



## Resource efficiency and waste minimization achieved through the 3Rs. A core element of Asia- Pacific governments' economic growth strategies

DRAFT Background paper for the 6<sup>th</sup> regional 3R Forum in Asia and the Pacific  
Maldives, 16-19 August 2015, presented by Heinz Schandl

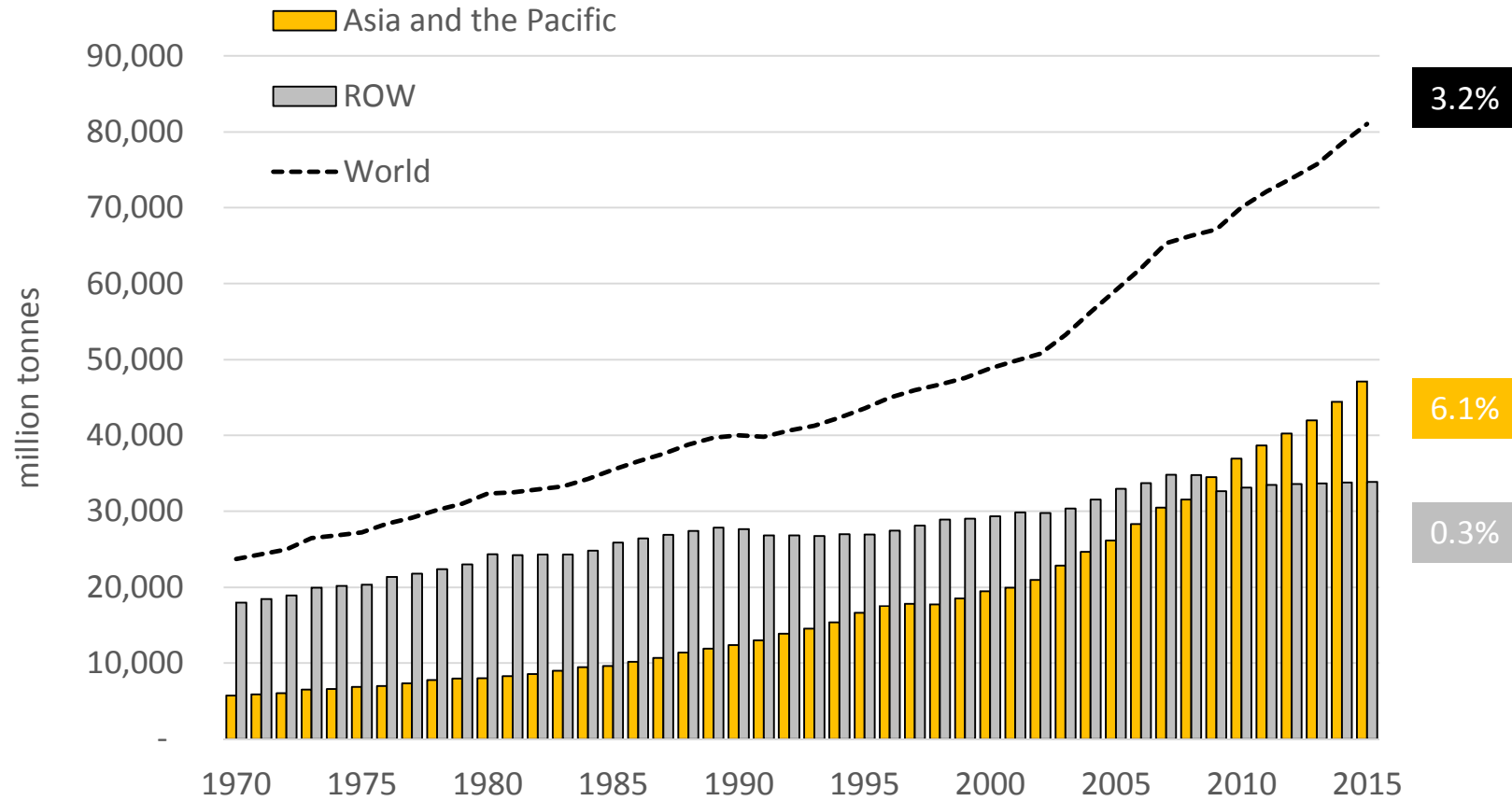
# The opportunity for Asia and the Pacific

