

# **SUSTAINABLE DEVELOPMENT : HISTORICAL EVOLUTION , MILESTONES AND CURRENT STATUS**

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# SCOPE OF THIS LECTURE THREE QUESTIONS

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How Sustainable Development Evolved and **what Leadership roles were required** : Key Global Milestones and Current Status  
How do you translate principles and concepts in “Real World”

01

02

What are the Key Focus Areas for **Leaders in Asia** for Sustainability for Operation

03

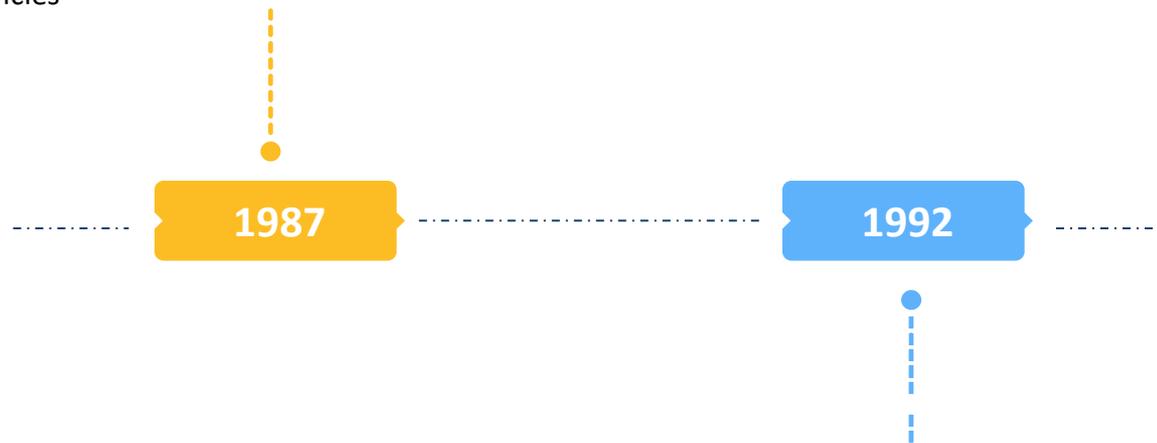
## AND SOME TAKEAWAYS

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

# 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 economic ,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

## ⚙️ Convention to Combat Desertification

1994

## ⚙️ Kyoto Protocol

- established legally binding obligations for developed countries to reduce GHG emissions

1997

## ⚙️ Stern Review

- Helped galvanize attention to climate change among finance ministers

2006

1995

## ⚙️ COP 1 ( Conference of Parties )held in Berlin

2002

## ⚙️ WSSD / Rio + 10

- Stockholm Convention (POPs) in 2004  
- UNFCC text adopted

2009

## ⚙️ UNFCCC Copenhagen Accord (Climate Change)

- Commitments on the establishment of a **"Green Climate Fund"**  
- UNFCCC enters into force in 1994  
- UNFCCC Secretariat Set up to support the convention in 1996

# Sustainable Development Goals

(17 Goals & 169 Targets)



