SUSTAINABLE DEVELOPMENT : HISTORICAL EVOLUTION , MILESTONES AND CURRENT STATUS

IN 00.41:

Climate Change Challenges and Responses

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AIT

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SCOPE OF THIS LECTURE :THREE QUESTIONS

01 How Sustainable Development Evolved: Key Global Milestones and Current Status

02 What are the Key Focus Areas for Sustainability for Operation

03 How do you translate principles and concepts in "Real World"

AND SOME TAKEAWAYS

This lecture focuses on the global milestones on the path to sustainability. It highlights the key trends and challenges for the Asia Pacific region: Energy, Transport, Urbanization, Waste Management, Declining Biodiversity, Climate Vulnerability ,SCP & Circular Economy and lastly sustainable green growth.

GLOBAL MILESTONES

1950s

Charles Keeling & "Keeling Curve"

Roger Revelle suggested human gas emissions might create a "greenhouse effect" that would cause global warming over time

1970s

United Nations Environment Programme, and US-EPA

1972

Stockholm Conference

- Creation of UNEP
- Formulation of Environmental Legislations/Regulations (Malaysia 1974, Thailand 1975, Philippines 1977, PRC 1979)

1982

Stockholm Conference

- More environmental institutions were established/strengthened
-Formulation of environmental legislations

UN Convention on the Law of the Sea

- Defined the rights and responsibilities of nations in their use of the world's oceans

GLOBAL MILESTONES

Brundtland Commission's "Our Common Future"

-Concept of Sustainable Development as development which "meets the needs of the present without compromising the ability of future generations to meet their own needs"

- Integration of environment into macro operations and sectoral policies and creation of environmental cells in sectoral departments or agencies

UNCED or "Rio Summit"

- Brought "the environment" to political agenda of governments
- Committed nations to implementation of Agenda 21,
- United Nations Framework Convention on Climate Change
- UN Convention on Biodiversity
- Agreements on Basic Principles for Managing and Conserving World's Forests

GLOBAL MILESTONES

1994 — **Convention to Combat Desertification**

1995 — **COP 1 held in Berlin**

1997 — **Kyoto Protocol**
- established legally binding obligations for developed countries to reduce GHG emissions

2002 — **WSSD / Rio + 10**
- Stockholm Convention (POPs) in 2004
- UNFCC text adopted

2006 — **Stern Review**
- Helped galvanize attention to climate change among finance ministers

2009 — **UNFCCC Copenhagen Accord (Climate Change)**
- Commitments on the establishment of a "Green Climate Fund"
- UNFCC enters into force in 1994
- UNFCCC Secretariat Set up to support the convention in 1996

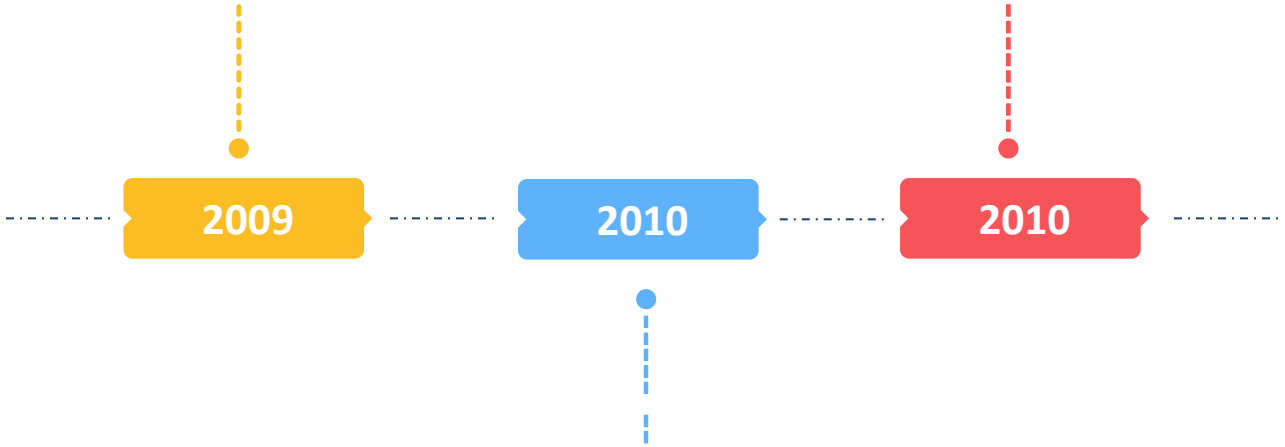
GLOBAL MILESTONES

Declaration on Green Growth (OECD)

- Pursue green growth strategies as part of response to crisis and beyond

Aichi Biodiversity Targets and Nagoya Protocol

- 20 ambitious targets on biodiversity
- Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization



Incheon Declaration on Green Growth (ESCAP)

- Strengthen efforts to purse green growth strategies as part of response to the current crisis and beyond"
- ASEAN Leaders' Statement on Sustained Recovery and Development – promote green growth, investments in long term sustainability and sustainable use of natural resources
- PRC, Japan and Republic of Korea pursued green growth initiatives