- **Unprecedented growth in population and consumption coincides with unprecedented constraints of land availability, soil quality, water, fossil fuels, metals and fertilisers supply risks**
- **Climate impacts, pollution and waste**
- **New economic context of reduced supply security and potentially higher prices**
- **Defining question of this century: how can we accommodate more people, more production and more consumption on the same planet**
- **Most economic opportunities will arise in resource efficiency and waste minimization technologies, practices and infrastructure**

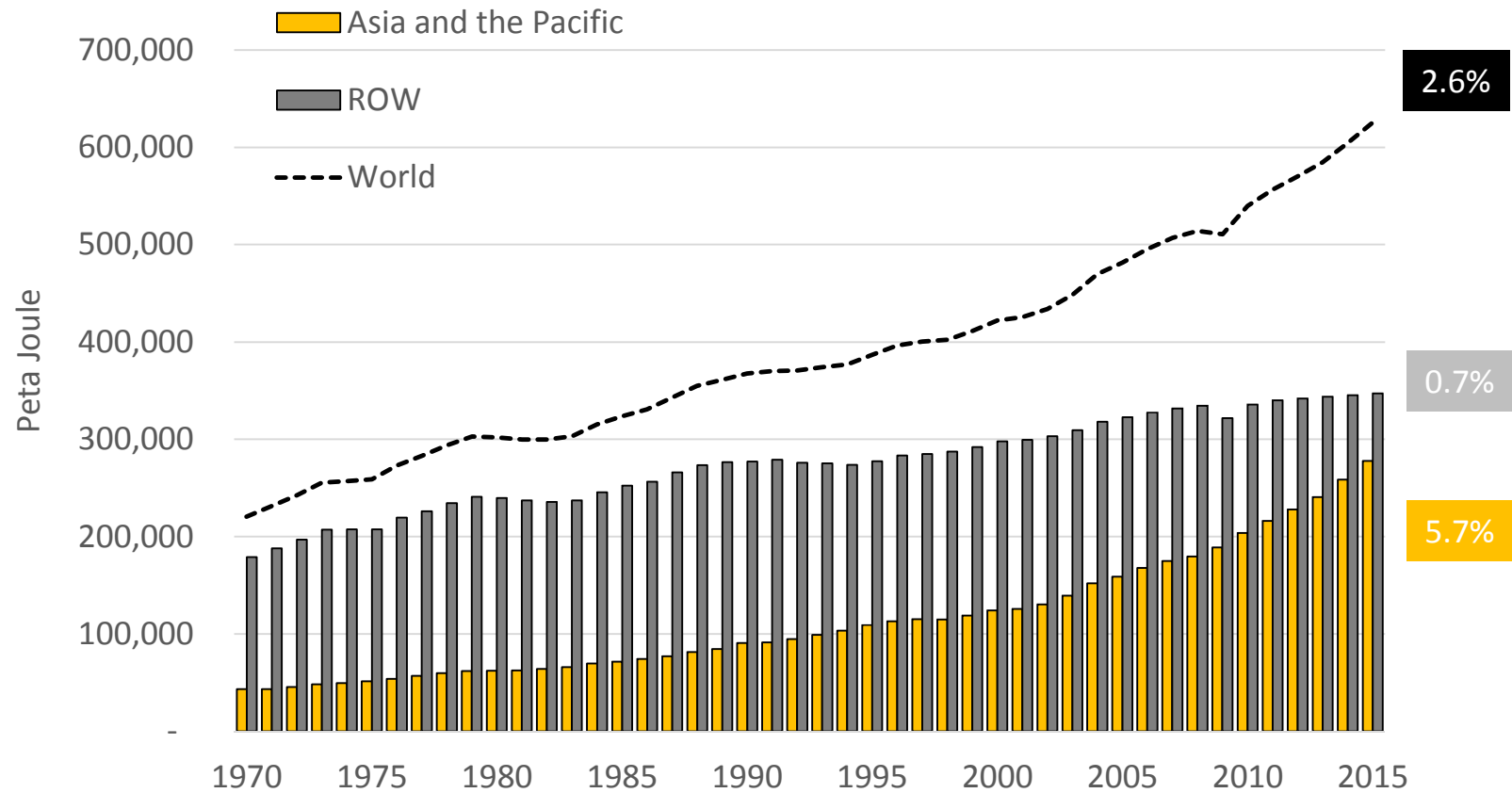
# Kondratieff cycles – long waves of prosperity

