



Introduction to UNESCAP Water Resources Activities and Emerging Challenges in Asia and the Pacific

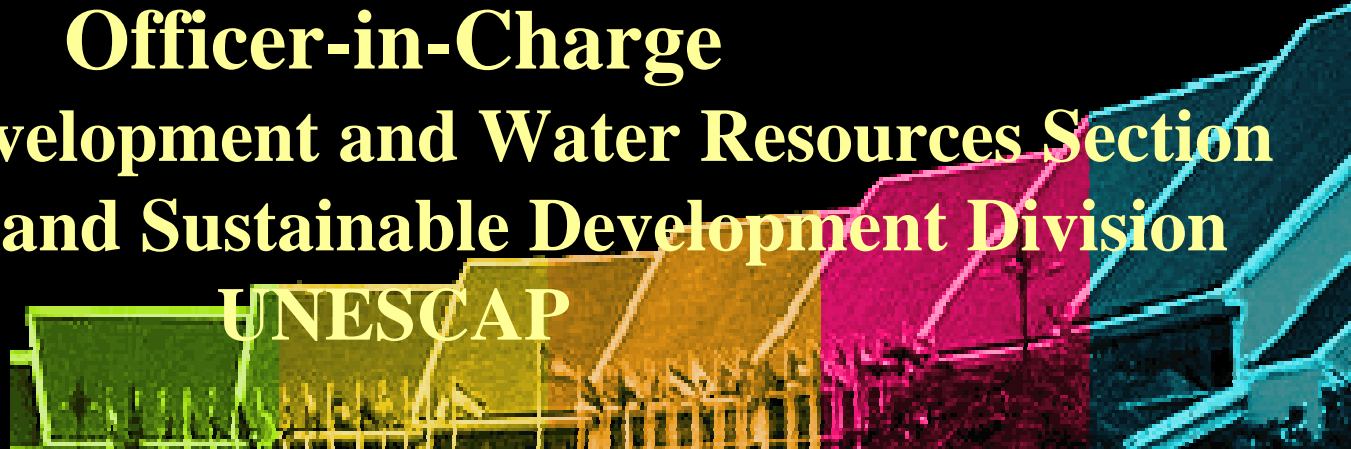
Ti Le-Huu

Officer-in-Charge

Sustainable Development and Water Resources Section

Environment and Sustainable Development Division

UNESCAP





Regional Perspectives

- ❑ **Most populated: 60% of World population**
- ❑ **Highest economic growth rates**
- ❑ **Highest number of poor**
- ❑ **91% of the World deaths and 49% of World damage by natural disasters during last century**
- ❑ **Rich and long history of water resources management of several thousands of years**





Priority Challenges in UN Water Resources Activities in Asia-Pacific

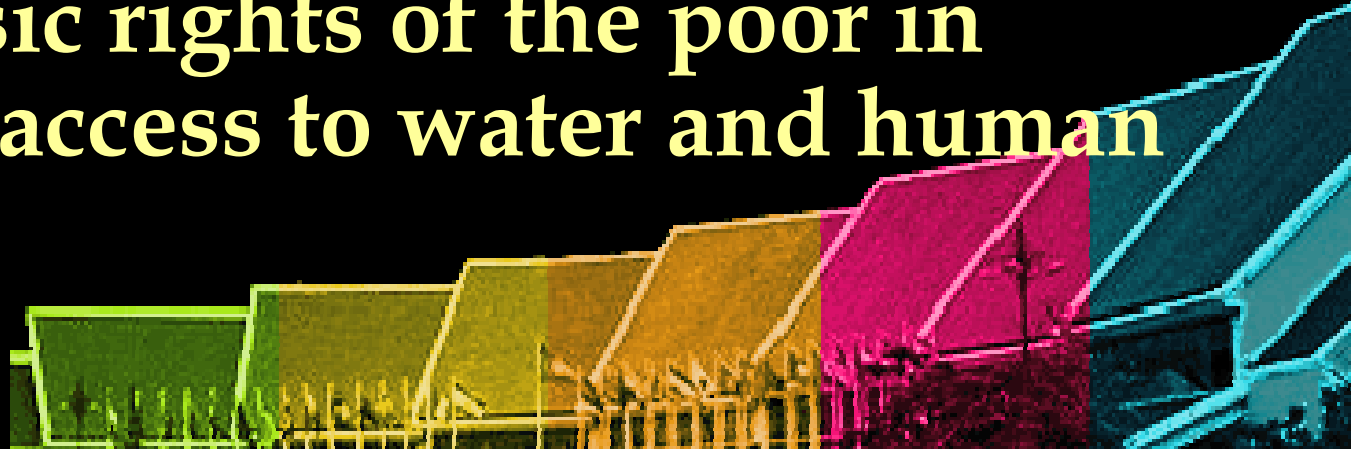
- 700 million people without access to safe drinking water
- Nearly 2 billion people without access to improved sanitation
- About 700 million people live under \$1 a day
- 85% of deaths caused by natural disasters are in UNESCAP region
- Over \$320 billion was lost during the past 14 years