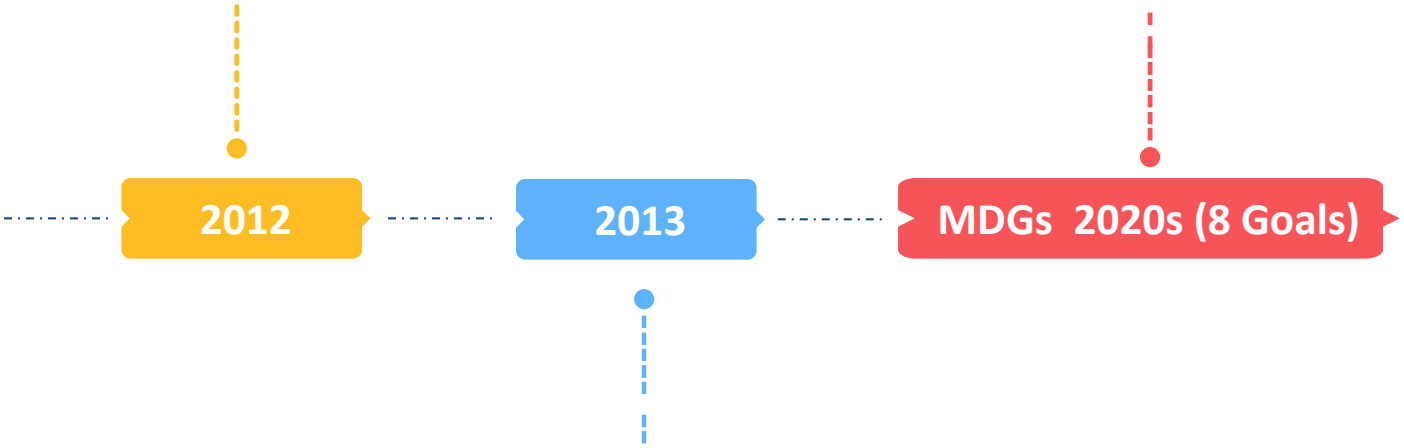
GLOBAL MILESTONES

UNCSD or "Rio + 20"

- Outcome document: "*The Future We Want*" (green economy as a tool for SD, stronger UNEP, CSR, beyond GDP, SD financing strategy, oceans and marine BD, SCP 10 years framework)

Commitment to a process to establish Sustainable Development Goals to be integrated into the post 2015 development agenda

- Eradicate Poverty
- Achieve universal Primary education
- Promote Gender equality & Empower women
- Reduce Child mortality
- Improve Maternal health
- Combatting HIV/AIDs, malaria, and other diseases
- Ensure Environmental Sustainability
- Develop Global Partnership for development



Minamata Convention

- Protect human health and environment from anthropogenic emissions and releases of mercury and mercury compounds

Sustainable Development Goals

(17 Goals & 169 Targets)

SDGs Goals and targets are integrated and indivisible, global and universally applicable

Targets are defined as ASPIRATIONAL and GLOBAL

Each government will decide how aspirational and global targets should be incorporated in National Planning process and strategies

Challenge of translating into National Level(aspiration to actions)

September 2015

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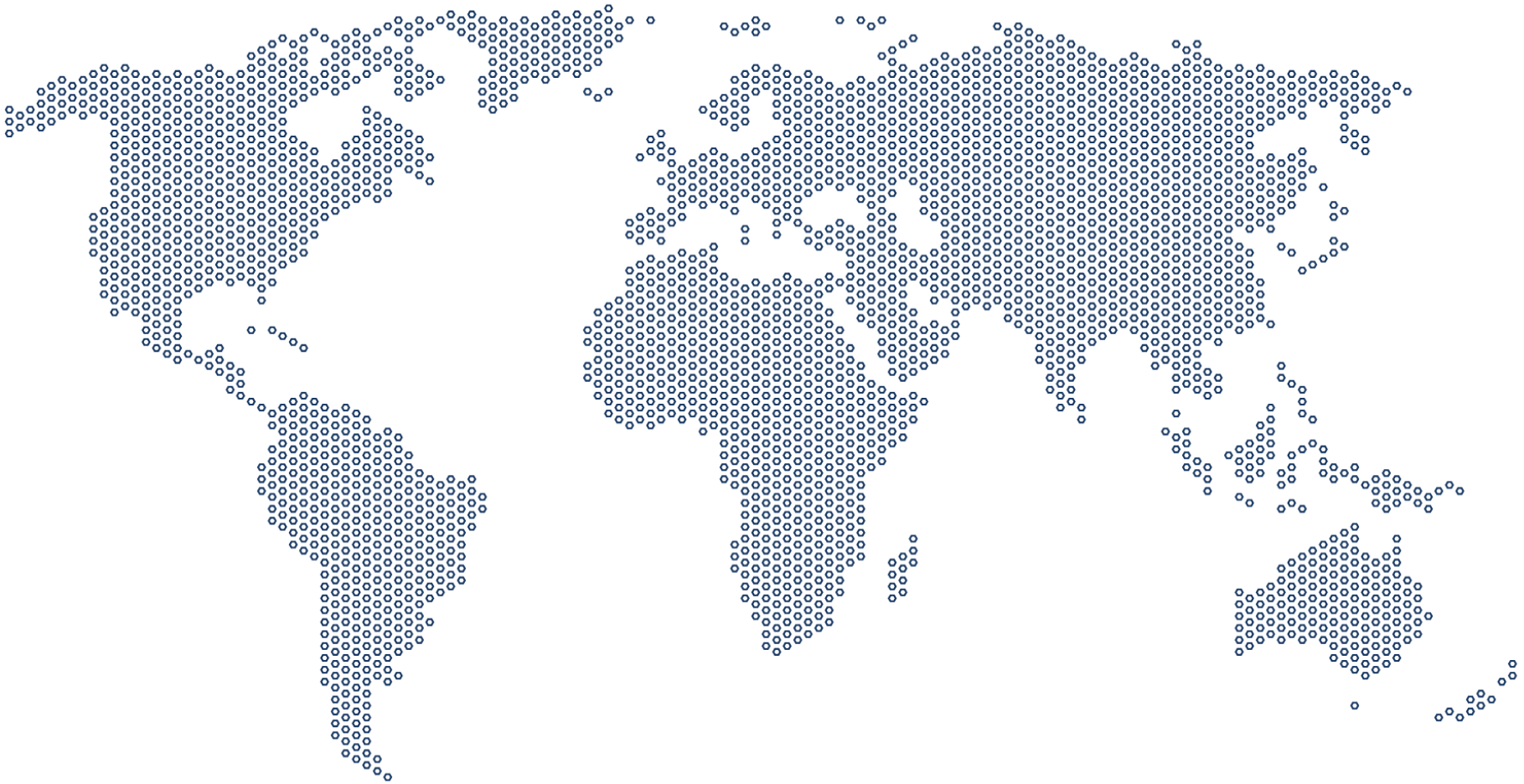
SDG PROGRESS IN ASIA AND PACIFIC COUNTRIES , 2022