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

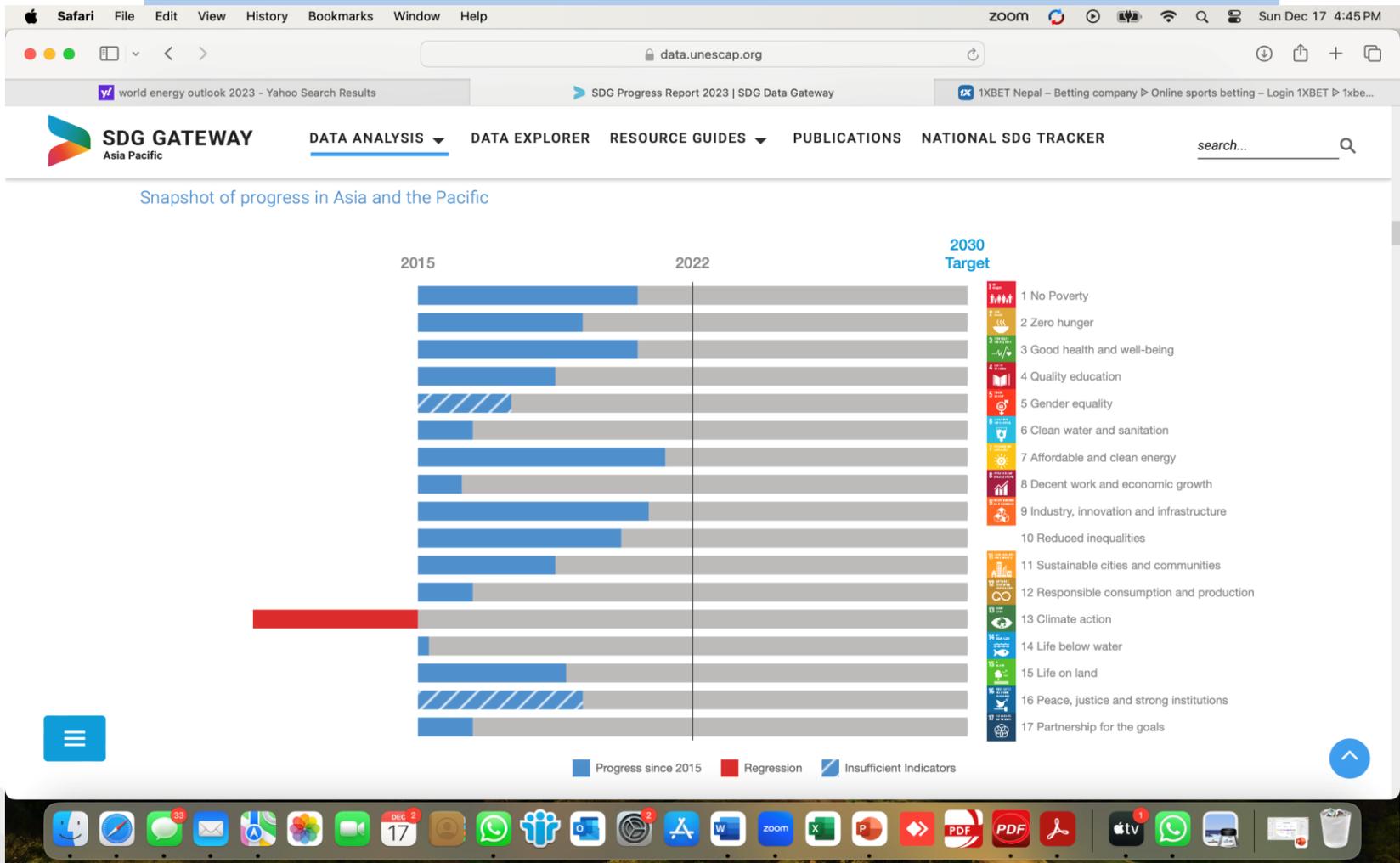
Challenge of translating into National Level (aspiration to actions)

