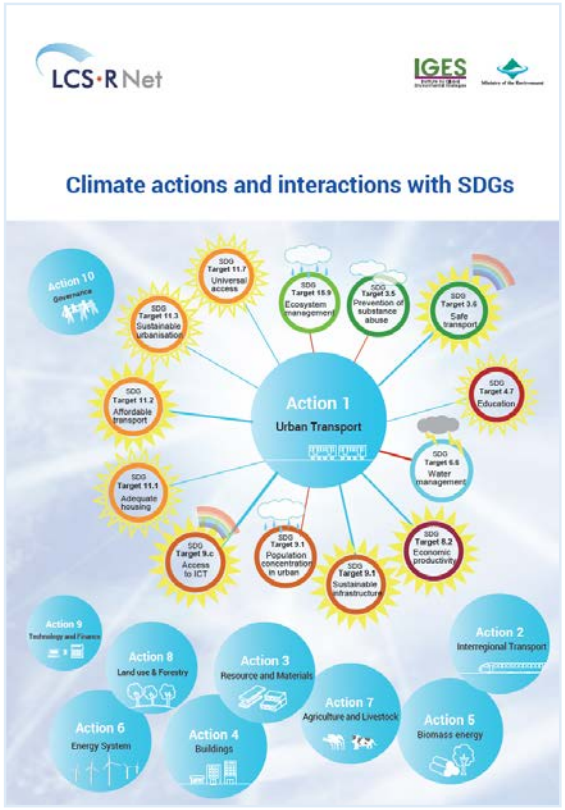
Low Carbon Asia Society Research Network
6th Annual Meeting

Climate actions and interactions with SDGs

Mikiko Kainuma

Institute for Global Environmental Strategies (IGES)/

National Institute for Environmental Studies (NIES)

