# **KEEPING TRACK**

of our changing environment in Asia and the Pacific



Sea level so Biodiversity
Change Trade Emissions consumption
Life Expectancy Climate Change
Natural Hazards
Human Development Population
Energy

Environmental Trends Global ECO

Consumption Human Wellbeing

**Urbanization** 

drinking water protected areas

**Atmosphere** State of Coral Reefs

**Forests** 



ISBN:978-92-807-3367-9 DEW/1779/BA

### **Disclaimers**

The content and views expressed in this publication are those of the authors and do not necessarily reflect the views or policies, or carry the endorsement of the contributory organisations or the United Nations Environment Programme (UNEP).

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of UNEP concerning the legal status of any country, territory or city or its authorities, or concerning the delimitation of its frontiers and boundaries.

Reference to a commercial company or product in this publication does not imply the endorsement of UNEP.

© Maps, photos, and illustrations as specified.

### Reproduction

This publication may be reproduced in whole or in part and in any form for educational or non-profit purposes without special permission from the copyright holder, provided acknowledgement of the source is made. UNEP would appreciate receiving a copy of any publication that uses this publication as a source.

No use of this publication may be made for resale or any other commercial purpose whatsoever without prior permission in writing from UNEP. Applications for such permission, with a statement of purpose and intent of the reproduction, should be addressed to the Director, Division of Communications and Public Information (DCPI), UNEP, P.O. Box 30552, Nairobi 00100, Kenya.

The use of information from this publication concerning proprietary products for publicity or advertising is not permitted.

### Produced by

Regional Office for Asia and the Pacific United Nations Environment Programme, UN Building Rajdamnern Avenue. Bangkok, 10200, Thailand Tel: (+66) 2 288 1870 Fax: (+66) 2 288 3829 Email: uneproap@un.org Web: www.unep.org/roap

Keeping Track of Our Changing Environment in Asia and the Pacific, United Nations Environment Programme, Bangkok. Published June 2014.

Cover design by Audrey Ringler Layout by Peerayot Sidonrusmee and Metta Kongphan-apirak

This publication is available from www.unep.org

UNEP promotes
environmentally sound practices
globally and in its own activities. This
publication is printed on 100% eco-fibers paper,
using vegetable based inks and other ecofriendly practices. Our distribution policy aims to

# KEEPING TRACK OF OUR CHANGING ENVIRONMENT IN ASIA AND THE PACIFIC

FROM RIO TO RIO +20 (1992-2012)



# **FOREWORD**

Over the last quarter of a century, Asia Pacific as a region has enjoyed rapid economic growth, which has dramatically reduced the number of poor people and improved human development. However, there is a large unfinished agenda. While the region is less poor, it is also more unequal and is still home to half of the world's poor. There is social and economic inequality between subregions, between countries and within countries, between the rural areas and cities and within the cities where over 1.6 billion people now live.

The rapid economic growth has also often come at the expense of environmental degradation that not only undermines the long term sustainability of growth, but also has an immediate impact on people, most notably through air pollution, water contamination and scarcity, chemicals in soils and food and the significant health impact that these have. And to compound this, climate change is expected to magnify existing vulnerabilities throughout the region, especially in the small islands of the Pacific and the low lying coastal areas and deltas.

This is the underlying message from this UNEP report: *Keeping Track of Our Changing Environment in Asia and the Pacific*, a unique scientific and indicator-based assessment report produced by UNEP, with contributions from experts and UNEP National Focal Points from the region. The report analyzes emerging and persistent development and environmental challenges in the region. The report also traces the patterns of economic development and resource use and degradation since 1992 when leaders from countries around the globe made their commitment to sustainable development at the UN Conference on Environment and Development in Rio de Janeiro, Brazil.

What this report clearly demonstrates is that tackling resource use and efficiency, promoting sustainable energy production and access, halting depletion of natural capital, and eliminating air and water contamination are not simply environmental concerns, but a vital part of the region's aspirations for inclusive growth. Confronting these challenges with the same intensity as the region tackled poverty over the past two decades is the only way to ensure sustained and sustainable growth.

I hope the findings of the report provide a valuable benchmark for countries in the region which are in the process of developing the post-2015 global development agenda and sustainable development goals. Bringing about the transformation in finance, policy and action for an inclusive green economy is our biggest collective challenge in the next stage of our development in Asia and the Pacific. UNEP is committed to be a partner in the process.