(SNAP SHOT)

SDGs PROGRESS BY 2022

Progress towards the SDGs in the Asia-Pacific region has slowed as the COVID-19 pandemic and climate change have exacerbated development challenges.

The region is not on track to achieve any of the 17 SDGs.

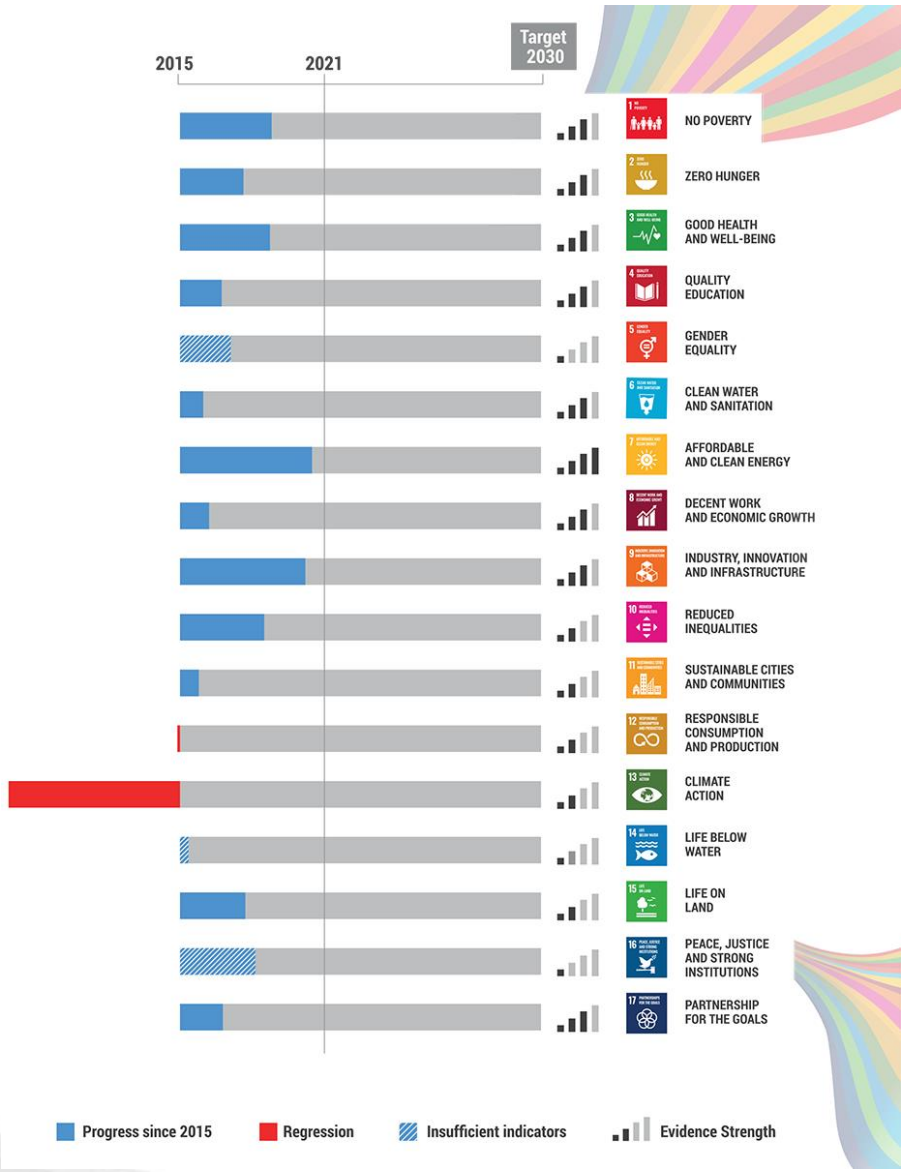


At the current rate of change, none of the 17 SDGs will be achieved in all five subregions, and only

East & North-East Asia is on track

*towards **no poverty (Goal 1)** and industry, innovation and infrastructure (Goal 9).*

SDG 13 CLIMATE ACTION



PROGRESS ON GOAL 13: CLIMATE CHANGE

The available data show significant regression against the 2015 baseline for Goal 13.