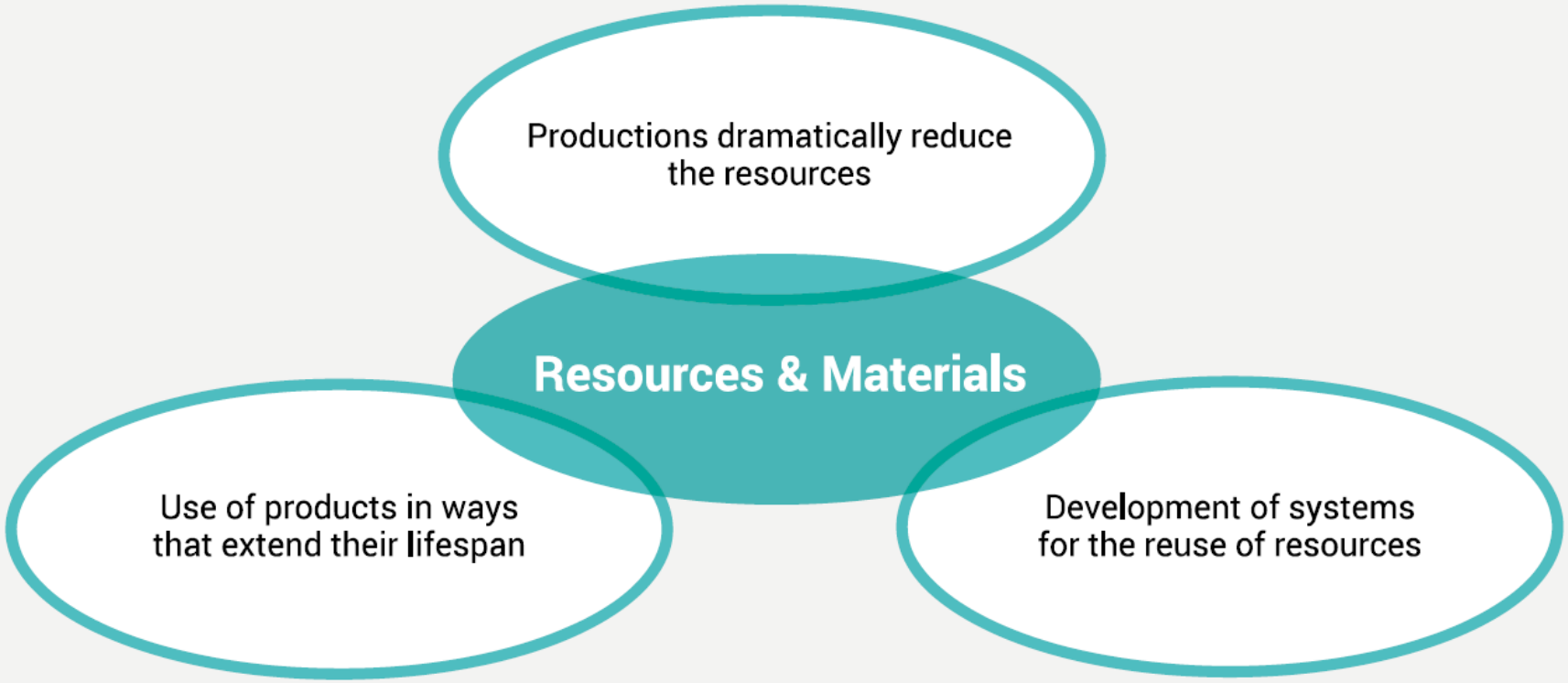


1-3 November 2017

Bangkok

Climate actions and interactions with SDGs

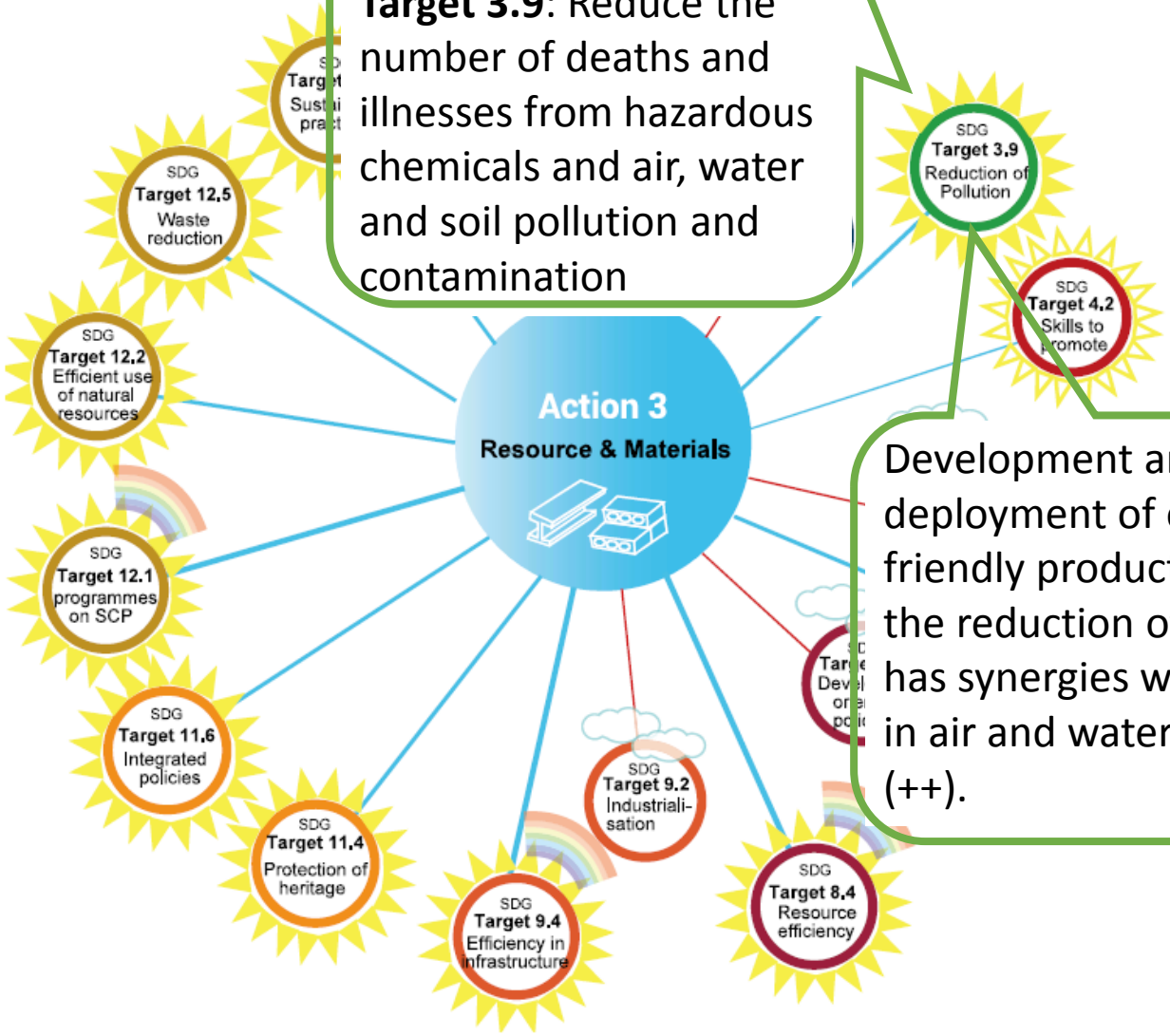
Key actions for resources & materials



Action 3

Key interactions between actions of resources & materials and other SDG targets

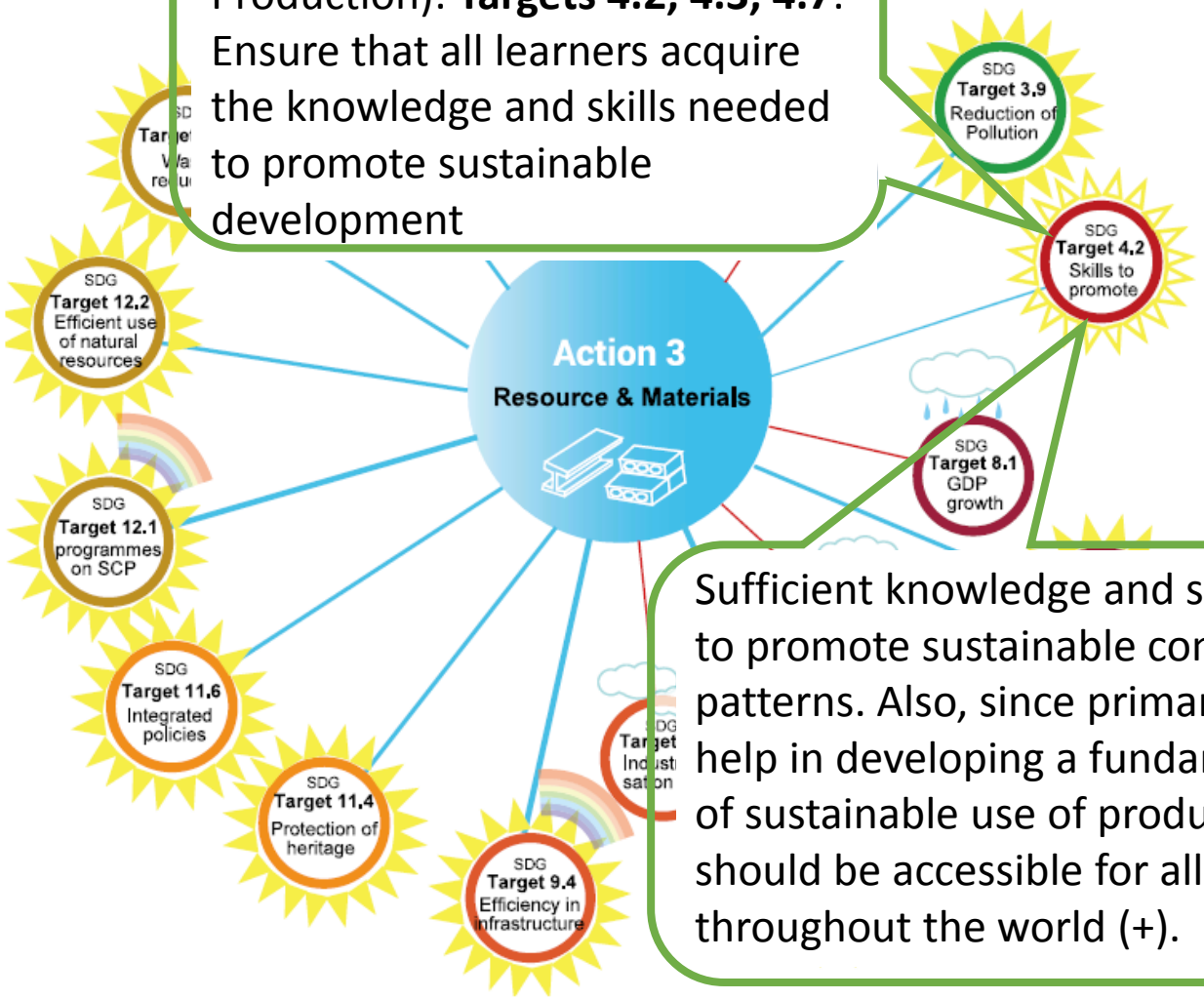
Reduction of pollution:
Target 3.9: Reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination



Development and deployment of environment friendly products as well as the reduction of production has synergies with decrease in air and water pollution. (++).

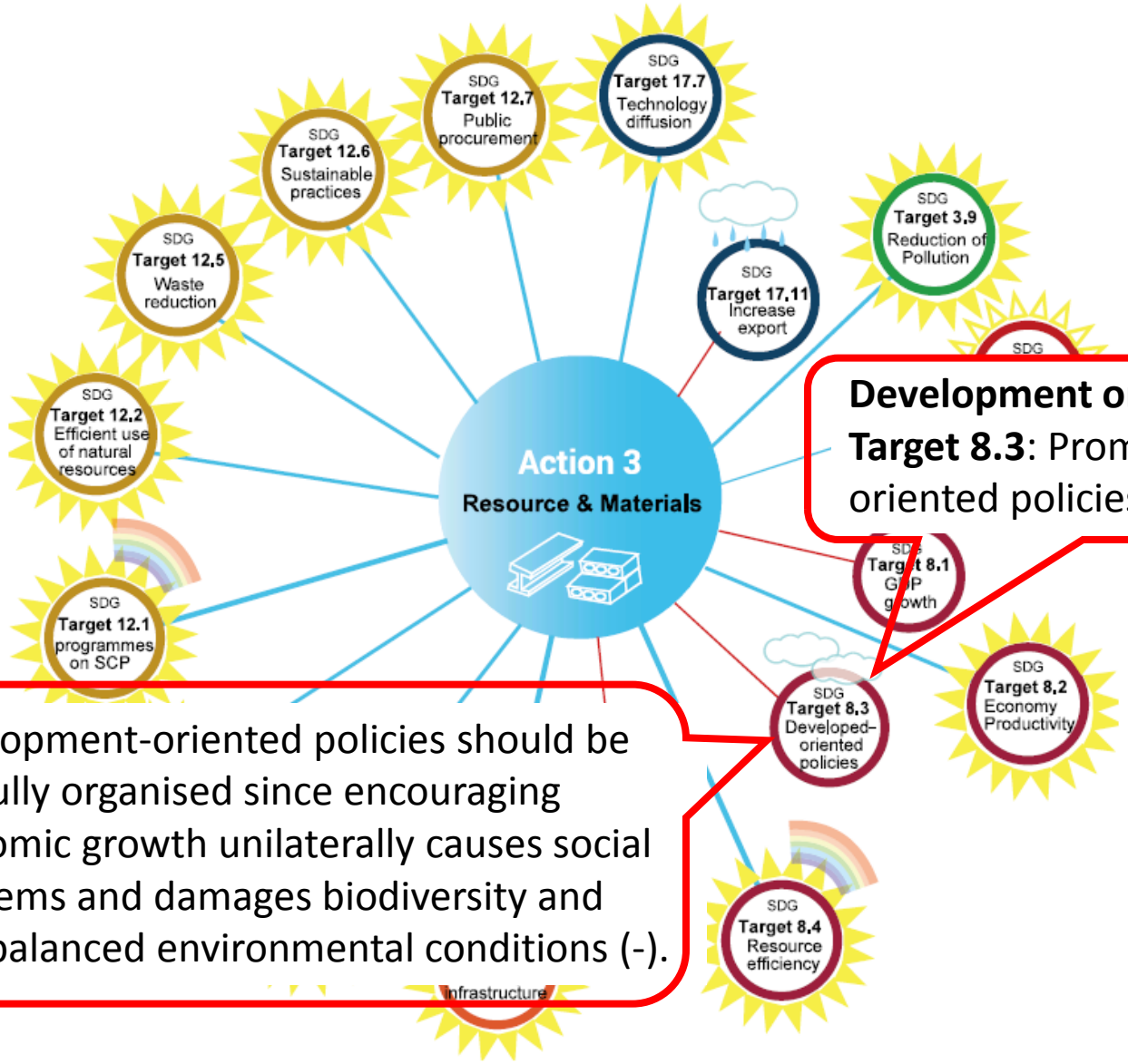
Key interactions between actions of resources & materials and other SDG targets