### Kaveh Zahedi

Regional Director and Representative for Asia and the Pacific United Nations Environment Programme

## **TABLE OF CONTENTS**

### VI INTRODUCTION



### POPULATION & HUMAN DEVELOPMENT

- **2** Total Population
- 3 Differences in Population Numbers Across Asia-Pacific
- 3 Proportion of Asia-Pacific's to the World's Population
- 4 Population in the Sub-regions in 1992 & 2010
- 5-6 Population Growth Rate
- 7 Urban Population
- 8 Asian Megacities
- 9 Population of China's Pearl River Delta has Tripled Since 1992
- 10 People Living in Slums
- 11-12 Human Development Index
- 13 Proportion of Seats Held by Women in National Parliaments
- **14** Age Distribution
- **15** Life Expectancy
- 16 Crude Death Rate
- 17 Ratio of Female to Male Primary Enrolment
- **18** Asia-Pacific Sub-regional Population Living Below US\$1.25 per Day Consumption
- 19 Gross National Income, Total
- 20 Gross National Income per Capita, PPP
- 21 Food Supply per Capita, Meat
- 22 Food Supply: Fish & Seafood, Meat & Cereals
- 23 Ecological Footprint



### **ECONOMY**

- **25** Asia-Pacific GDP per Capita, Total and Change 1992-2010
- **26** Asia-Pacific GDP per Capita 2010 (map)
- 27 Asia-Pacific Trade: Import-Export of Goods & Services, Total & Per Cent of GDP
- 28 Domestic Material Consumption in Asia and the Pacific
- 29 Resource Use Intensity in Asia and the Pacific
- **30** Physical Trade Balance of Asia and the Pacific
- 31 Relative Shares of Domestic Material Consumption in Asia and the Pacific: 1992 & 2008
- **32** Ten Highest Domestic Material Consumers of Asia and the Pacific
- 33 Domestic Materials Consumption per Capita for Asia and the Pacific: 1992, 2002 & 2008
- **34** Physical Trade Balance for Asia-Pacific and its Subregions; per Capita

- 35 Material Intensity for Asia and the Pacific and its Subregions
- 36 Drivers of Increased Materials Consumption in Asia and the Pacific

### **ENVIRONMENT TRENDS**



### **ATMOSPHERE**

- **38-39** Emissions of CO<sub>2</sub> in Asia-Pacific and the World, Total
- 40 Emissions of CO<sub>2</sub>, per Capita
- 41 Emissions of CO, from Cement Production & Fossil Fuels
- Emissions of CO, Total & Change by Type
- 43 Emissions of CO per GDP
- 44 Sectors Emit the Most Greenhouse Gases
- 45 Consumption of Ozone-Depleting Substances



### **CLIMATE CHANGE**

- 47 Global Atmospheric CO2 Concentration
- **48** Temperature Anomaly
- 49 Hottest Years in Record
- 50 Global Change in Glacier Mass
- 51 Billion-Dollar Weather Disasters of 2011
- 52 Estimated Displacement by Climate-Related and Extreme Weather Events in Asia
- 53 Forecasted Population at Risk from Sea Level Rise in 2050
- 54 Population within 100 Kilometers of the Coast
- 55 Impact of Climate Change on the Hindu Kush-Himalaya Mountains on Water Resources & Overall Economy in Pakistan
- **56** Climate Change Vulnerability & Adaptation in the Livestock Sector in Mongolia



### **FORESTS**

- **58-59** Forest Average Annual Changes
- **60** Mangrove Forest Extent
- 61 Forest Change on New Ireland, Papua New Guinea
- **62** Forest Plantation Annual Changes
- **63** Forest Plantation Extent by Countries
- **64** Roundwood Production
- 65 Certified Forest Area by FSC
- 66 Certified Forest Area by PEFC
- 67 FSC & PECF Certified Forest Area



### WATER

- 69 Improved Sanitation & Drinking Water Coverage
- 70 Improved Drinking Water Coverage 1990-2011 (%, sub-regions)
- 71 Improved Sanitation Coverage 1990-2011 (%, sub-regions)
- 72 Yellow River Delta, China
- 73 The Xuan Thuy Wetland Reserve, Northern Viet Nam



### **BIODIVERSITY**

- **75** Living Planet Index
- **76** Total Mammals Species & Extinction Risk
- 77 Threatened Mammal Species: Top 20 Countries
- 78-79 Protected Areas
- 80 State of Coral Reefs (2010)
- **81** Ecological Footprint in Selected Countries



### **CHEMICALS & WASTE**

- 83 Greenhouse Gas Emissions from Waste
- 84 Number of Major Tanker Oil Spills
- 85 Nuclear Waste Spent Fuel
- 86-87 Municipal Waste Generation