Persisting challenges in disaster management

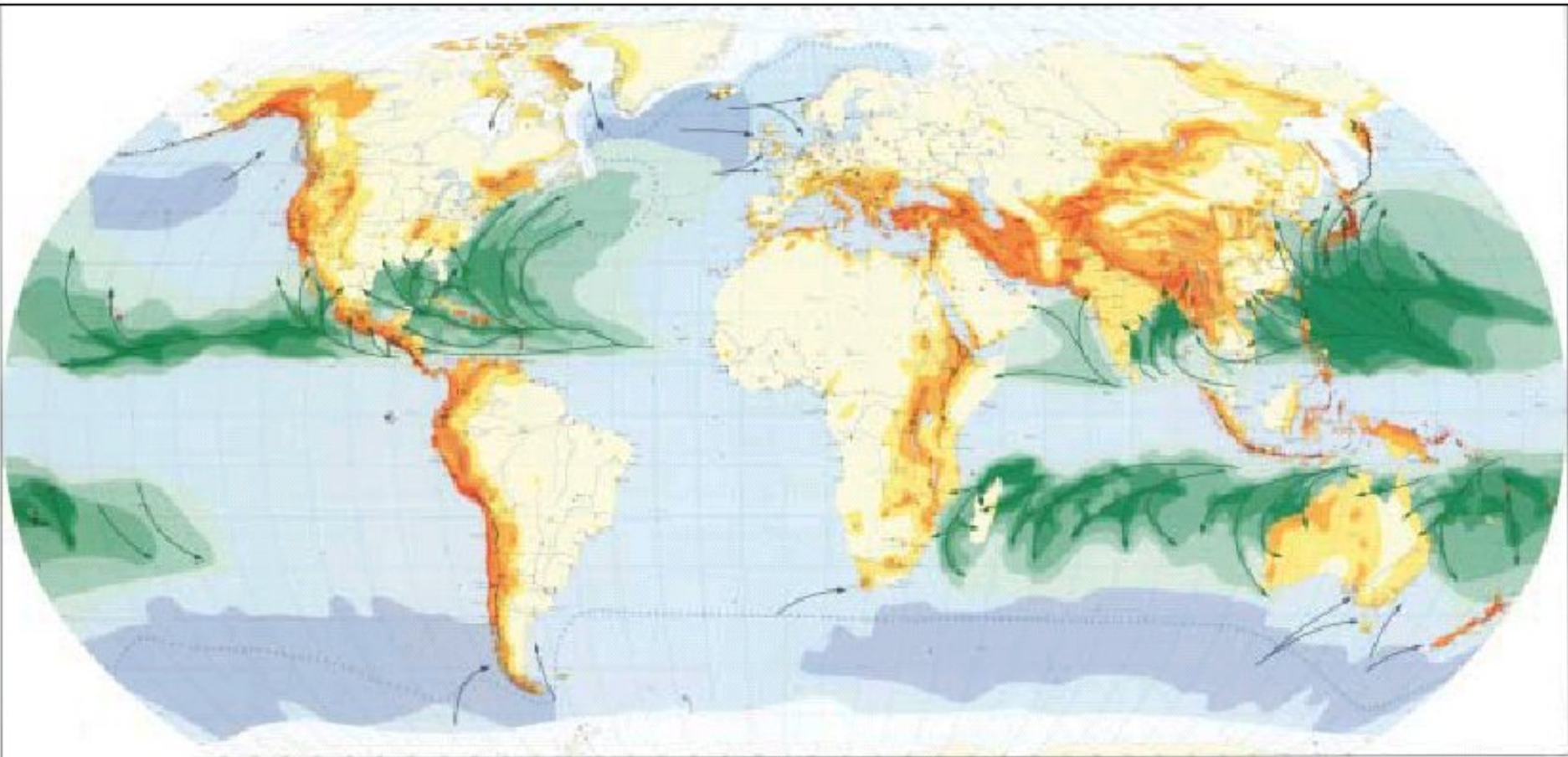
- Further reduce number of people killed by water-related disasters
- Reverse the increasing trend of economic damage by natural disasters
- Meet basic rights of the poor in terms of access to water and human security