Skills to promote SCP (Sustainable Consumption & Production): **Targets 4.2, 4.3, 4.7**: Ensure that all learners acquire the knowledge and skills needed to promote sustainable development



Sufficient knowledge and skills are essential to promote sustainable consumption patterns. Also, since primary education can help in developing a fundamental mindset of sustainable use of products, education should be accessible for all children equally throughout the world (+).

Key interactions between actions of resources & materials and other SDG targets

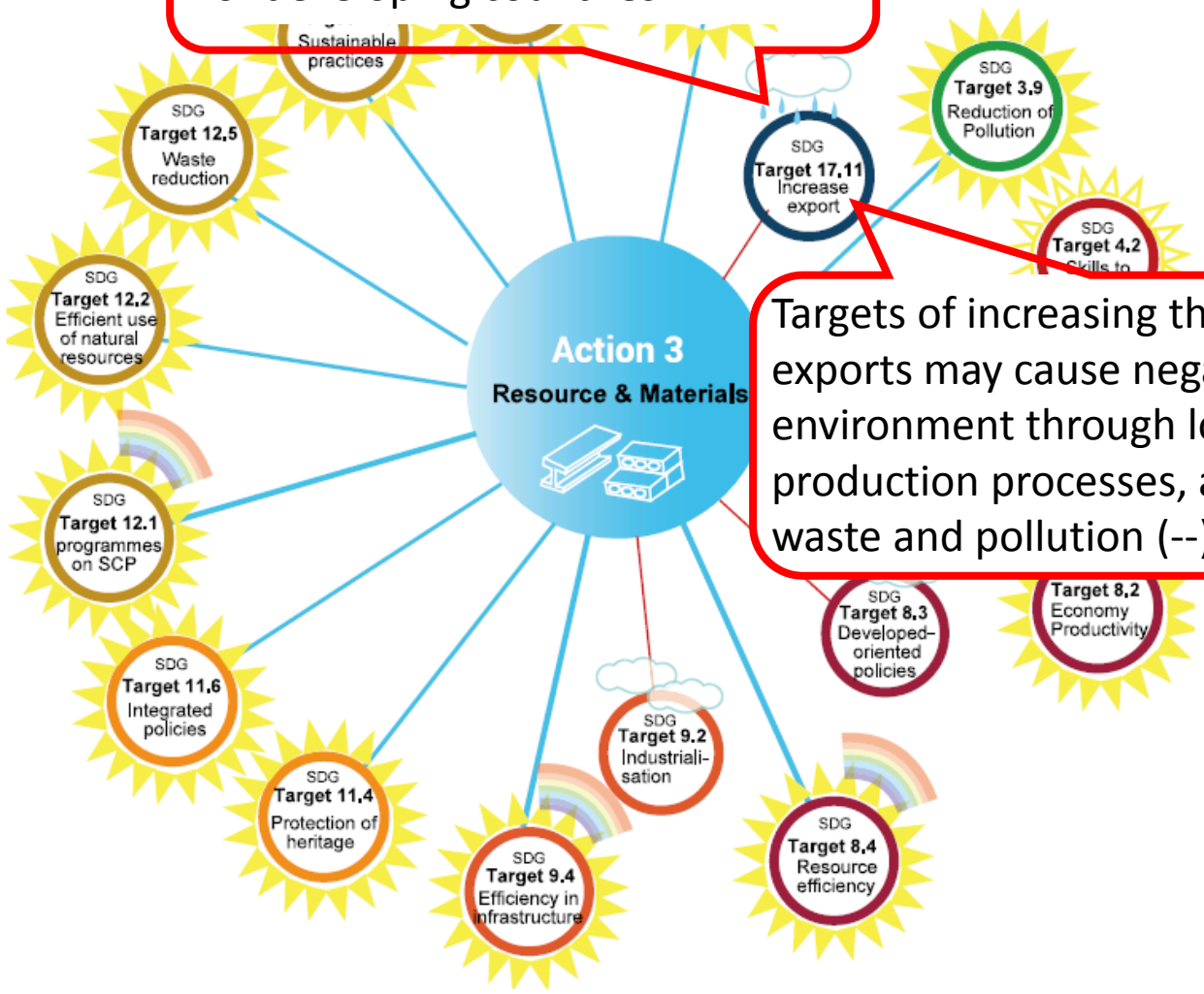


Development oriented policies: **Target 8.3**: Promote development oriented policies

Development-oriented policies should be carefully organised since encouraging economic growth unilaterally causes social problems and damages biodiversity and well-balanced environmental conditions (-).

