Economic Losses as Percentage of GDP in Each Subregion
- Figure 3.12 Variations between Observed GDP and Projected GDP with no Disaster Scenario in Selected Countries
- Figure 3.13 Persistent Losses caused by Shocks
-
- Figure 4.1 Average Occurrences of Natural Disaster Events per Million People and per 1,000 km² of Land Area
- Figure 4.2 Fatalities from Natural Disasters per Million People by GDP per Capita (1970 – 2014)
- Figure 4.3 Fatalities from Natural Disasters per Million Population in LDCs, LLDCs and SIDS
- Figure 4.4 Economic Losses from Natural Disasters as Percentage of GDP by GDP per Capita
- Figure 4.5 Average Yearly Economic Losses from Natural Disasters as Percentage of GDP in LDCs, LLDCs and SIDS
- Figure 4.6 Number of Individuals Receiving Employment Insurance Benefits in the Disaster-stricken Prefectures of Tohoku (2011)
-
- Table 1 Top 15 Most Exposed Countries Worldwide

Key findings

- **Over 2 million people died from natural disasters between 1970 and 2014 in Asia and the Pacific, or 56.6 per cent of the fatalities globally.** Earthquakes and tsunamis were the main cause of deaths, despite their relatively infrequent occurrences.
- **6 billion people from the region were affected by disasters over the same period, or 87.6 per cent of people affected globally.** Floods and drought were not the deadliest disasters but affected the highest number of people at 5 billion.
- While reports on natural disasters are generally on the rise, **floods and storms showed a steep increase in number and were the most frequent events.**
- **The average number of fatalities per event is decreasing.** The percentage of disasters killing more than 100 people has reduced since 1970.
- **Over US\$ 1.15 trillion was lost from natural disasters during this 45 year period.** Four types of disasters - earthquakes, tsunamis, floods and storms - were responsible for 91.8 per cent of the total economic losses.
- **Economic loss from natural disasters surged significantly in the region** from \$5 billion in the 1970s to around \$75 billion in recent years, or 28 per cent of the global economic loss to 51 per cent more recently.
- In Asia-Pacific, **economic losses increased by almost 15 times since 1970 while the region's GDP only grew 5 times**, suggesting that building resilience to disasters is likely a necessary condition for protecting region's growth prospects.
- **LDCs and SIDS are highly exposed to disaster risk.** Natural disasters often jeopardized hard earned development gains in the region, and at the national level, vulnerable people generally suffer more when a disaster strikes.
- When comparing the average annual economic losses from disasters with their GDP, **LDCs lost US\$ 592 million per year on average, or 0.97 per cent of their GDP.**

Introduction

Asia and the Pacific is the most disaster-prone region in the world. Geologically, the region is characterized by active tectonic plate movements in the Pacific and Indian Oceans, which have been the source of major earthquakes and tsunamis. The Indian and Pacific Oceans also regularly generate tropical cyclones and typhoons. The region is home to young mountain ranges which are especially prone to earthquakes, landslides, flash floods, avalanches and Glacial Lake Outburst Floods (GLOFs). Geographically it is a region of physical diversity with islands, mountains, extensive coastlines, forests, deltaic plains and deserts. The weather and climate systems are driven primarily by monsoon variability and snow cover dynamics, which both contribute to the frequency and severity of floods and drought. Several major rivers flow through the region, often across several national borders, and a large portion of the population lives in the fertile valleys of these rivers.

In the past decade alone, a person living in Asia-Pacific was twice as likely to be affected by a natural disaster as a person living in Africa, almost six times as likely as someone from Latin America and the Caribbean, and 30 times more likely to suffer from a disaster than someone living in North America or Europe (ESCAP: 2013). News reports on natural disasters in the region has been ceaseless.

Since 1970, the region has been hit by more than 5000 disasters causing more than two million fatalities and affecting the lives of more than six billion.¹ The worst disaster in terms of loss of life occurred in 1970, when Cyclone “Bhola” struck Bangladesh and caused a storm surge that killed 300,000 people and affected 3.6 million more. Around twenty years later when a more severe cyclone struck the same region in Bangladesh, 138,000 people died and 15 million people were affected, becoming the second largest storm with respect to fatalities, though notably less people died due primarily to disaster risk management efforts in the country. Cyclone “Nagis” killed a similar number of people in Myanmar in 2008. Storms and floods are annual events in some parts of the region. The Philippines is often devastated by typhoons, including the Super Typhoon “Haiyan” in November 2013 which killed over 6,000 people and displaced approximately 4 million people (NDRRMC: 2014).

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_4458