While data are insufficient for several targets of Goal 13 ,

The existing evidence on the measurable targets suggests GHG emissions in the region have continued to rise, and natural disasters are having an increasing impact on people and economies.

Reversing the negative trend on climate action is needed

COP 21: PARIS AGREEMENT

1 Key Elements

- 190 Countries participated
- 160 Intended Nationally Determined Contributions(INDCs)
- Diplomatic Success but Lots of follow Actions needed
- 2 degree C target has not been achieved (aspiration to 1.5 degree C above pre-industrial level)

2 Key Areas

- INDCs (Intended Nationally Determined contributions)
- Mitigation
- Adaptation
- Losses and Damages
- Finance
- Technology Development and Transfer
- Capacity Building

December 2015

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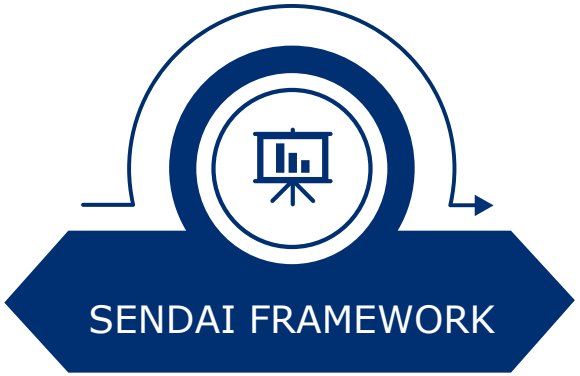
COP 26 NOVEMBER 2021 & COP 27 NOVEMBER 2022

- Most countries have commitment to Net Zero
- Carbon Neutrality (1.5 C by 2050) (China in 2060 , India in 2070 and some even before 2050).
- Coal to be phased down (not phase out) and positive tone on abatement
- There was greater support for adaptation needs.
- And, on Financing , greater commitment to pre-agreed $ 100 billion /year .
- I also saw a strong commitment by private sector to invest in clean energy , technology and innovation.
- In COP 27 ,there was positive discussions (first time) on financing losses and damages

POST 2015

Sustainable cities and human settlements for all, Habitat III, 2016



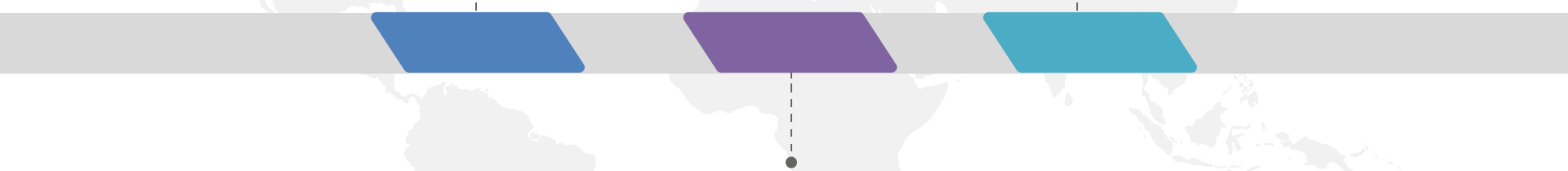
Sendai Framework for Disaster Risk reduction (2015-30), June 2015

Push towards Sustainability

MILESTONES TOOLS

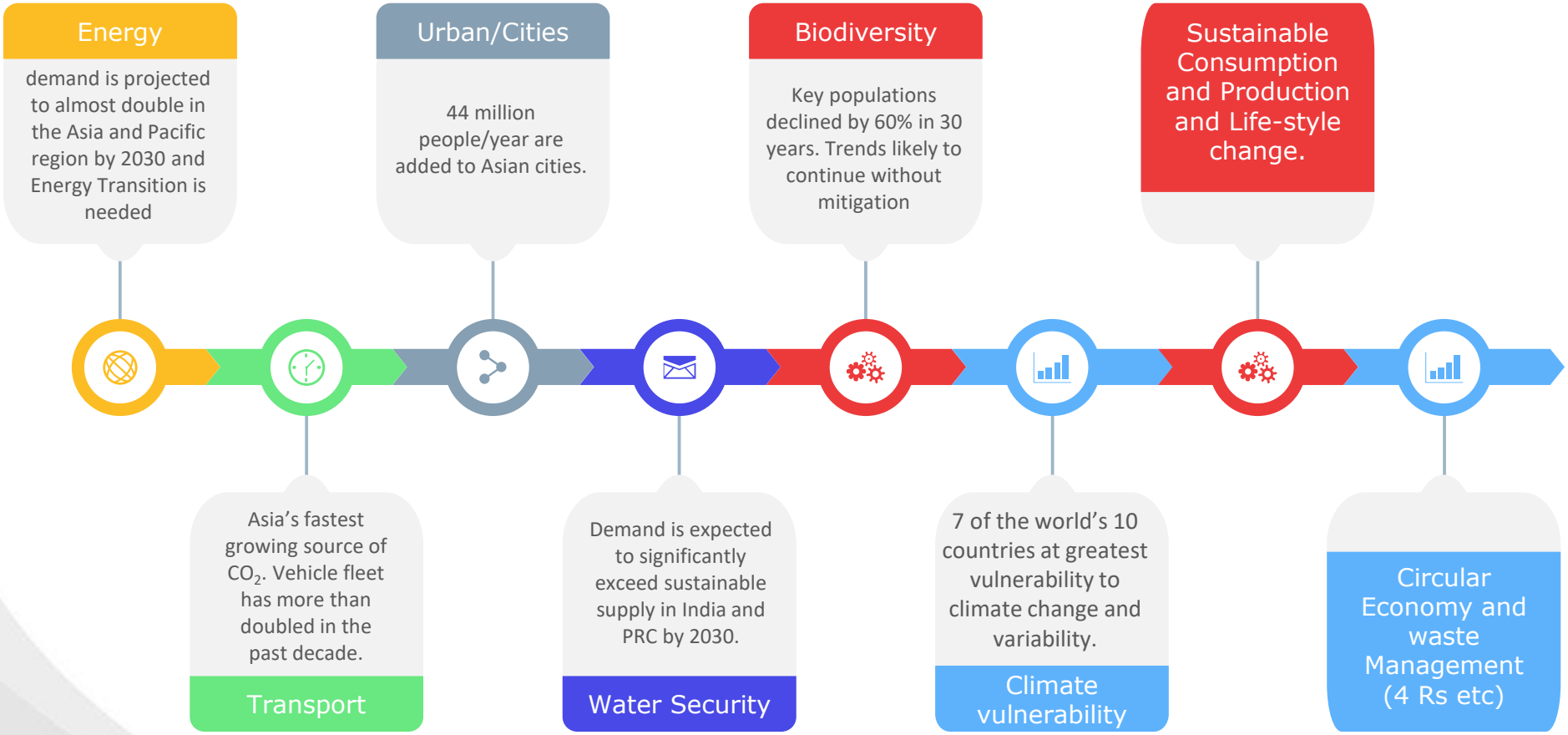
Environmental Impact Assessment (Fully accepted by countries in their regulatory framework)