Key interactions between actions of resources & materials and other SDG targets

Increase exports: Target 17.11: Significantly increase the exports of developing countries



Targets of increasing the share of global exports may cause negative impact on the environment through logistics and production processes, and also increase waste and pollution (--).

Role of stakeholders for sustainable use of resources & materials

Role of Government

Design low-carbon cities and national land based on a medium- to long-term perspective, and construct a long-lasting infrastructure. Develop systems for recycling and reusing various articles, and support studies on the effective use of resources.

Role of Private Sector

Develop and install technological systems that reduce product weight, replace carbon-intensive materials, extend product life, and achieve recycling and reuse to provide the same services using materials that are less resource intensive and generate a smaller environmental load.

Role of Citizens

Create a lifestyle that is less material intensive and yet offers a sense of richness. Select recyclable and reusable products that are long-lasting and less resource intensive, while changing residences at different stages of life.

International Cooperation

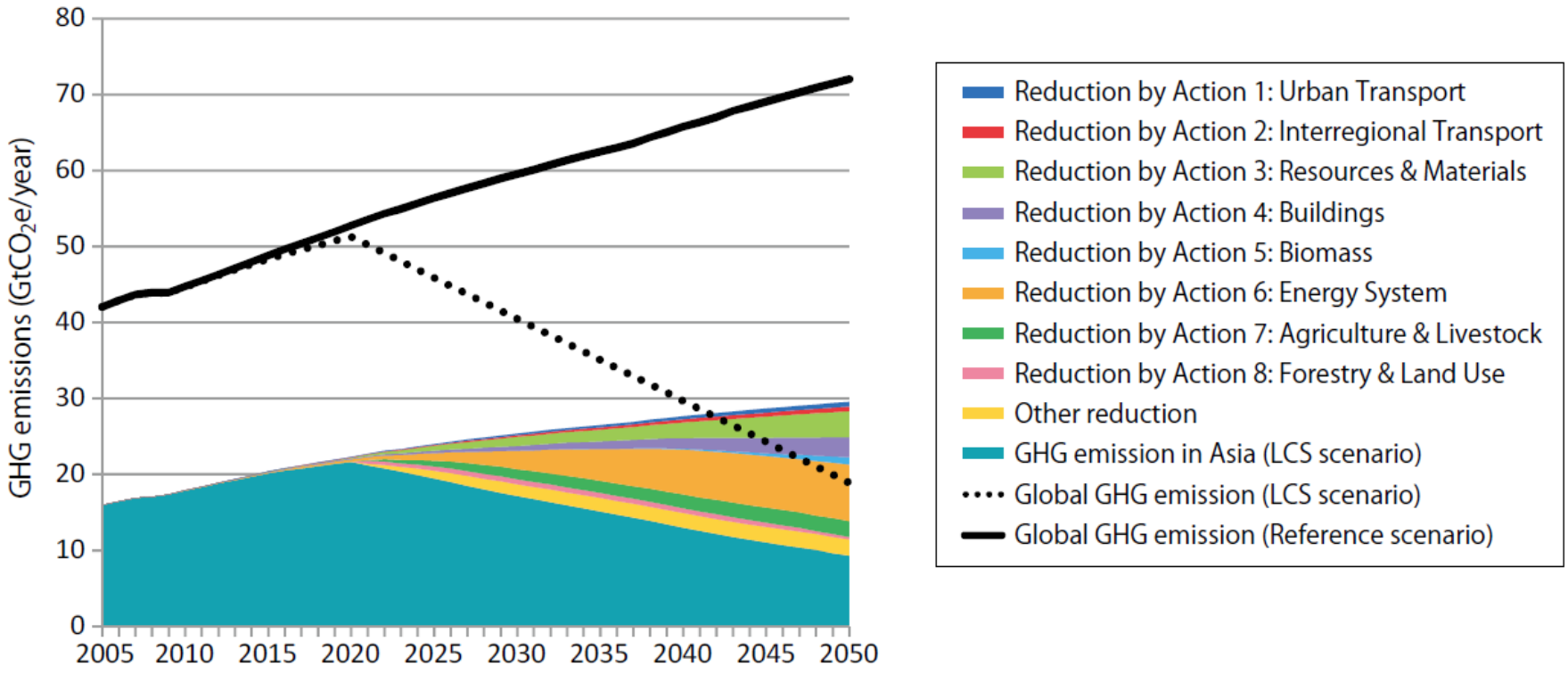
Foster international cooperation in research on technical development related to the effective use of resources as well as promotion and dissemination of new technologies. Technically improve the environmental labeling system for internationally traded products.