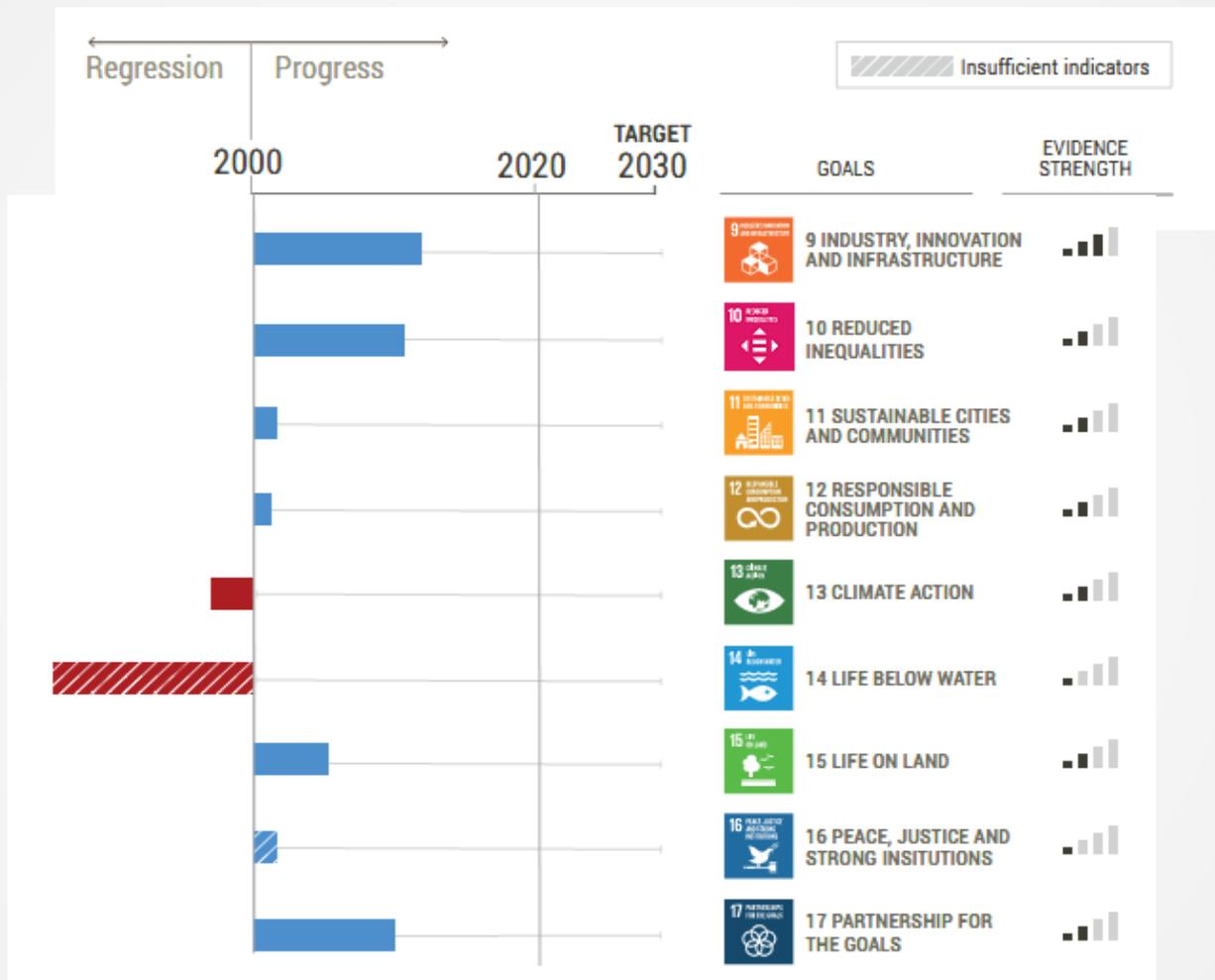
Targets are defined as ASPIRATIONAL and GLOBAL

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

September 2015

# SDG PROGRESS IN ASIA AND PACIFIC COUNTRIES , 2022





Source: UN-ESCAP, 2021



Source: UN-ESCAP, 2021

# SDGs PROGRESS BY 2022

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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.*

- ***THE CURRENT LEADERSHIP FOR MEETING  
SDGs***

***IS INADEQUATE***

# PROGRESS ON SDG GOAL 13: CLIMATE CHANGE

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*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

## 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)

**December 2015**

## Key Areas

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



# 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



# COP 28 ( Nov-Dec , 2023)

- **Transition from Fossil Fuel** : Nearly 200 countries agreed as part of the " **global stocktake**". The language is weak – no " phase out " , no phase down " but a weak language to ask for action
- **Tripling of Renewal Energy , doubling of energy efficiency and " substantially reducing " methane emissions , all by 2030( the global stocktake proposed ) . 130 countries agreed for installed capacity ( exception China and India )**
- **Loss and Damage** : Nations launched a new "loss and damage fund " on day one of COP28 which was welcomed as the major outcome . It marked the culmination of a decade-long effort by climate vulnerable nations to secure funds for the unstoppable harm caused by climate change
- **The fund , about \$700.6m of pledges, including from UAE, Germany ,and the EU was established ( critic say it is less than 0.2% of the annual need of the developing countries**