World Map of Natural Hazards

Source: Munich Re

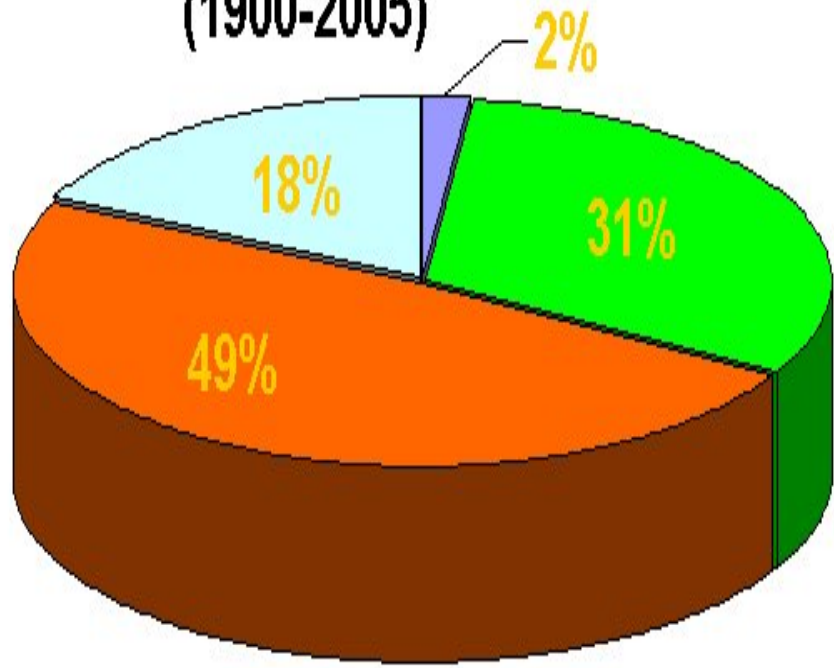


<p>Earthquakes</p> <ul style="list-style-type: none"> Zone 1: 0.001-0.010 Zone 2: 0.011-0.100 Zone 3: 0.101-0.500 Zone 4: 0.501-1.000 Zone 5: 1.001-10.000 <p>Large (over 1000 km²)</p>	<p>Multiple natural hazards</p> <p>Multiple natural hazards occur with an estimated probability of 10% in 100 years (approximately a return period of 10 years) for the following countries:</p>	<p>Volcanoes</p> <ul style="list-style-type: none"> Large (over 1000 km²) Small (under 1000 km²) Medium (1000-10000 km²) <p>Tsunami and Storm Surges</p> <ul style="list-style-type: none"> High (over 1000 km²) Medium (1000-10000 km²) Low (under 1000 km²) 	<p>Tropical Storms and Cyclones</p> <ul style="list-style-type: none"> Zone 1: 0.01-0.10 (100 km²) Zone 2: 0.11-0.50 (100 km²) Zone 3: 0.51-1.00 (100 km²) Zone 4: 1.01-10.00 (100 km²) Zone 5: 10.01-100.00 (100 