### **NATURAL HAZARDS**

- 89 Impacts of Major Natural Disasters
- 90 Reported Major National Disasters
- 91 Major Extreme Weather & Climate Events in 2011
- **92** Human & Economic Losses from Earthquakes, Floods & Tropical Cyclones
- 93 Earthquake Intensity & Physical Exposure
- 94 2004 Tsunami Strike
- 95 Floods Risk & Physical Exposure
- 96 Floods Swamp Historic City: Ayutthaya, Thailand
- 97 Tropical Cyclones Risk & Physical Exposure



### **GOVERNANCE**

- 99 Multilateral Environmental Agreements
- **100** ISO 14001 Certifications
- **101** Carbon Market
- 102 Total Foreign Aid Received



### **AGRICULTURE**

- **104** Food Production Index
- 105 Rice & Cereal Production, Area Harvested & Fertilizer Usage
- **106** Total Area Equipped for Irrigation
- 107 The Aral Sea in Uzbekistan & Kazakhstan
- 108 Organic Farming

- **109-110** Selected Crops in Humid Tropical Countries (Sugar Cane, Soy Bean & Palm Oil)
  - 111 Forests Suitable for Oil Palms (2010) and Oil Palm
  - 112 Distribution
    - **Grazing Animal Herds**

# \*

### **FISHERIES**

- 114 Global Trends in World Stocks State of Exploitation
- 115 Total Fish Catch and Tuna Catches
- 116 Fish Catch & Aquaculture Production
- 117 Major Asian Fishing Countries
- 118 Aquaculture & Salt Production in Bo Hai, China



### **ENERGY**

- 120-121 Energy Consumption
- 122-123 Electricity Production
  - **124** Total Primary Energy Supply
- 125 Renewable Energy Supply
- 126 Biofuels Production
- 127 Investment in Renewable Energy by Country & Asset Class (2011)
- 127 Global New Investment in Clean Energy
- **128** Nuclear Share (2001-2011)
- **129** Nuclear Electricity Production



### **INDUSTRY, TRANSPORT & TOURISM**

- **131** Cement Production
- 132 Steel Production
- **133-134** Air Transport
- **135** International Tourism, Arrivals



### **TECHNOLOGY**

137 Internet Users & Mobile Phone Subscription



138-142 DATA SOURCES

143-145 REFERENCES

**146-147 ACRONYMS** 

148 ACKNOWLEDGEMENTS

# INTRODUCTION AND SCOPE

Keeping Track of Our Changing Environment in Asia and the Pacific was conceived to illustrate how the region has changed in two decades since decision-makers met at the United Nations Conference on Environment and Development in Rio De Janeiro in 1992. To convey this information in a compelling and succinct manner, environmental and related socio-economic trends are charted and presented using globally, regionally and nationally-aggregated data sets collected by international agencies, research bodies and other official entities. This regional publication was produced following the structure of the global Keeping Track of Our Changing Environment report.

In this regional report, major economic, environmental, social and technological trends are shown through numerically-based graphs, with their upward, downward or stable trend lines as dictated by the data. While most of these trends speak for themselves, short explanations of the phenomena observed are also provided for further elucidation. Also included are a number of illustrative "before and after" satellite images, primarily covering the same time period of 1992-2012 and showing environmental changes at the local level. In some cases, impacts are ongoing.

### **SCOPE & METHODOLOGY**

Most of the time-series data were collected directly from countries and aggregated to national regional and

are based had to be global and regional in coverage – that is, covering all or at least most countries in Asia and the Pacific so as to represent the entire region and not only selected countries. Third, the data had to be clearly sourced from authoritative and reliable institutions with extensive experience in the thematic areas treated in each case.

To ensure reliability, indicator charts are only presented for areas where all three requirements are met. For thematic areas where one or another of the criteria was not met (i.e. freshwater, chemicals and waste, land degradation and biodiversity indicators) any analysis might not be reliable and so trends are not provided.

The implications of any shortcomings in the data are clear. To promote evidence-based environmental policies and actions, the underlying data needed to support sound decision-making must be part of the equation and be of proven scientific quality. Today, there are several reasons why the quality of international statistics varies greatly. First, statistics may not be available at the national level; second, the statistics that are collected may be of poor quality or outdated; and third, the comparability of statistics over time and between countries inherently presents challenges. These deficiencies and issues demonstrate the need for a comprehensive data and information system to optimally support the vast array of related policy, scientific, technical, methodological and practical issues.

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\_15496