Source: Low carbon Asia project, 2012

Request to fill the expected level of achievement (%) of the climate actions for managing resources and materials at the year of 2030, 2040 and 2050

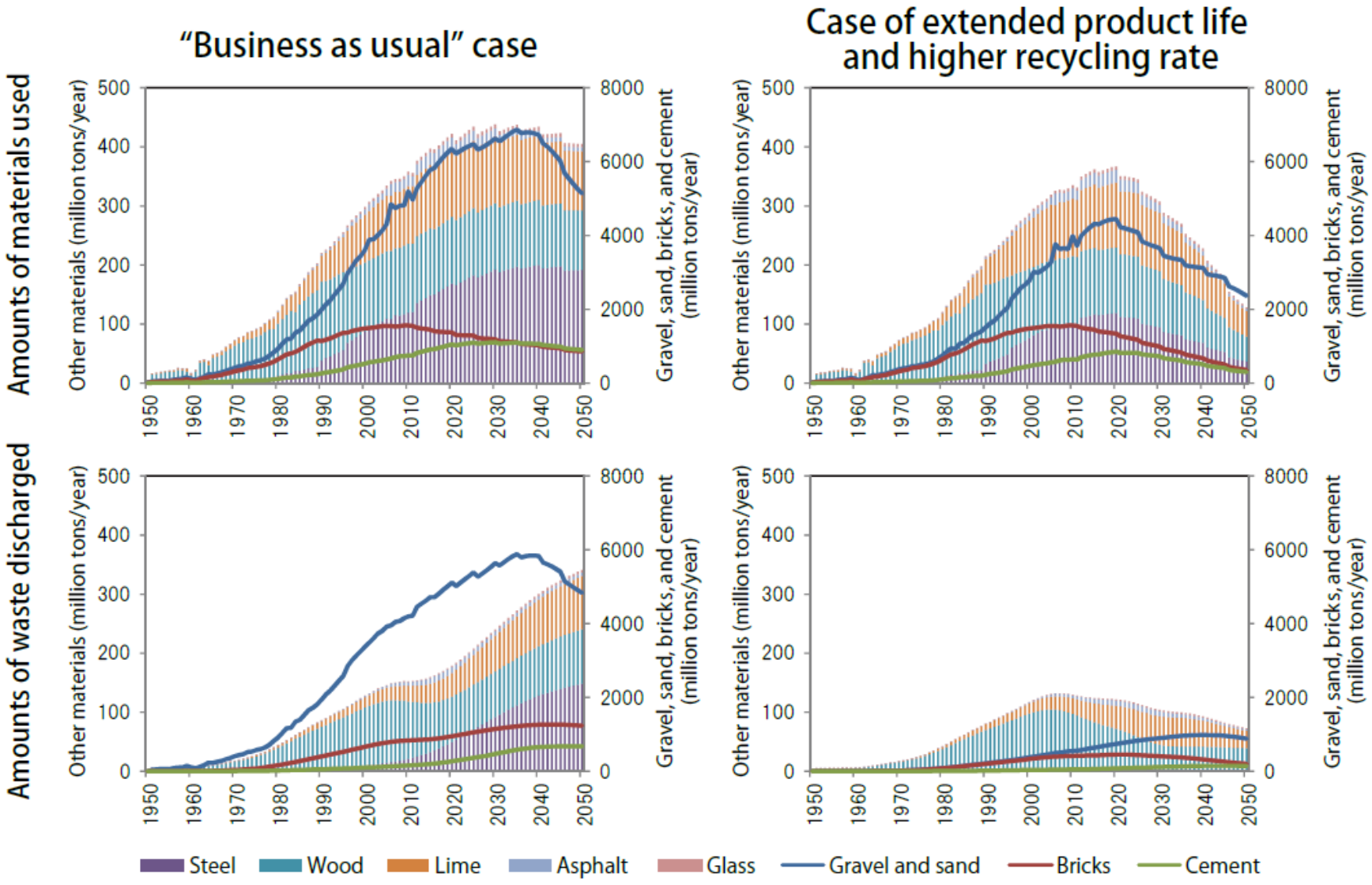
Stakeholder	Action	Level of achievement		
		2030	2040	2050
		%	%	%
Government	Design low carbon cities and national land that use less materials			
	Implement low carbon urban and national design that use less materials			
	Support research on technological development related to the effective use of resources			
	Establish and operate organisation to evaluate effectiveness of public enterprises			
	Construct long-lasting infrastructure and provide support for such construction			
	Develop and introduce recycling and reuse systems for various products			
Private Sector	Develop and deploy technologies for weight reduction and carbon intensive materials replacement			
	Develop and deploy life-extension technologies and maintenance systems			

	Develop and deploy technological systems for recycling and reuse				
Citizens	Create lifestyles that are less material intensive				
	Choose houses/materials that have long life spans				
	Select recyclable and reusable products that are long-lasting and less resource intensive				
International	Cooperate in research on technological development related to effective use of resources				
	Promote and disseminate new technologies internationally				
	Develop environmental load intensity database for new technologies				
	Introduce international environmental labeling system for traded products				