km²) <p>Probability of occurrence every 100 years (approximately 1% of the population of 100 years)</p>	<p>Extratropical Storms/Winter Storms</p> <ul style="list-style-type: none"> High (over 1000 km²) Medium (1000-10000 km²) Low (under 1000 km²) <p>Other Natural Hazards</p> <ul style="list-style-type: none"> Landslides Drought High (over 1000 km²) Medium (1000-10000 km²) Low (under 1000 km²) 	<p>Political Borders</p> <ul style="list-style-type: none"> State border State border (international) State border (not tested) <p>China</p> <ul style="list-style-type: none"> 1: 1.000 km² 2: 100.000 km² 3: 1.000.000 km² 4: 10.000.000 km² 5: 100.000.000 km²
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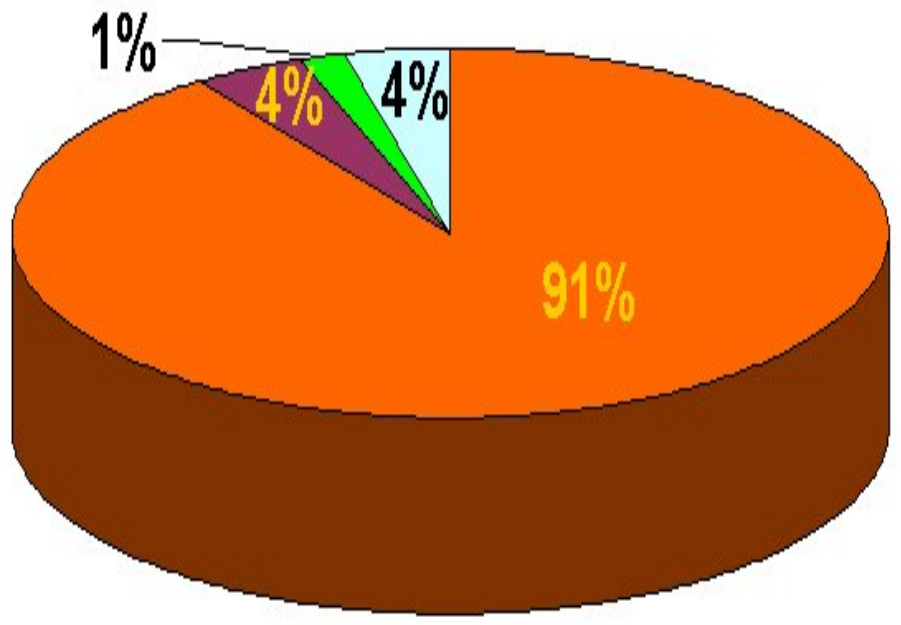


Damage in US\$ by Continents (1900-2005)

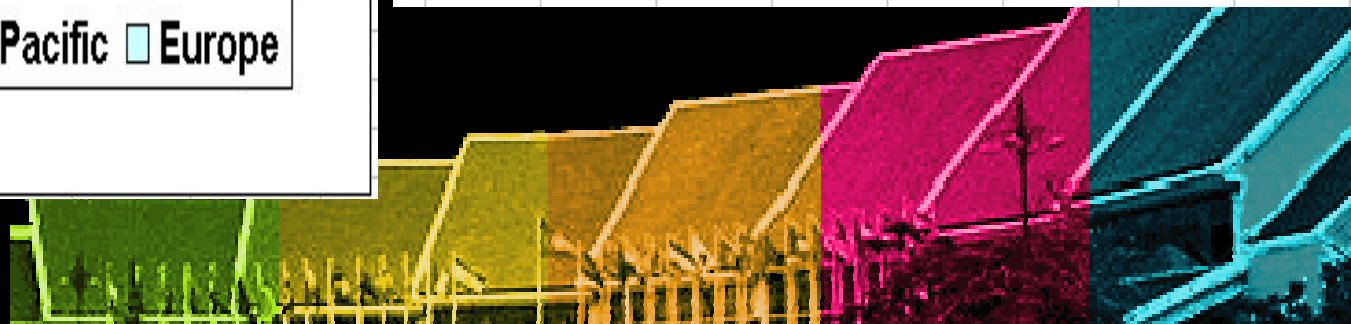


■ Africa
 ■ America
 ■ Asia+Pacific
 ■ Europe

Number of Deaths by Natural Disasters by Continents (1900-2005)