- 1<sup>st</sup> cycle 1780-1830: steam engine
- 2<sup>nd</sup> cycle 1830-1880: railway, steel
- 3<sup>rd</sup> cycle 1880-1930: electrification, chemicals
- **Great depression 1929**
- 4<sup>th</sup> cycle 1930-1970: automobiles, petrochemicals
- **First and second oil price shock 1973, 1980**
- 5<sup>th</sup> cycle 1970-2010: information and communication technology
- **Global Financial Crisis 2008-09**
- 6<sup>th</sup> cycle 2010-onwards: environmental technology, nanotechnology and biotechnology – 3R's, SCP, green growth

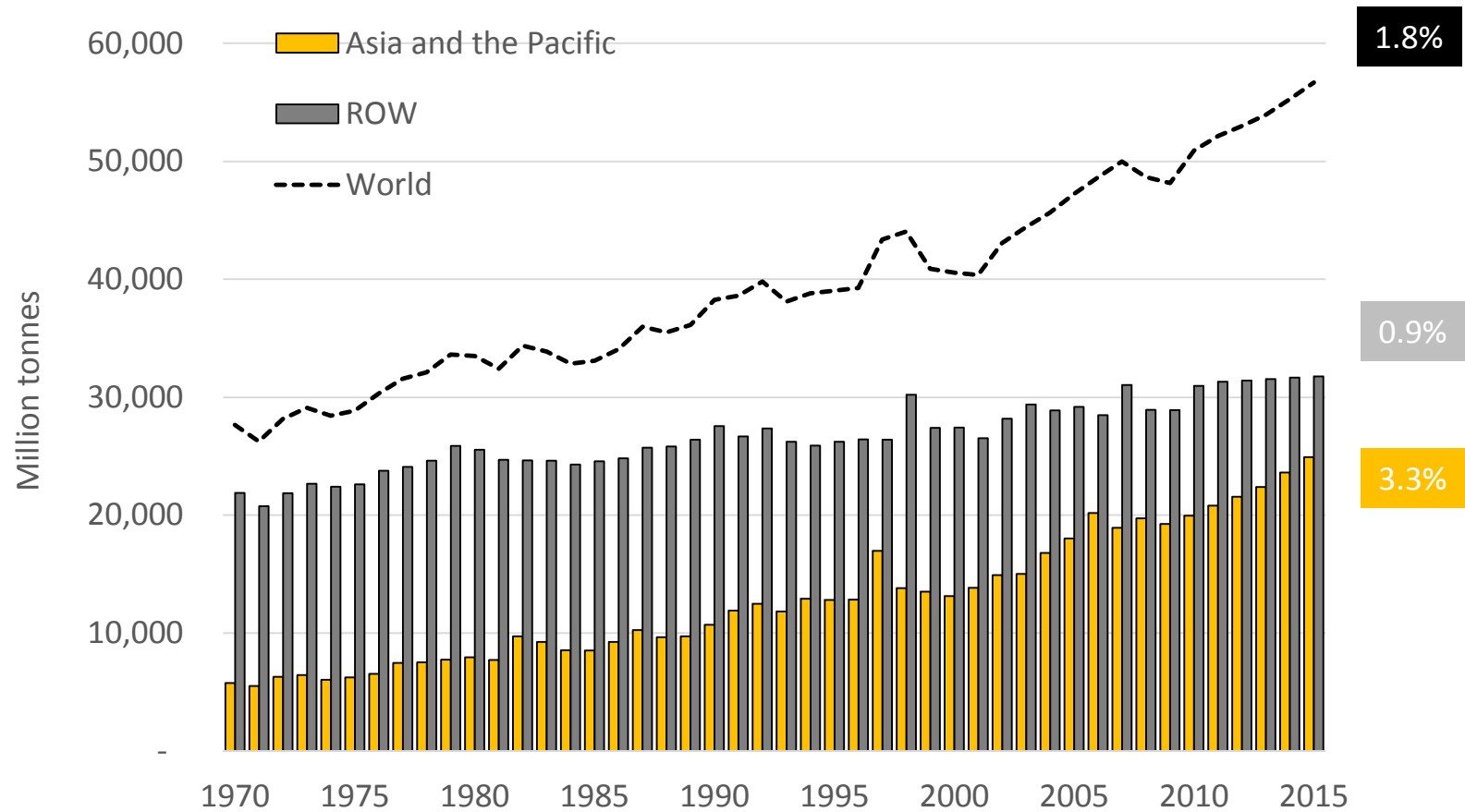
# Current trends in material and energy use and emissions