Global and Asian Emissions in the LCS scenario and the Reference scenario

Source: Low carbon Asia project, 2013



Estimated amounts of materials used and waste discharged up to 2050 in China

Source: Low carbon Asia project, 2012

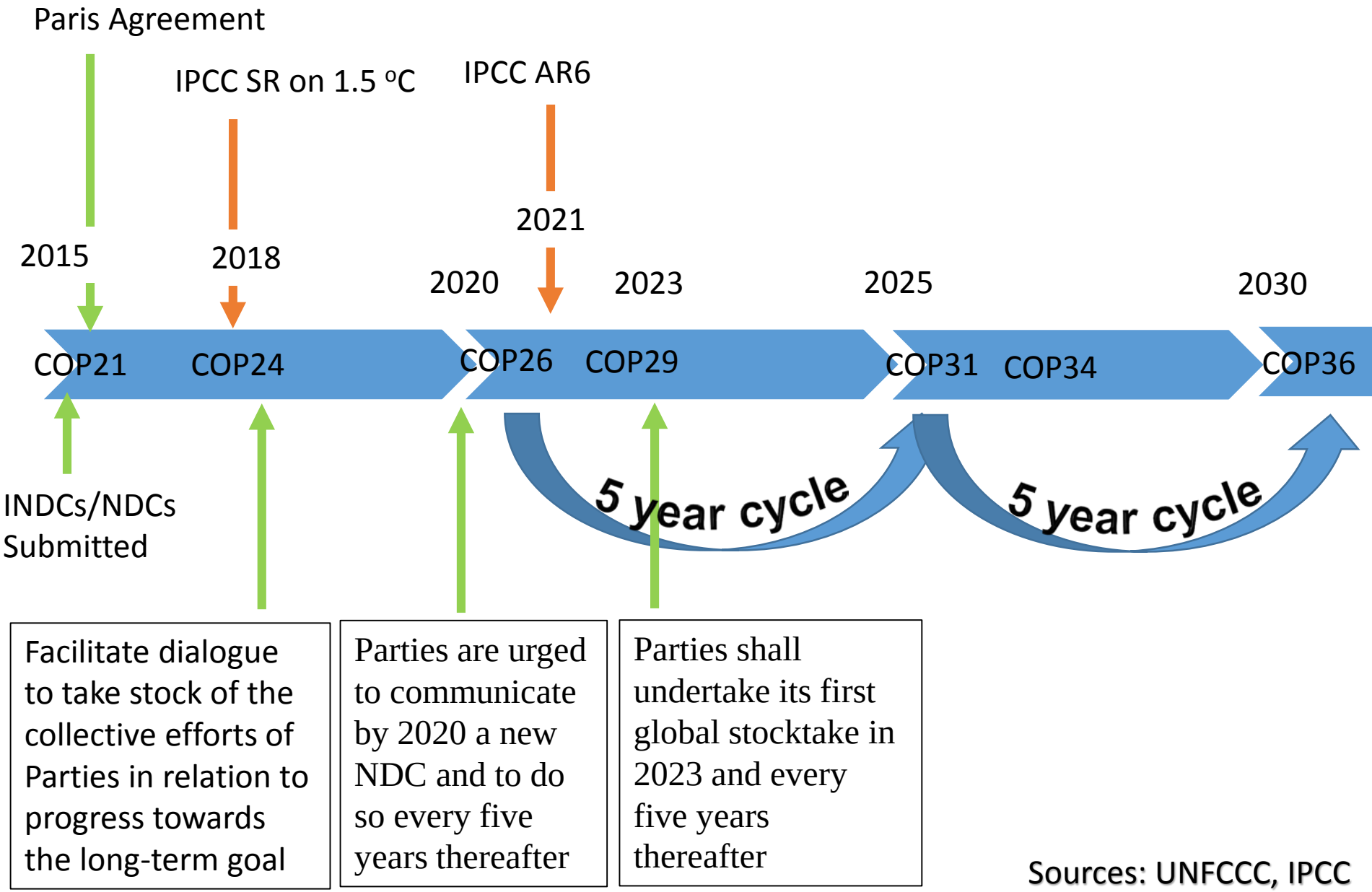
NDCs and interactions with other policies

	India	China	Indonesia
Policy linkages	- Air Pollution - Job creation - Food security	- Air pollution - Energy access - Increase export of clean technologies	- Sustainable forest management - Food security - Energy security
Challenges & opportunities	- Financing - Technology develop & deployment (e.g. CCS, nuclear power) - Low carbon megacity development	- Increase share of renewables - Energy efficiency improvement	- Infrastructure for gas distribution lines etc. - High investment costs - Ambitious emission reduction target for AFOLU - requires high investment for improvement of crop productivity and irrigation

NDCs and interactions with other policies (Cont'd)

	Viet Nam	Thailand	Cambodia	Japan
Policy linkages	- Energy security - Air pollution - Avoid impacts of climate change	- Avoid impacts of climate change - Job creation - Food security	- Energy access - Forest management - Food security	- Energy security - Food security
Challenges & opportunities	- Increase share of renewables - Real wages of workers - Investment costs - Food security	- High costs of patent acquisition - Lack of local expertise - Foreign countries' investment - Consensus among different stakeholders	- Sustainable development - Low carbon GHG development strategies - Investment costs	- Safety concerns of CCS & nuclear - Integration of VRE into grid - Lifestyle change - Industrial structure change

How can the level of ambition of NDCs be increased?



Sources: UNFCCC, IPCC

Side Event at COP23 Japan Pavilion

Linkage between NDC and SDGs – synergies and trade-offs

Organised by the Institute for Global Environmental Strategies (IGES)

Date: 9 November 2017, 15:00-16:30

Venue: COP23 Japan Pavilion (@ Bone Zone)

JAPAN PAVILION

Aim of the side-event:

To promote measures against global warming based on the Paris Agreement, and to ensure transition to decarbonised societies, it is important to link long-term targets/strategies with short- or mid-term concrete policy targets. As of August 2017, 155 "Nationally Determined Contributions (NDCs)" were submitted to UNFCCC (from 182 countries). In 2015, the 2030 Agenda for 17 Sustainable Development Goals (SDGs) was adopted. The global goal to combat climate change is one of the most crucial and urgent SDGs. This is because current actions will have a profound and everlasting influence on the future of the environment as well as the human race. Moreover, many actions aimed at tackling climate change will also help achieve other SDGs – such as ensuring access to affordable clean energy and building resilient infrastructure.