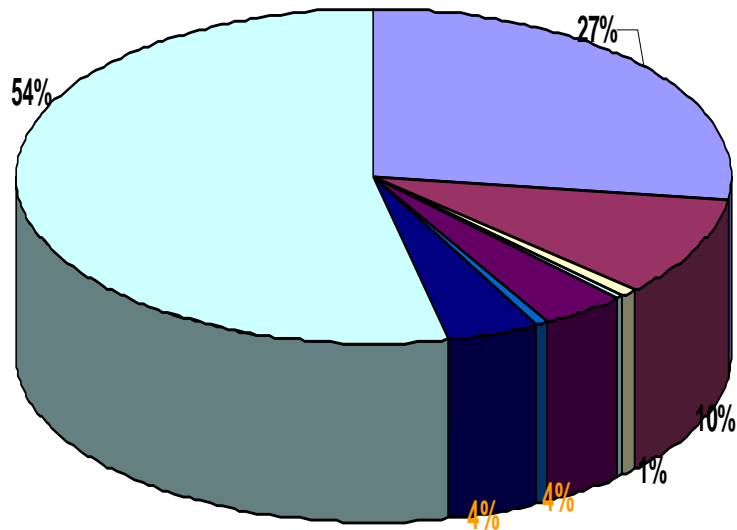
■ Asia-Pacific
 ■ Africa
 ■ America
 ■ Europe





Number of Deaths by Disasters in Asia and the Pacific - 1950-2005

(Total: 5,536,242)

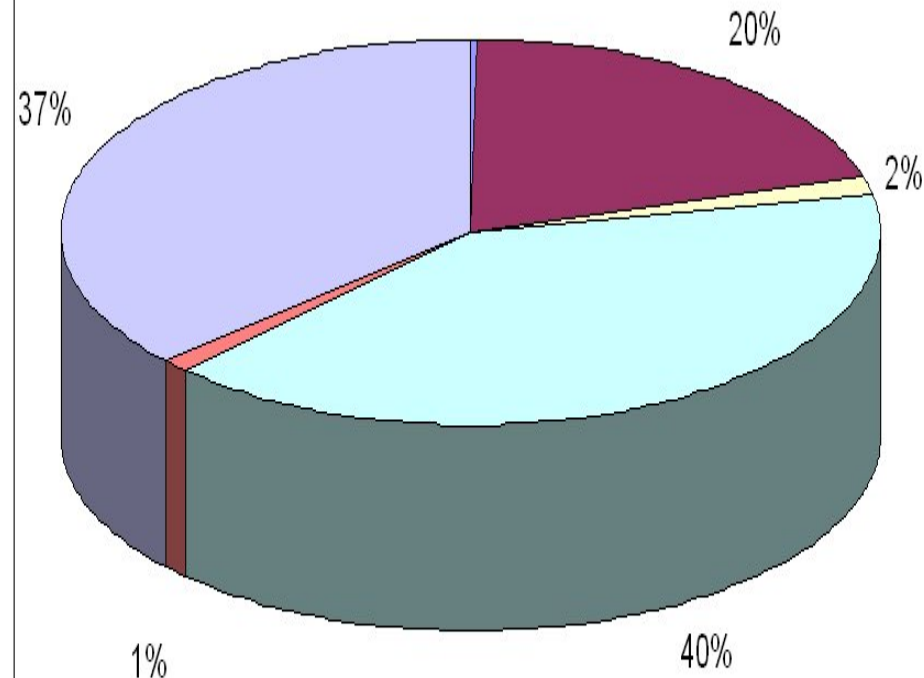


- Drought
- Earthquake
- Epidemic
- Extreme Temperature
- Famine
- Insect Infestation
- Slides
- Volcano
- Wave / Surge
- Wild Fires
- Wind Storm + Flood

TOTAL DEATHS IN ASIA-PACIFIC BY NATURAL DISASTERS IN

1990-2004 (excluding epidemic and famine)