# **COP 28 ..(Nov- Dec, 2023)**

- ***Forest*** : The global stocktake “emphasizes” that **halting and reversing deforestation and forest degradation by 2030** will be key to meet the goals of Paris Agreement – the first time such a pledge has garnered formal recognition in a UN climate Change legal text
- ***Biodiversity***: The world’s landmark nature deal agreed in 2022 , the Global Biodiversity Framework , was also referred in a UN climate change text for the first time .
- ***Adaptation*** : ***Failed to send a strong political signal*** ( even the Global Stocktake decision was weak)
- ***Risks to Mountainous countries*** were officially recognized for the First time in COP 28 talks- ***like Hindu Kush Himalaya , HKH region*** in which ***2 billion people depend on region’s waters*** .

# COP 29( 2024)

- Agreement on a New Climate Finance Goal of at **least \$ 330 Billion by 2035** is triple of the amount of Previous target( \$100 billion )
- Developing countries **proposed \$ 1.3 Trillion** , hence expressed disappointment
- **No concrete plan** to limit global temperature rise to 1.5 Degrees C needed for adaptation and damage
- Countries **Failed to reach consensus** on how to or whether to acknowledge the outcome of from last year's climate summit ,which calls for nations to **transition away from fossil fuels**
- More ambition is essential for COP 30 with a deeper dive on key areas

# CLIMATE CHANGE : PROGRESS

- ***THE CURRENT LEVEL OF COMMITMENTS BY THE LEADERS IN THE COUNTRIES IS NOT ADEQUATE TO MEET PARIS AGREEMENT***  
*and*
- ***IT IS LIKELY THAT WARMING WILL EXCEED 1.5 C BY 2100***
- ***We are around 1.1 C degree of warming and the current climate policies are projected to increase global warming by 3.2 by 2100***
- ***We have a lot of work to do as it is everyone 's responsibility , some countries have more than others***

# SUSTAINABILITY CONCEPT

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# Sustainability



# MILESTONES TOOLS

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

**Climate Impact Assessment ( next on pipeline )**

**Environment, Social and Governance ( ESG )**

- ***PRIORITY SECTORS FOR SUSTAINABLE DEVELOPMENT***

# Focus on Asia-Pacific Region

- 1. Energy:** demand is projected to almost double in the Asia and Pacific region by 2030.
- 2. Transport:** Asia's fastest growing source of CO<sub>2</sub>. Vehicle fleet has more than doubled in the past decade.
- 3. Urban/Cities:** 44 million people/year are added to Asian cities.
- 4. Water Security:** Demand is expected to significantly exceed sustainable supply in India and PRC by 2030.
- 5. Biodiversity/Food/Agriculture :** Key species populations declined by 60% in 30 years. Trends likely to continue without mitigation . Ensuring Food security .
- 6. Climate vulnerability:** 7 of the world's 10 countries at greatest vulnerability to climate change and variability.
- 7. Sustainable Consumption and Production/Circular Economy:** Life-style change and industrial design change (for example, 3R, Industrial Ecology).

# Big Challenge for Leadership

- *How to Deliver and Advance low-carbon and climate resilient solutions into real operations/Development*
- *Delivering US 100 B by 2030  
( ADB , 2023)*

# Climate Smart Infrastructure in Asia and the Pacific

- ***Investment in Infrastructure*** must be low carbon and climate resilient
- ***Energy , Transport ,and Urban Infrastructure*** are large and rising sources of GHG emissions :
- Electricity and heat production , transport ,residential buildings, and commercial and public services collectively accounted in 2020 for nearly 70% of energy-related emission . **Transformational Change to decarbonize at scale is needed.**
- **Hence ,energy sector has a critical role to play in decarbonizing the region**
- **Urgent action is required to turn around transport in Asia , which is the fastest –growing source of carbon emissions globally and the Pacific Region**