Climate Impact Assessment (next on pipeline)



Environment, Social and Governance (ESG)

PRIORITY FOCUS AREA ON ASIA-PACIFIC REGION



1. ASIAN ENERGY OUTLOOK

- Asia makes half of global growth in natural gas
- 60% rise in wind and solar PV
- More than 80 % of increase in oil
- 100% of the growth in coal and nuclear (given decline elsewhere)
- The shale oil and gas supply will make US the worlds largest oil and gas producer
- India and China are driving energy consumption

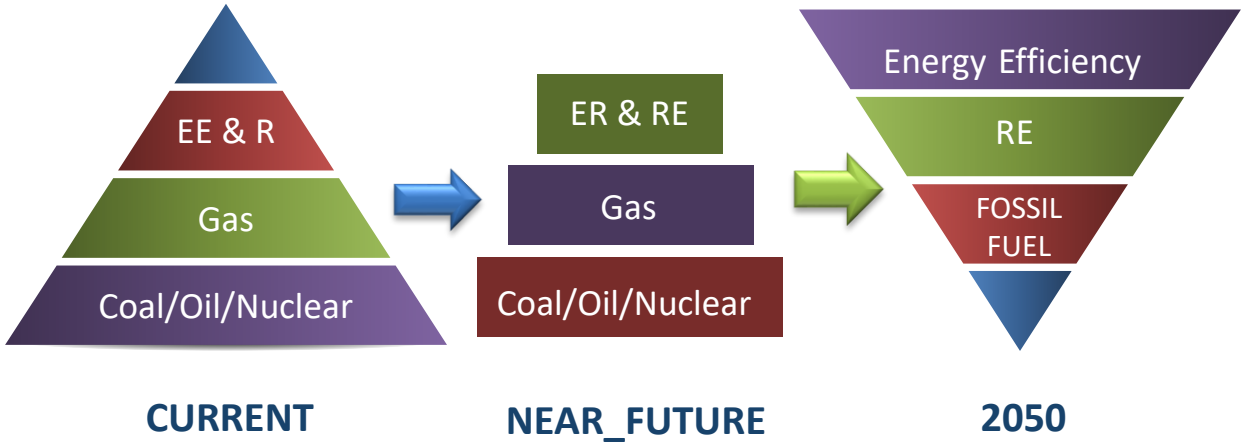
Source: WEO, 2018

ENERGY TRANSITION IS A MUST FOR ASIA

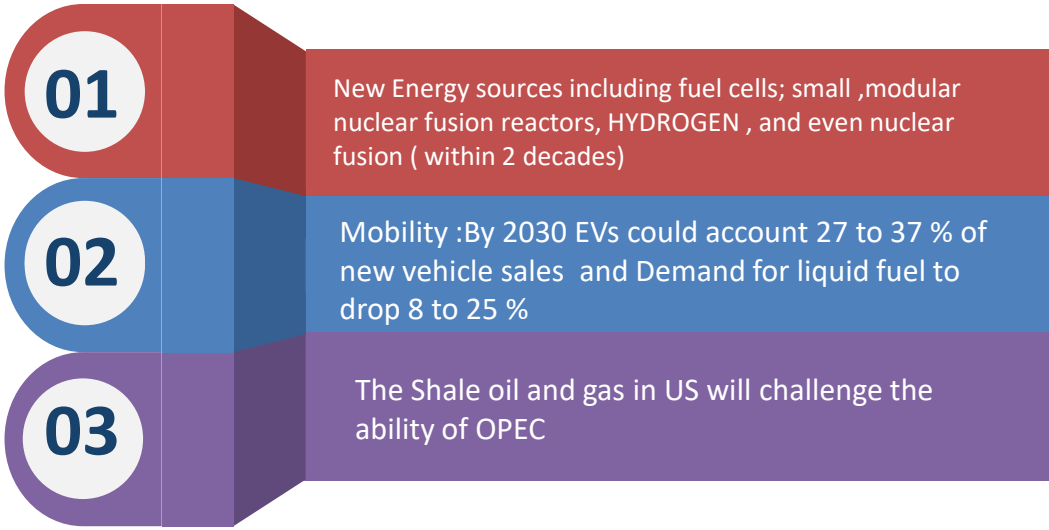
It is clear that **Asian Region** needs to transition away from coal -based on energy to **clean energy** (renewables) and countries are already moving in that direction.