627,356



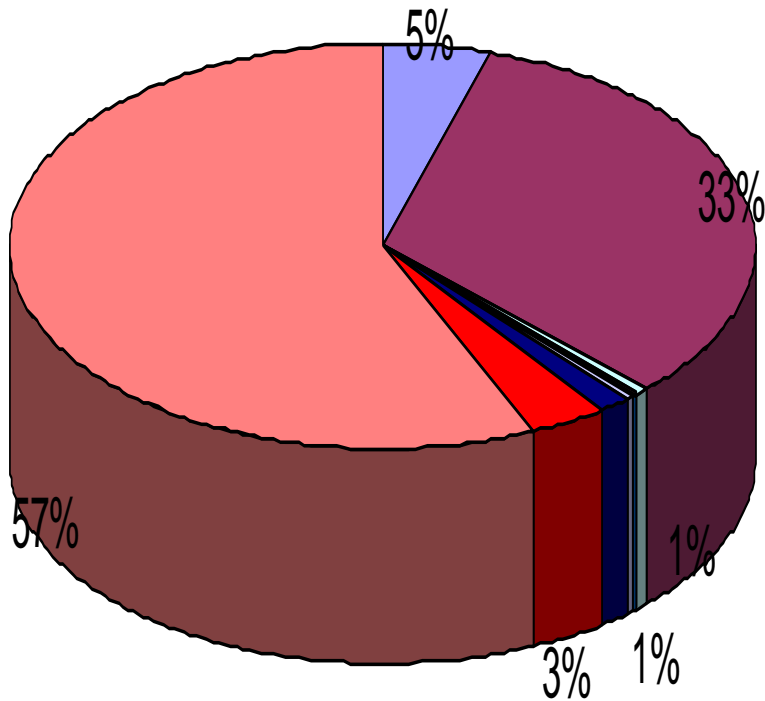
Source: "EM-DAT: The OFDA/CRED International Disaster Database, www.em-dat.net - Université Catholique de Louvain - Brussels - Belgium"

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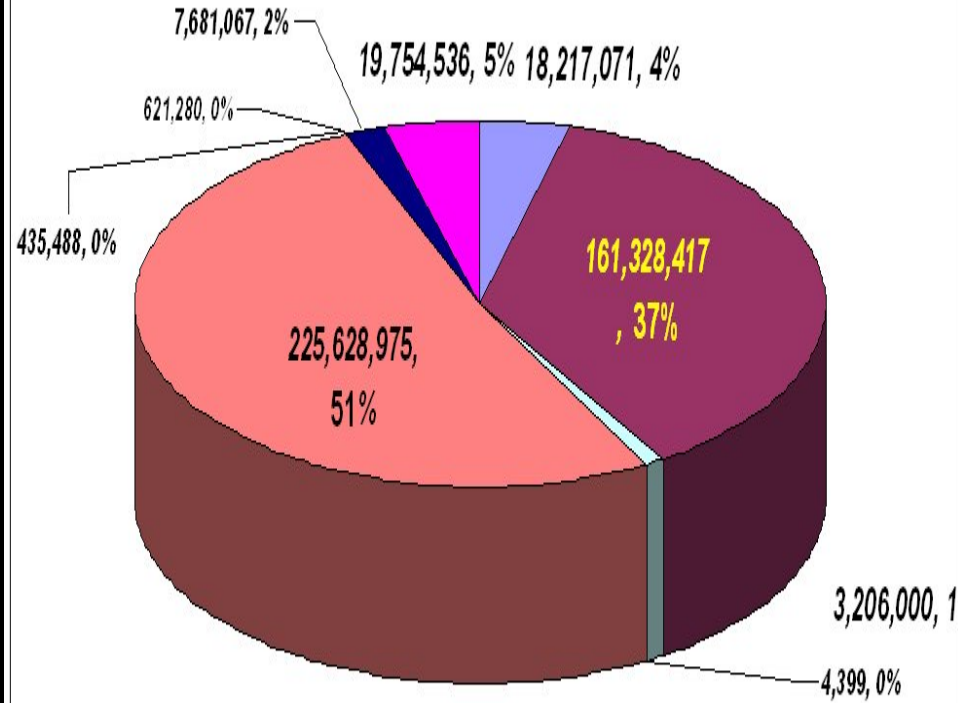
Damage in US\$ in Asia & Pacific, 1950-2005 (Total=US\$588,015,432,000)



- Drought
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DAMAGE BY NATURAL DISASTERS IN ASIA-PACIFIC IN 1990-2004

Total = US\$436,877,233,000



- Drought
- Earthquake
- Epidemic
- Extreme Temperature
- Famine
- Flood/Cyclones
- Slides
- Volcano
- Wave / Surge
- Wild Fires





