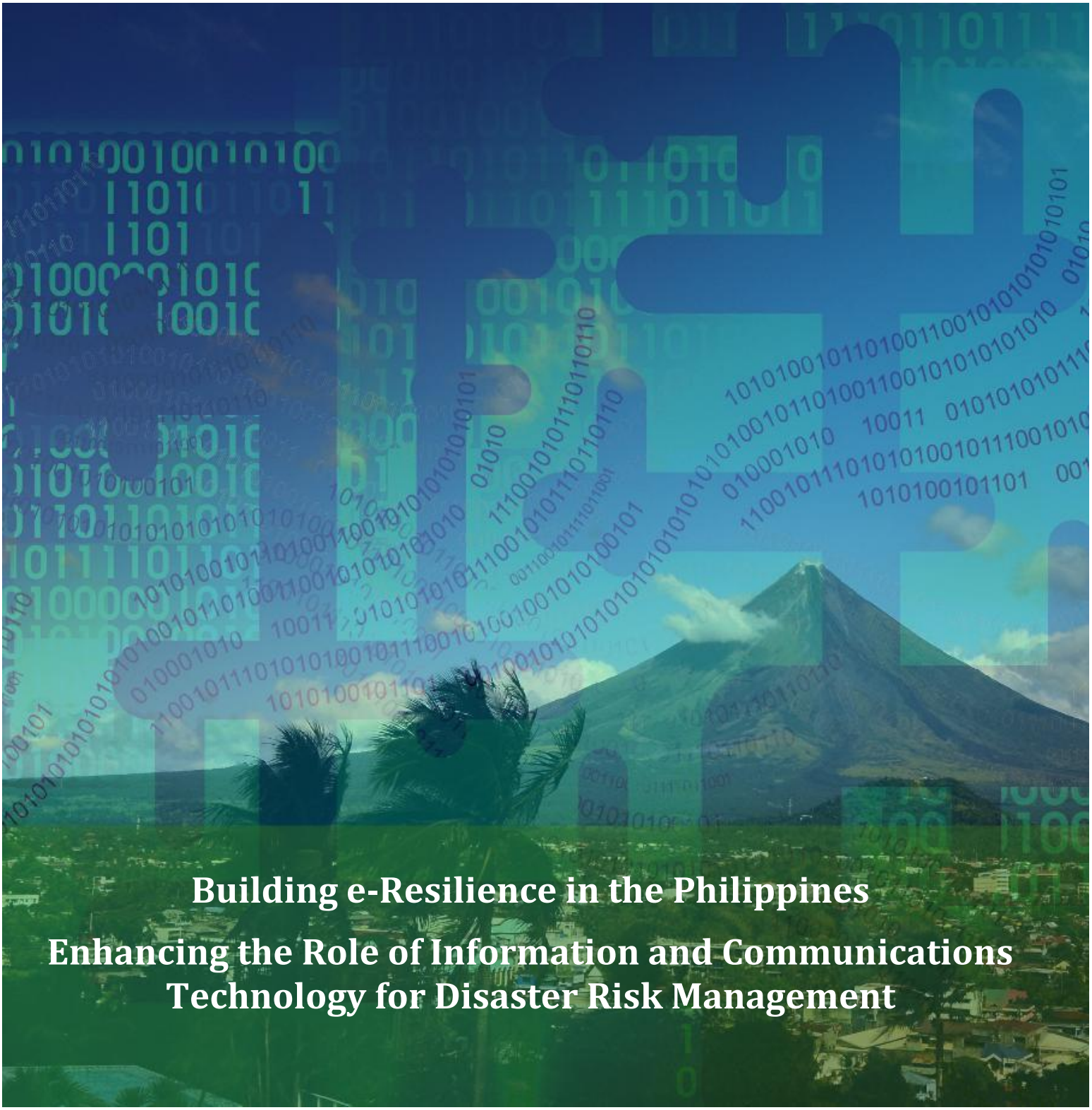

Building e-Resilience in the Philippines

Enhancing the Role of Information and Communications Technology for Disaster Risk Management

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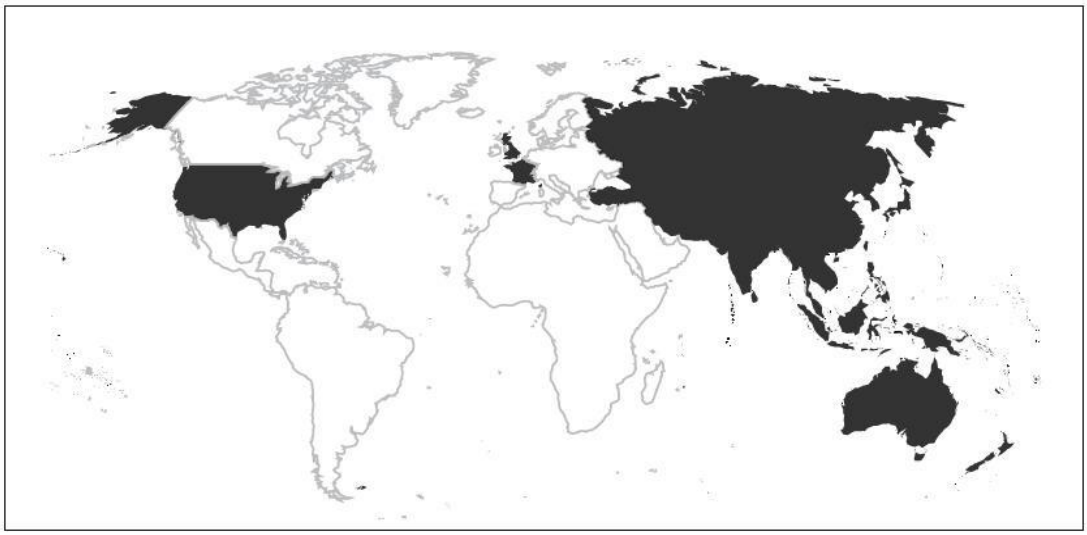