# Biodiversity ,Agriculture and Nature- based climate solutions

- . ***Conserving Biodiversity*** plays a critical role in the fight against climate change

Climate objectives are served by mainstreaming conservation and the sustainable use of biodiversity and growing a nature –positive portfolio

- . **Agriculture** urgently needs transformation to meet global climate objectives while providing food security. ***Future agriculture investment should be climate –smart , proactively harnessing opportunities for high productivity***

- . Nature provides viable solutions for climate resilience through ***adaptation and mitigation*** ,in particular **carbon storage**.

- . **Nature based solutions ( nbs) opportunities**

# ENERGY TRANSITION IS A MUST FOR ASIA

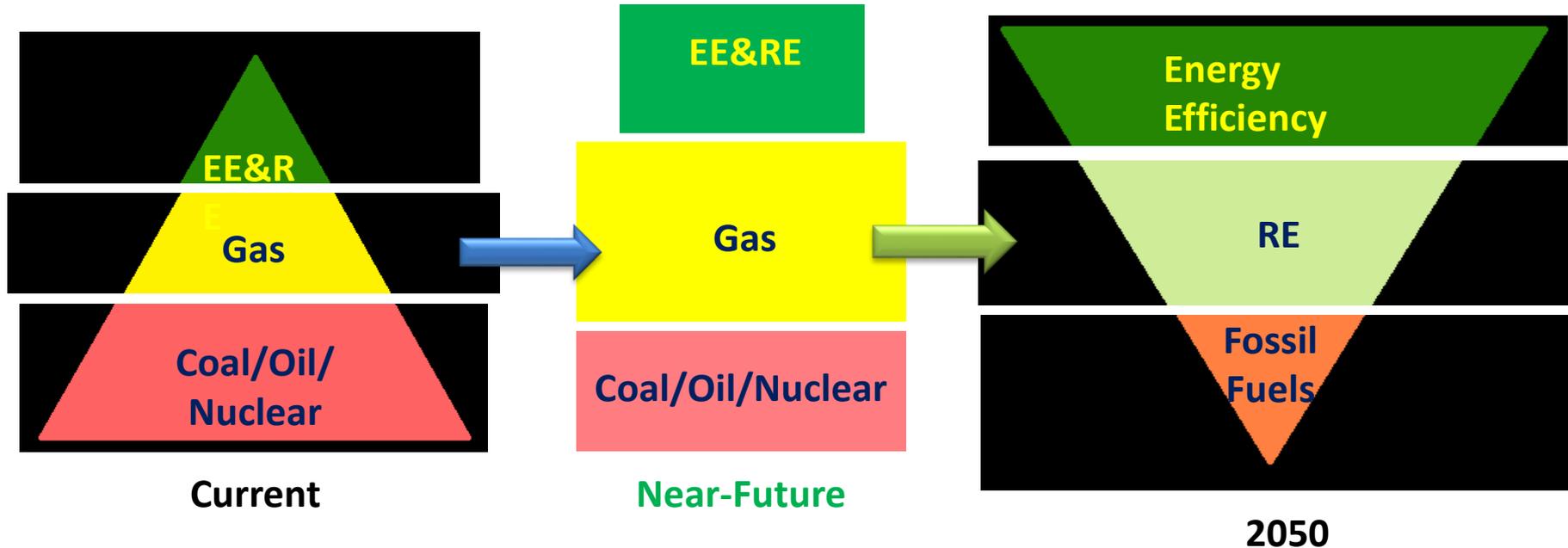
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It is clear that **Asian Region** needs to transition away from coal -based on energy to **clean energy** (renewables) and countries are already moving in that direction.