MARKET TRANSFORMATION

Unlock Asia's Clean Energy Future



Three Game Changers for Energy



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2. TRANSPORT

Need to transform the transport sector (public transport, EVs ,…)

Metro projects , e-vehicles , Railways, Inland waters ,Non-motorized transport and Integrated Urban transport

Need for a new approach to transport financing and investment

Electric Vehicles

1. Worldwide stock surpassed 2 million units in 2016.
2. China, US and Europe account for 90% of all EVs sold around the world.
3. Projected 30 million by 2025 and 150 million in 2040

3. URBANIZATION: CITIES

- ✓ Urban areas account for **84% of global GDP**
- ✓ **600 cities** account for **60% of GDP** (50% of these cities are in Asia)
- ✓ **577 second-tier cities** to account for 50% of global GDP by 2025
- ✓ 50 % of the GHGs emitted in ASIA

Two Challenges in Asian Cities

- ✓ ***Increasing urban poverty and growing inequality***

  Out of 1.6 billion urban people in Asia, more than 500 million are urban poor

- ✓ ***High levels of environmental & climate stress***

  -Urban areas account for 60-80% of energy consumption and 75% of carbon emissions.

  - Making City Resilient and making ***carbon neutral city.***

Green, Smart, Inclusive, resilient and Livable cities are required

Source: McKinsey Global Institute. 2011. *Urban world: Mapping of the economic power of cities*.

4. WATER SECURITY AND WATER RESILIENT

Challenges of Water Security and Water Resilience

Water Security :

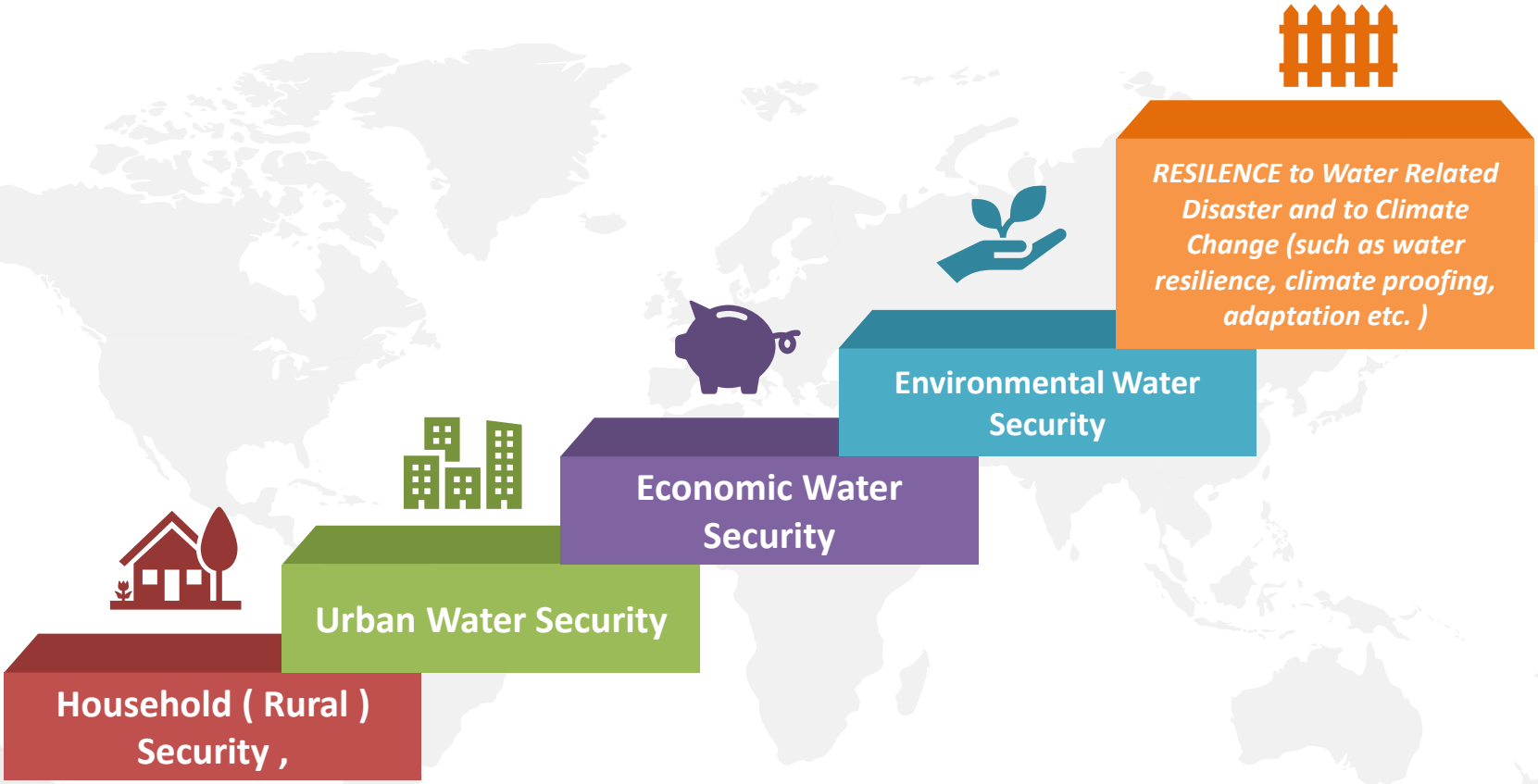
RUWS - are We Water Secured?