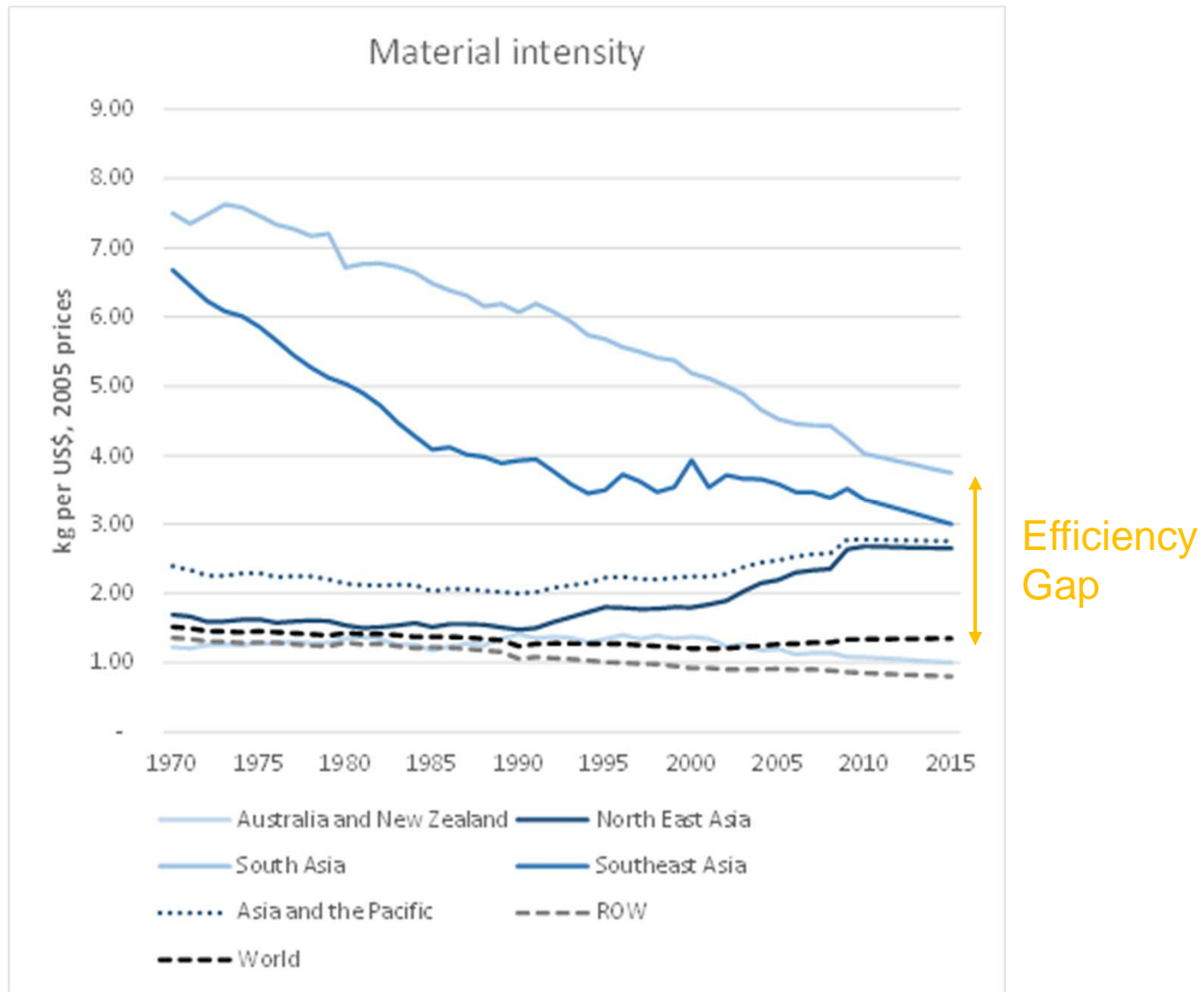
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