# Market Transformation

## Unlock Asia's Clean Energy Future



## Three Game Changers for Energy

- ✓ **New Energy sources** including fuel cells; small ,modular nuclear fusion reactors, and even nuclear fusion ( within 2 decades)
- ✓ **Mobility** :By 2030 Evs could account 27 to 37 % of new vehicle sales and Demand for liquid fuel to drop 8 to 25 %
- ✓ **The Shale oil and gas** in US will challenge the ability of OPEC

## 2. TRANSPORT

( transport produces 23 % of global energy-related CO2 emissions and a major source of local outdoor air pollution )

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Need to transform the transport sector to decarbonize the 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

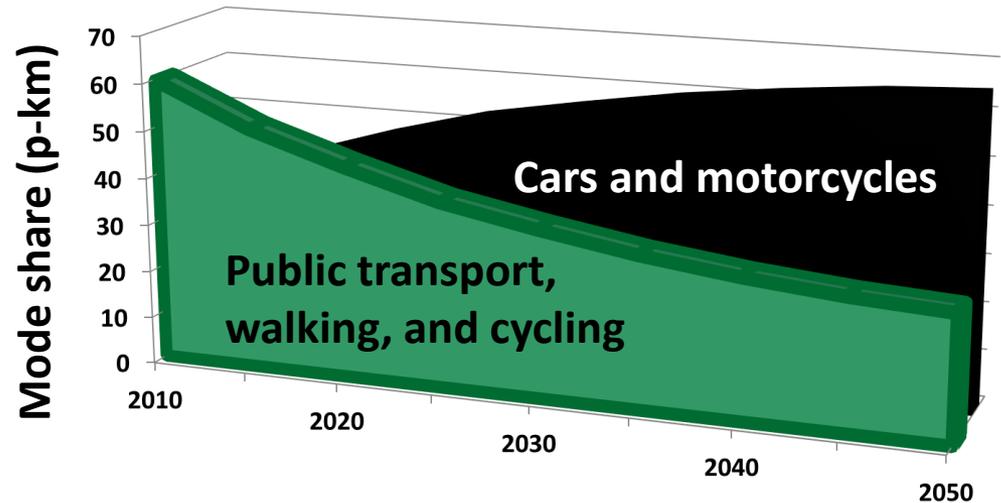
### Electric Vehicles

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- 1 Share of EVs in total sales has tripled in three years from around 4% in 2020 to 14% in 2022 and will continue to grow.
- 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

## 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

- ✓ Worldwide stock surpassed 2 million units in 2016.
- ✓ China, US and Europe account for 90% of all EVs sold around the world.
- ✓ 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.**



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

# 4. WATER SECURITY AND WATER RESILIENT

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## Challenges of Water Security and Water Resilience



### **Water Security :**

RUWS - are we Water Secured?



### **Water Resilient /RUWR :**

Are you Water Resilient ?

# 4. WATER SECURITY

Water Security needs to address five (5) dimensions :



## 4. WATER RESILIENT AND CLIMATE ADAPTATION

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- ✓ **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

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### 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

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### “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.***

# **CBD COP 16 2024**

## **Cali, Colombia**

- 119 countries submitted National Biodiversity targets
- 44 Countries submitted National Biodiversity Strategy and Action Plans ( NBSAPs)
- A positive Biodiversity Conference

## 6. CLIMATE VULNERABILITY, HAZARDS AND RISK

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- ✓ 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 6<sup>th</sup> 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. Economics 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.
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- Need to address climate vulnerability
    - Mitigation
    - Adaptation
  - Need to strengthen disaster risk management
  - Climate Financing

