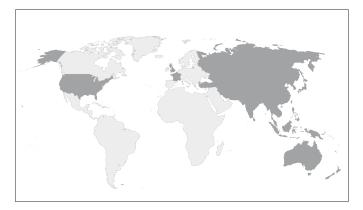


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CLIMATE CHANGE ADAPTATION FOR WATER MANAGEMENT IN A GREEN ECONOMY

Discussion Paper



Climate Change Adaptation for Water Management in a Green Economy

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Foreword

While efforts to mitigate climate change continues by reducing greenhouse gases (GHG), the impacts of climate change has resulted in changes to the hydro-meteorological events of floods and droughts, translated in more extreme case of events. Climate Change has also increase the melting of the polar ice and the water towers of the Himalaya's Hindu Kush, and threaten coastal settlements with sea-level rise. All this will have significant impact on developing countries of Asia and the Pacific region particularly of the least develop countries and small island states in the Pacific and Indian Oceans.

More than 90% of impacts of climate change are related to water issues. These impacts are not only on water supply for household, industries and agriculture, but also on disasters and hazards during heavy rainfall, with flooded areas and landslides. During droughts, forest fires and haze have become the norm. The spread of poor quality water during floods and concentration of toxic water during drier months are an added health hazards. As such water security has become a truly global challenge.

ESCAP in its "Low Carbon Green Growth Roadmap for Asia Pacific" publication has articulated on, "Turning resource constraints and the climate crisis into economic growth opportunities." This current publication looks at the detail challenges of water resources management from the perspective of green economy. It complemented the works in managing the multitude of water challenges facing the vast Asia and the Pacific region as climate change impact is expected to further exacerbate these challenges.

This publication is prepared to provide guidance in discussions for adaptation to climate change through integrated water resources management and green growth to achieve green economy and sustainable development.

Rae Kwon Chung

Director, Environment Development Division

ESCAP

List of Abbreviations and Acronyms

AWM	Agriculture Water Management
Ar	Argon
APWF	Asia Pacific Water Forum
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
ESCAP	United Nations Economic and Social Commission for Asia and the Pacific
FAO	Food and Agriculture Organization
GDP	Gross Domestic Product
GHG	Green House Gases
GLOF	Glacial Lake Outburst Floods
GWP	Global Water Partnership
ICIMOD	International Centre for Integrated Mountain Development
IGSD	Institute of Governance and Sustainable Development
IPCC	Intergovernmental Panel on Climate Change
IRBM	Integrated River Basin Management
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
Kg	kilogram
M ³	meter cube
MAR	Managed Aquifer Recharge
MEAB	Millennium Ecosystem Assessment Board
$\overline{N_2}$	Nitrogen
N ₂ O	Nitrous Oxide
NAPA	National Adaptation Program for Action
NH ₄	Methane
O ₂	Oxygen
O ₃	Ozone
PES	Payment for Ecosystem Services
PWS	Payment for Watershed Services
SCP	Sustainable Consumption and Production
SRES	Special Report on Emissions Scenarios
UFW	Unaccounted For Water
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
WHO	World Health Organization

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