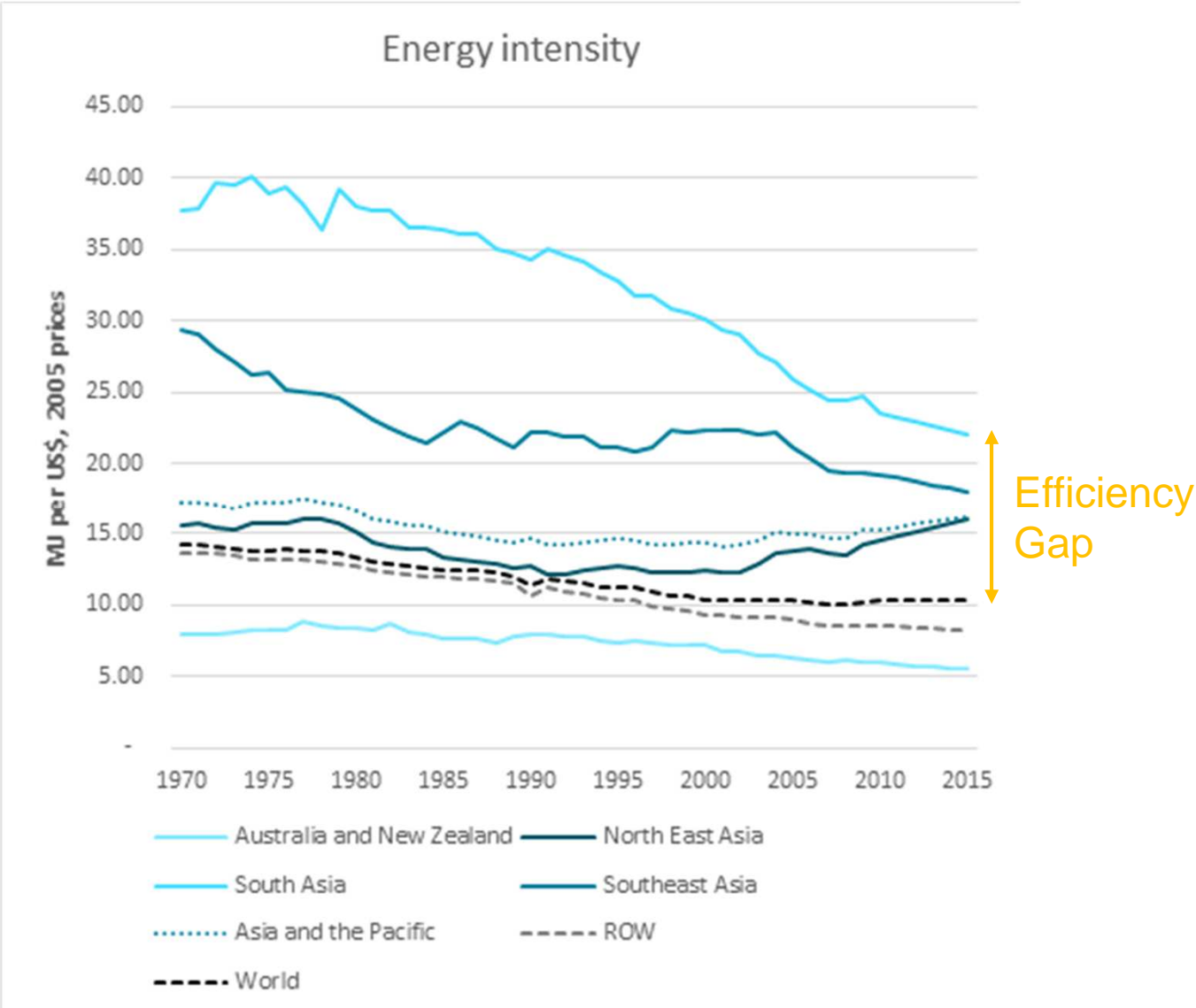
# Current trends in material and energy use and emissions