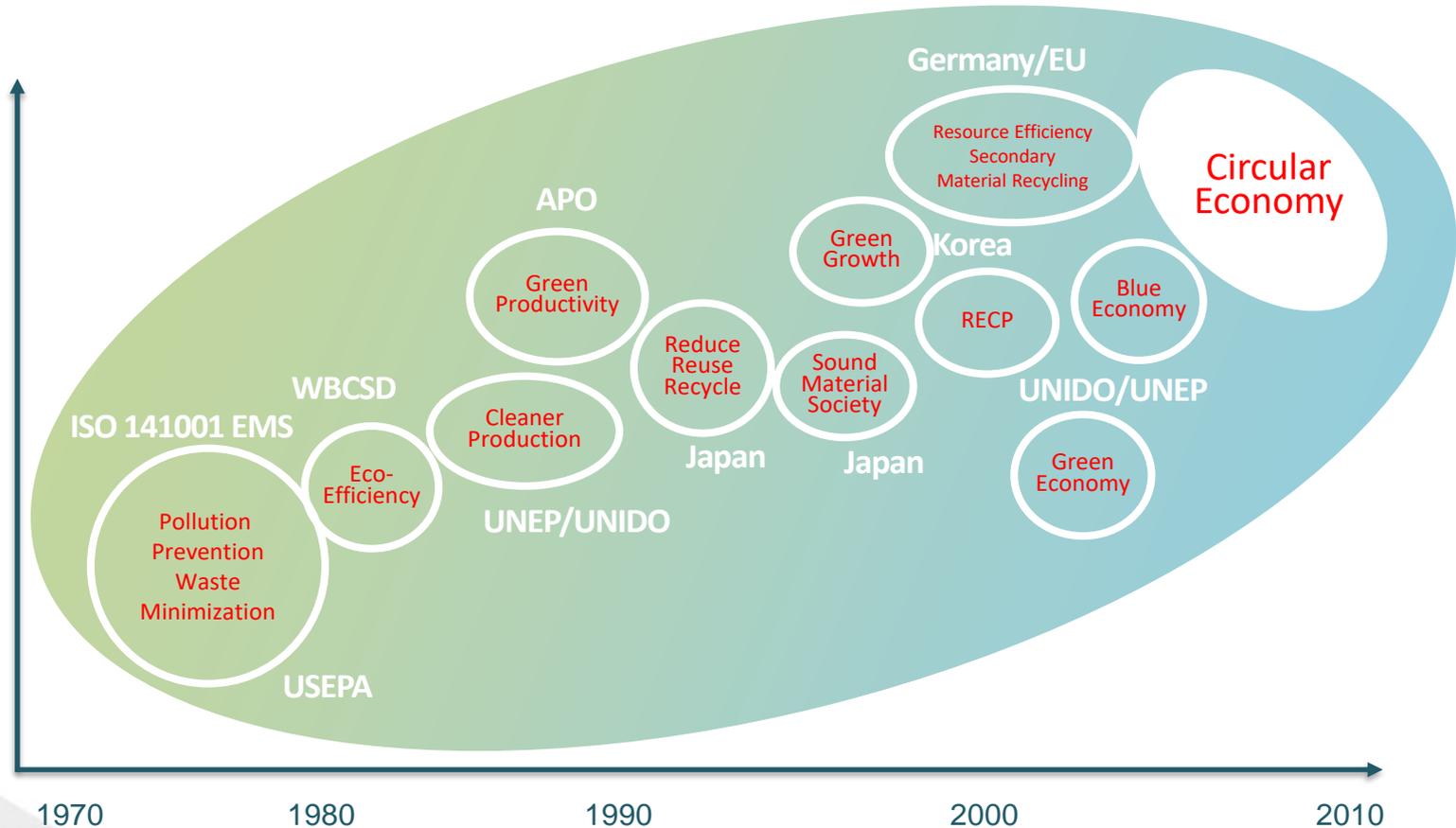
## **7. SUSTAINABLE CONSUMPTION AND PRODUCTION AND LIFESTYLE CHANGE:**

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- ✓ **LIFE-STYLE CHANGE**
- ✓ **SCP( Sustainable Consumption and  
Production)**