Water Resilient /RUWR :

Are We Water Resilient ?

4. WATER SECURITY

Water Security needs to address five (5) dimensions :



4. WATER RESILIENT AND CLIMATE ADAPTATION

- ✓ How can we main-streaming Water Resilience in Water programs and projects in the Asia- Pacific Region,
- ✓ Challenges of Climate Proofing, Adaptation and Resilience in Water Development Projects

5. BIODIVERSITY AND CLIMATE CHANGE

Biodiversity as a " Paris Moment "

- ✓ Land and marine ecosystems which are home to the vast majority of the world's species - forests, peatlands, coastal areas and the ocean - ***absorb more than 50 per cent of man-made carbon emissions.***

- ✓ This makes them ***vital to meeting the Paris*** Agreement's central goal of holding global average temperature rise ***to below 1.5 degrees*** compared to pre-industrial times.

5. BIODIVERSITY CONFERENCE, 19 DECEMBER 2022

"30 x30" TARGET

- ✓ UN Climate Change News, 19 December 2022 – Countries meeting at the UN Biodiversity Conference COP15 in Montreal have reached an agreement that represents a key step in protecting the world's lands and oceans and bolsters efforts to safeguard the world's climate.
- ✓ Almost 200 countries have agreed to a new set of goals and targets to "halt and reverse" biodiversity loss by the end of the decade.
- ✓ Governments committed to *protect 30% of land and water* considered important *for biodiversity by 2030. Currently, only 17% of terrestrial and 10% of marine areas are protected.*
- ✓ Final deal, reached in the early hours of Monday 19 December, included the oft-repeated headline target of **"30×30"** – an ambition to conserve **30% of the world's land** and **30% of the ocean by 2030.**
- ✓ A second "30×30" goal also made it into the final package, with developed countries agreeing to mobilize **$30bn for developing countries by 2030.**

5. BIODIVERSITY AND CLIMATE CHANGE

Overall forest cover has increased since 2000: significant reforestation in the PRC driving regional trends

- ✓ **Populations of mammals, birds, fish, reptiles & amphibians have declined by 64% in Asia-Pacific (twice the global average!)**
- ✓ **Ongoing loss of primary forest in Indonesia, PNG, Lao PDR**
- ✓ **Need to protect, restore and enhance the management of ecosystems**
- ✓ **Greater attention needed on oceans and coasts**
- ✓ **Economic valuation of ecosystems services needs to be integrated in decision-making**

6. CLIMATE VULNERABILITY, HAZARDS AND RISK

- ✓ In many ways , ASIA is on the frontline of a changing Climate.
- ✓ In many ways ,Asia face more severe impacts than OTHER REGIONS
- ✓ The extent of climate risk facing the Region and effective response for adaptation and mitigation is the Challenge

6. REGIONAL FACT SHEET – ASIA 6th IPCC REPORT

Common regional changes

- ✓ The observed mean surface temperature increase has clearly emerged out of the range of internal variability compared to 1850-1900. Heat extremes have increased while cold extremes have decreased, and these trends will continue over the coming decades (*high confidence*).
- ✓ Marine heatwaves will continue to increase around Asia (*high confidence*).
- ✓ Fire weather seasons will lengthen and intensify, particularly in North Asia regions (*medium confidence*).
- ✓ Average and heavy precipitation will increase over much of Asia (*high* to *medium confidence*).
- ✓ Mean surface wind speeds have decreased in Asia (*high confidence*) and will continue to decrease in central and northern parts of Asia (*medium confidence*).
- ✓ Glaciers are declining and permafrost is thawing. Seasonal snow duration, glacial mass, and permafrost area will decline further by the mid-21st century (*high confidence*).
- ✓ Glacier runoff in the Asian high mountains will increase up to the mid-21st century (*medium confidence*), and subsequently runoff may decrease due to the loss of glacier storage.
- ✓ Relative sea level around Asia has increased faster than global average, with coastal area loss and shoreline retreat. Regional-mean sea level will continue to rise (*high confidence*).