# Current trends in resource efficiency



# Current trends in resource efficiency







# Global and regional policy initiatives

- Post-2015 development agenda and new Sustainable Development Goals
- Agreement of ministers and environmental authorities of their first forum in Bangkok on priorities for Asia and the Pacific
- Group of 7 initiative for resource efficiency based on the Kobe 3R declaration
- Process of economic integration and technical cooperation in Asia and the Pacific
- Japan: Sound Material Cycle Society high-level policy goal
- China: Circular Economy Promotion Law

# Post-2015 development agenda and new Sustainable Development Goals

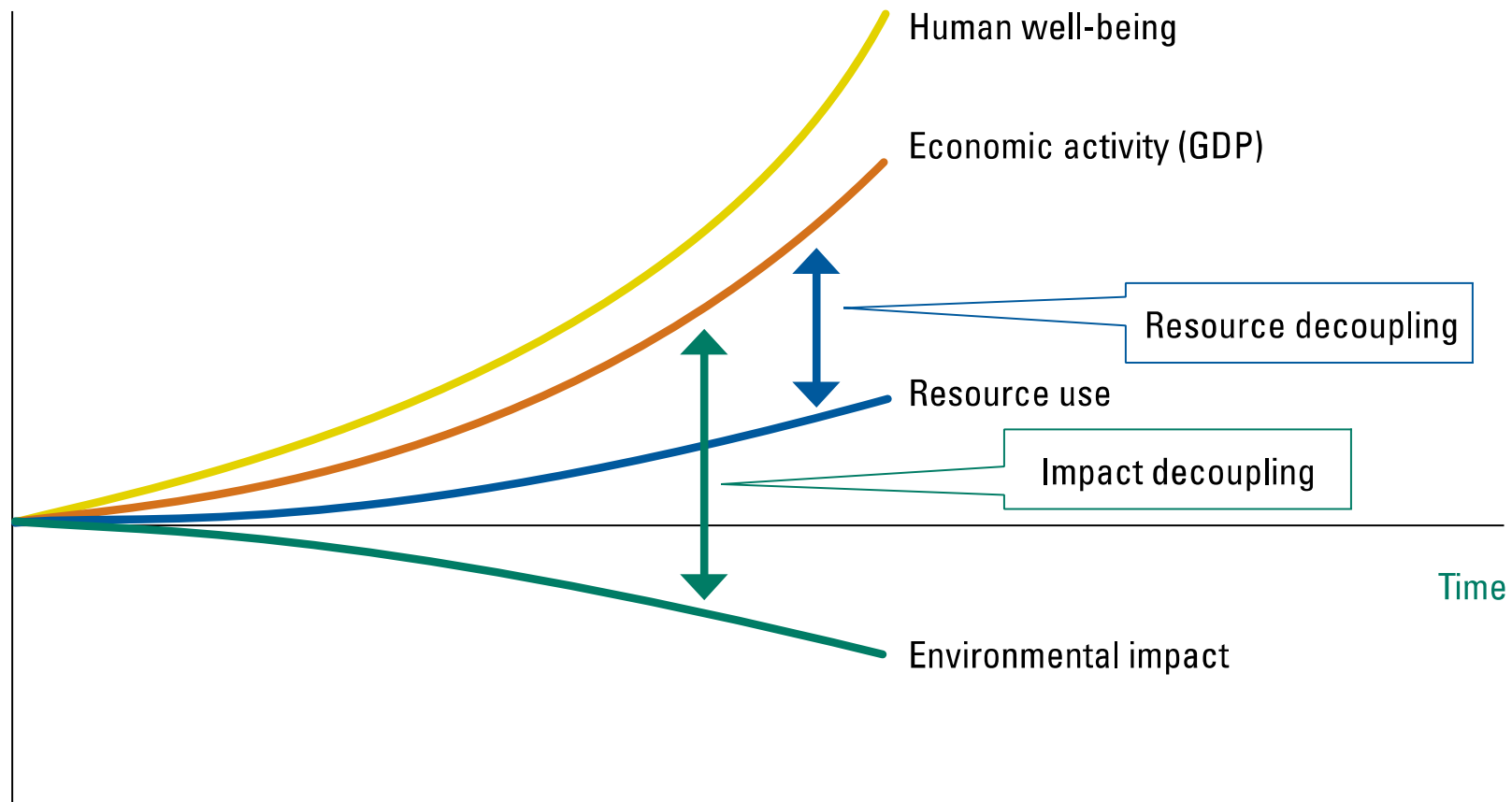
- GOAL 8 Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
  - 8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programmes on sustainable consumption and production, with developed countries taking the lead
- GOAL 12 Ensure sustainable consumption and production patterns
  - 12.2 By 2030, achieve the sustainable management and efficient use of natural resources
  - 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse