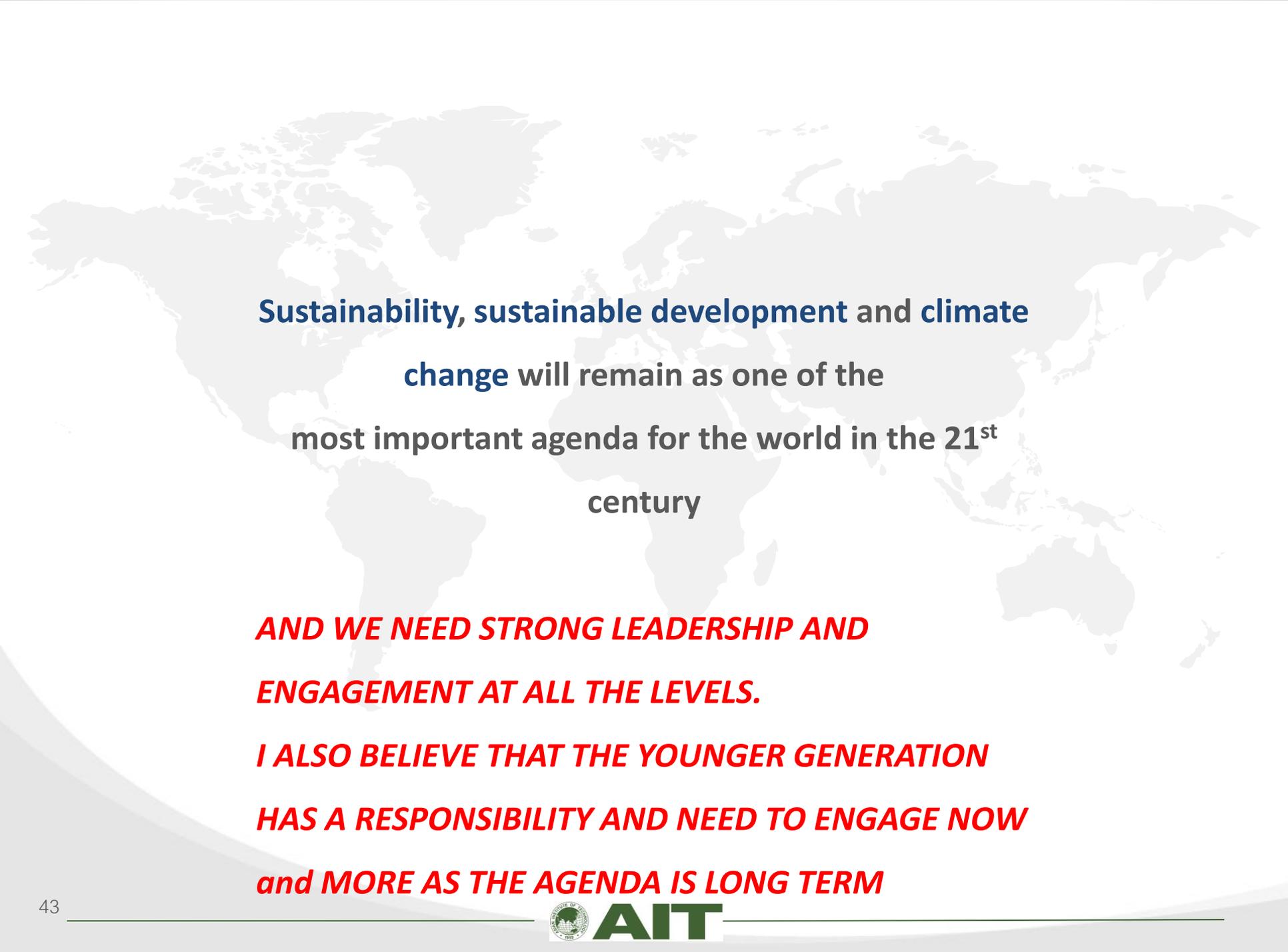
# 8. CIRCULAR ECONOMY

## 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 21<sup>st</sup> century**

***AND WE NEED STRONG LEADERSHIP AND ENGAGEMENT AT ALL THE LEVELS.***

***I ALSO BELIEVE THAT THE YOUNGER GENERATION HAS A RESPONSIBILITY AND NEED TO ENGAGE NOW and MORE AS THE AGENDA IS LONG TERM***

# Thank you

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