6. ECONOMIC OF CLIMATE CHANGE

- ✓ The costs and risks of climate change is equivalent to losing at least **5-20%** of global GDP per year
- ✓ Economics of containing the global warming below 2°C will mean an **annual cost of 1% GDP**
- ✓ **India** and **S.E. Asia** could lose on **average 2-3%** and as much as a **9-13%** (95 percentile) **of GDP by 2100**
- ✓ Based on ADB studies, economy-wide loss by 2100 can be as high as:
  - ✓ **6.7% of GDP/year** for **Indonesia, Philippines, Thailand and Viet Nam**
  - ✓ **8.8% of GDP/year for Bangladesh, Bhutan, India, Maldives, Nepal, Sri Lanka**
  - ✓ **5.3% of GDP/year PRC, Japan, Republic of Korea, and Mongolia.**
- ✓ Need to address climate vulnerability
  - ✓ Mitigation
  - ✓ Adaptation
- ✓ Need to strengthen disaster risk management
- ✓ Climate Financing

7. SUSTAINABLE CONSUMPTION AND PRODUCTION AND LIFESTYLE CHANGE:

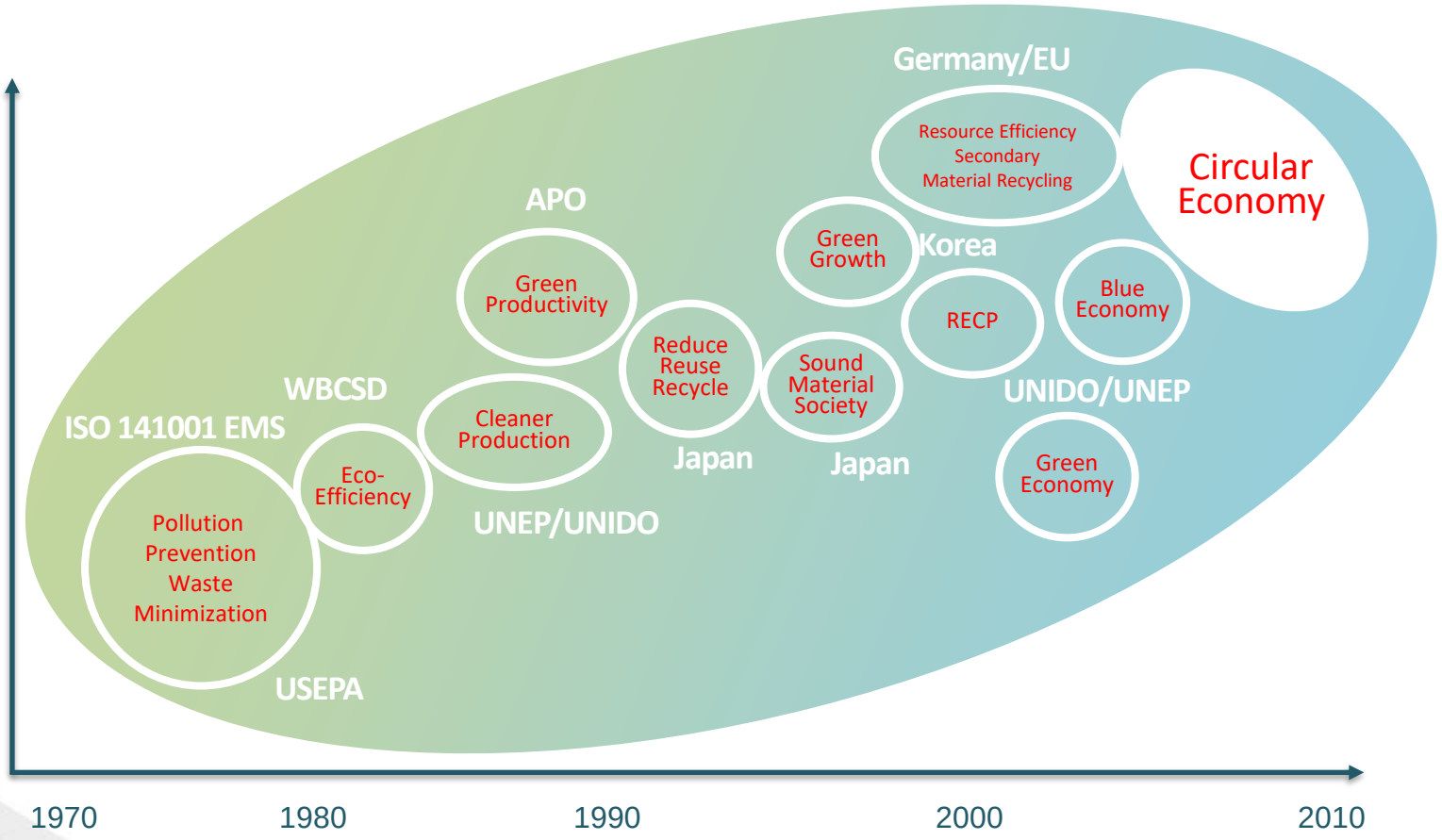
- ✓ LIFE-STYLE CHANGE

- ✓ SCP

(Sustainable Consumption & Production)

8. CIRCILAR ECONOMY

Evolution of the Concept of Circular Economy



8. CIRCULAR ECONOMY: HOW TO TRANSITION

Sustainability, sustainable development and climate change will remain as one of the most important agenda for the world in the 21st century

CONTINUE COMMITMENT AND IDENTIFY PATHWAYS TO ADDRESSING CLIMATE CHANGE ,GREEN GROWTH AND GREEN ECONOMY

Finding Alternative paths that will bring about transformational change

- ✓ Move to The Energy Transition Pathways (deep decarbonization, REs)
- ✓ Shift to more resilient low carbon infrastructure development
- ✓ Achieve gains in resource-use efficiency
- ✓ Achieve resilience against climate change and other shocks and stresses
- ✓ Life-style change
- ✓ Adopting green technologies
- ✓ Others

Thank you

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