# First forum of ministers and environment authorities of Asia Pacific in Bangkok, May 2015

- The effect of **climate change and disasters** and increasing vulnerability of countries in Asia and the Pacific, which will continue to impose economic losses that could offset development gains, increase poverty and threaten water and food security.
- Deteriorating health and rising costs from **air, water and soil pollution** due to emissions, effluent and waste from industry, transport and agriculture.
- Threatened **food, water, and energy security** due to increasing population, rapid urbanization, changes in land use and widespread pollution.
- **Increasing resource use**, with little improvement in **resource efficiency**, causing degradation and loss of ecosystems services and additional financial burdens.
- **Gaps in scientific knowledge and evidence based** understanding of the causes of environmental degradation were adversely affecting the confidence of policy makers in taking timely and decisive action to safeguard the common environment.

# Decoupling economic growth and environmental pressure/impact

Figure 1. Two aspects of 'decoupling'



Source: UNEP 2011

Resource efficiency and waste minimization achieved through the 3R. s | Heinz Schandl



# Decoupling – more from less

- Decoupling through maturation and structural change of the economy
- Decoupling or recoupling through technology change
- Decoupling through outsourcing
- Decoupling through systems innovation

# Opportunities in resource and emission intensive sectors

- **Heavy industry – iron and steel, cement, and paper industries**
- **Construction and housing**
- **Transport and mobility**
- **Agriculture and food**
- **Energy provision**

# Transformative policies

- **Ecological budget and tax reform**
- **Carbon abatement through a market mechanism (cap and trade, carbon tax)**
- **Remove subsidies on primary resources**
- **Invest in green economy**
- **Consume responsibly (governments and households)**



## A policy agenda for achieving the SDG's based on the 3R's: resource efficiency and waste minimization

- Resolve the tension between economic growth and environmental sustainability through a regional/national conversation
- Extend the mandate of the regional 3R Forum to facilitate this conversation
- Establish a regional advisory panel of eminent scientists and community leaders
- Promote and introduce transformative policies
- Mainstream 3R policies into sectoral policy
- Mainstream 3R policies into trade agreements and market liberalization

## ... Policy agenda continued ...

- Regional financing mechanisms for projects and experiments that enhance resource efficiency – New Asian Infrastructure Bank
- Regional private–public partnerships need be promoted to establish demonstration projects of eco-city precincts and eco-industrial parks
- Establish a knowledge-sharing platform based on a university collaboration network
- Establish an Asia-Pacific research area to drive policy relevant research

# Thank you

Please be in touch for any feedback you may have.

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