Regional trends of disaster impacts

- Important reduction in the average number of annual deaths by natural disasters from 100,000 people in the past five decades to 41,000 people during the past 15 years
- Average annual damage by natural disasters has increased from US\$10.6 billion to US\$29 billion
- Increasing severe impacts on the poor





Major subregional disaster impacts (1950-2005)

	Deaths	Damage (US\$)
North-East Asia	2,649,275	386,608,653,000
Central Asia	38,200	47,811,747,000
South Asia	2,549,782	85,553,650,000
South-East Asia	291,230	41,209,436,000
Pacific	9,468	26,836,946,000
TOTAL	5,537,955	588,020,432,000



Regional findings on disasters

- Most important reduction in number of annual deaths by cyclones, e.g. from over 300,000 deaths in 1970 to 140,000 deaths in 1991 to less than 3,000 deaths in 1998 by same magnitude of cyclone in Bangladesh
- Reduction was possible with increasing efforts to strengthen community-based disaster risk management (CBDRM) supported by early warning





Valuing the Costs of Disasters: Recent Experiences & Developments

Ti Le-Huu

**Sustainable Development and Water
Resources Section**

UNESCAP





OUTLINE

1. Background
2. Disaster Damages Tool
3. Next Steps





BACKGROUND

Comparative Summary of Damages

Type of Damage	Amount	Loss per Capita	Loss per Farmer
1. Direct	Php 4.1 B	Php 186	Php 1,822
2. Indirect	Php 20.4 B	Php 914	Php 4,750





ECLAC Methodology

Estimated Loss in GDP

Gross Value Added

GDP (in Php)	10,535,955,530
Agriculture, Fishery & Forestry	2,199,218,641
Manufacturing	6,201,406,985
Electricity, Steam and Water	2,003,181,221
Transpo, Comm & Storage	337,174,816
Private Services	(112,571,502)
Government Services	(92,454,631)



UNESCAP Template of Assessment

Welcome to the Disaster Impact Calculator

using the ECLAC Methodology



United Nations Economic and Social Commission
for Asia and the Pacific





MENU





1 Read introduction

- 1.1 Direct costs
- 1.2 Indirect costs
- 1.3 Secondary effects or macro-economic impacts
- 1.4 Direct and indirect impacts based on ECLAC methodology

Tip: You can navigate the entire tool by clicking the numbers or the texts from the menu page. Always return here to get an overview.

2 Read instructions

3 Enter data

- 3.1 Exchange rate
- 3.2 Social Sector 
- 3.3 Infrastructure 
- 3.4 Agriculture 
- 3.5 Trade and Industry 
- 3.6 Tourism
- 3.8 Environment
- 3.9 Foreign Assistance

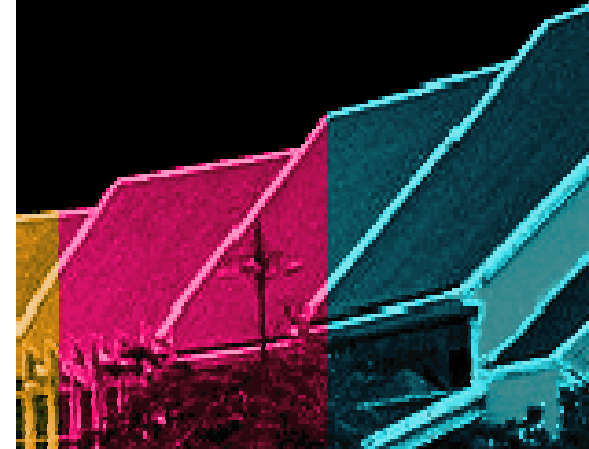
4 View and print data

- 4.1 Unit: In local currency 
- 4.2 Unit: In US dollars

5 Exit



Contents





Next Move

- ❑ More systematic application of the template to support policy and decision making on use of emergency funds and recovery
- ❑ Harmonization of assessment procedures
- ❑ Linkage of template application to risk identification and risk transfer
- ❑ Encouragement of application to prepare for next workshop in Nov / Dec 2006





Recent Experiences on IWRM

- **Langat River Basin in Malaysia**
- **Nadi River Basin in Fiji**
- **National Water Policy in Thailand**
- **National Water Resources Strategy in the Lao PDR**