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Abbreviations and Acronyms

AADMER	ASEAN Agreement on Disaster Management and Emergency Response
AAG	Asia-America Gateway
APCN	Asia Pacific Cable Network
APCN-2	Asia Pacific Cable Network 2
ASEAN	Association of Southeast Asian Nations
ASTI	Applied Science and Technology Institute
CCA	Climate Change Adaptation
CICT	Commission on Information and Communications Technology
DFON	Domestic Fibre Optic Network
DOST	Department of Science and Technology
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EAC-C2C	East Asia Crossing
EGMP	e-Government Master Plan
EO	Executive Order
ESCAP	Economic and Social Commission for Asia and the Pacific (United Nations)
ETPI	Eastern Telecommunications Philippines
FAiTH	Foreign Aid Transparency Hub
G-P	Guam - Philippines
GIS	Geographic Information System
ICT	Information and Communications Technology
iGovPhil	Integrated Government Philippines
IOC	Intelligent Operations Centre
IPv6	Internet Protocol version 6
ISP	Internet Service Provider
LGU	Local Government Unit
MIX	Manila Internet Exchange
NDRRMC	National Disaster Risk Reduction and Management Council
NDTN	National Digital Transmission Network
NGO	Non-Governmental Organization
NTC	National Telecommunications Commission
OCD	Office of Civil Defense
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
PARR	Presidential Assistant for Rehabilitation and Recovery
PHIVOLCS	Philippine Institute of Volcanology and Seismology
PhIX	Philippine Internet Exchange
PHOpenIX	Philippine Open Internet Exchange
PLDT	Philippine Long Distance Telephone Company
R&D	Research and Development
SEA-ME-WE-3	South-East Asia - Middle East - Western Europe 3
SMS	Short Message Service
TelicPhil	Telecom Infrastructure of the Philippines
TGN-IA	Tata TGN Intra-Asia

1. Introduction

The Philippines is one of the most disaster-prone countries in the world, with annual damages amounting to 0.7 per cent of the nation's gross domestic product per year, and deaths due to disasters averaging 1,000 per year.[1] Located on the western rim of the Pacific and along the Circum-Pacific Seismic Belt, the Philippines is subject to storms, typhoons, earthquakes, floods, volcanic eruptions, droughts, landslides and other natural hazards. At least 60% of the total land area of the country is exposed to multiple hazards and 74% of its population is vulnerable to the impact of these hazards.[2]

Since 2010 when the Disaster Risk Reduction and Management Act was passed, the Philippines has been shifting its focus from disaster response to a holistic and proactive approach to disaster risk reduction (DRR) and disaster risk management (DRM), with the intent of making people more resilient to the effects of disasters. With the Act of 2010 serving as the country's overall guiding policy and framework for DRR, it addresses four overlapping areas or phases: (1) Disaster Prevention and Mitigation; (2) Disaster Preparedness; (3) Disaster Response; and (4) Disaster Rehabilitation and Recovery.

The role of information and communications technology (ICT) in all these phases is critical for managing and communicating information, and coordinating efforts among different actors. This report looks at the resilience of ICT systems in the Philippines, or the ability of the ICT systems to withstand and recover from disaster events. It also examines the role of ICT in building people's resilience to disasters in the Philippines, by providing examples of how ICT has helped Filipinos withstand, adapt to and recover from the effects of disasters.

The next section of this report discusses ICT considerations in DRM policies. This is followed by an assessment of the ICT readiness of the DRM sector in Section 3. The findings from this section are based on interviews with government officials and with experts that are developing ICT applications for DRM in the country. Attention is given to fibre optic connectivity networks and broadband as critical infrastructure for DRM. In this regard, the state of broadband infrastructure as provided by the market and the government is described, along with the various cable landings in the country. Data is provided on the growing Internet user base in the country, despite the relatively poor quality of broadband access available. The resilience of ICT systems to provide early warnings, withstand disaster events and help recovery is also examined.

Section 4 goes on to provide some examples of ICT applications in the four phases of DRM, such as: monitoring and data acquisition systems for disaster prevention and mitigation; weather forecasting systems for disaster preparedness; an intelligent operations centre and emergency

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