Langat River Basin in Malaysia

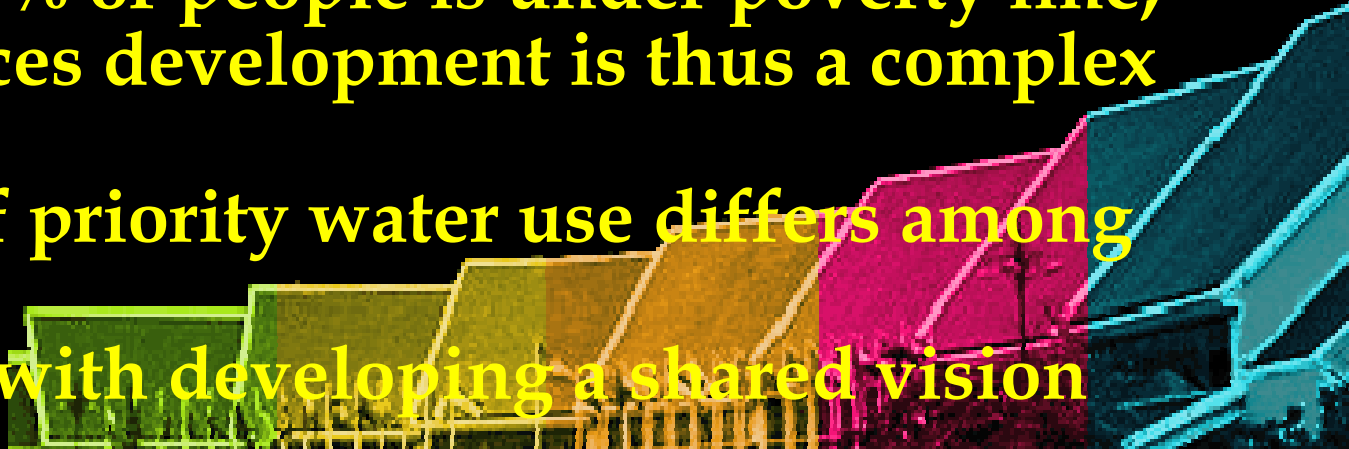
- Langat basin was a mainly agricultural base and is now a highest economic growth area
- Issues arise from missed opportunities to implement mutually beneficial management of the river basin
- Severity of issues is rapidly increasing, especially flood, bank erosion, land degradation, water quality and adequacy of water supply
- Langat basin covers two states and the federal capital
- Perception of levels of coordination varies with stakeholders
- SPM was useful for collaborative planning & management





Nadi River Basin in Fiji

- Nadi basin is one of the main sugarcane growing area of Fiji
- Nadi Town has the largest international airport of the country and its coastal area is part of the rapidly growing tourism zone of the Pacific
- Issues arise from the expected falling price of sugar and increasing damage by floods and shortage of water supply
- More than 50% of people is under poverty line, water resources development is thus a complex problem
- Perception of priority water use differs among stakeholders
- SPM started with developing a shared vision



Water Policy in Thailand

- Thailand is a fastest growing economy and has moved from a mainly agriculture-based economy to a much more diversified one
- Water policy formulated in 2000 consisted of 9 areas with a clear set of objectives and targets
- Emerging urgent need to eradicate poverty, most of the poor live in rural area (about 60% of population)
- New leadership introduced the concept of water grid with clear commitment for better water resources management
- Feasibility of the new concept has been challenged by technocrats
- SPM started with revisiting a shared vision





Lao Water Resources Strategy

- Laos is the smallest and least developed country in the Mekong Basin with highest hydropower potentials
- Development of hydropower and eco-tourism have emerged as the most promising areas for rapid economic growth of the country
- Socially equitable development policy has become a major challenge in water resources development, especially in hydropower
- With a population of about 5 million, more than 30% of people is under poverty line
- A firm foundation for regional cooperation has been established with neighbouring countries
- SPM started with an overall strategy towards a shared vision





Summary of related experiences

- ❑ SPM requires proactive and logical planning and supportive monitoring system for management
- ❑ SPM for integrated river basin management (IRBM) calls for establishment of clear river basin Vision with systematic ACTION for better coordination and management
- ❑ SPM for IRBM requires to be linked to national development goals: think national and regional, act local





Thank you