This side-event aims to present:

1) sectoral and concrete measures to tackle climate change under NDCs in each country;

2) prospects to achieve such measures; and

3) synergies and trade-offs between certain measures and SDGs. It also aims to share information contributing to attaining and improving NDCs in the future, and will call for further discussions.

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IGES Institute for Global Environmental Strategies

Draft program

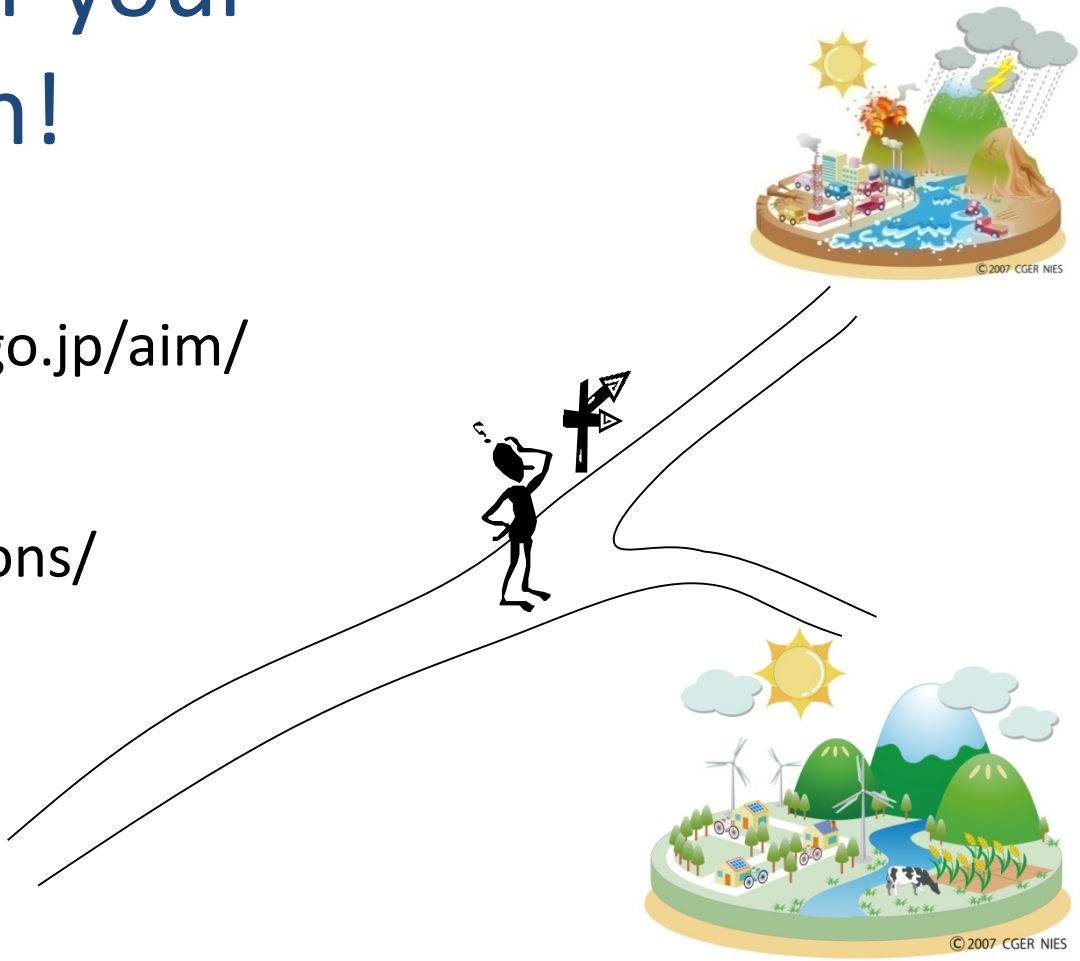
Keynote (20 mins.)	Introduction on climate actions and interactions with SDGs **Mikiko Kainuma**, Senior Research Advisor, IGES
Presentation 1 (15 mins.)	Clean Growth and Innovation in a Changing World **Stefan Lechtenböhmer**, Director, Future Energy and Mobility Structures, Wuppertal Institute for Climate, Environment and Energy
Presentation 2 (15 mins.)	Implementing Paris: How to Increase the Ambition of NDCs **Rizaldi Boer**, Executive Director, Center for Climate Risk and Opportunity Management, Bogor Agricultural University, Indonesia
Panel discussion (40 mins) Three short presentations by Dr. Yang, Dr. Briand and Dr. Zusman followed by discussions	Panel discussion: How can we promote climate actions and interactions with SDGs? **Yang Xiu**, Associate Professor, Department of Policy and Regulation, National Center for Climate Change Strategy and International Cooperation (NCSC) **Yann Briand**, Coordinator of the Working Group Transport, Deep Decarbonization Pathways Project (DDPP), IDDRI **Eric Zusman**, Research Leader, Sustainable Governance Centre, IGES **Rizaldi Boer**, Executive Director, Center for Climate Risk and Opportunity Management, Bogor Agricultural University, Indonesia **Stefan Lechtenböhmer**, Director, Future Energy and Mobility Structures, Wuppertal Institute for Climate, Environment and Energy

IGES Institute for Global Environmental Strategies

Thank you for your attention!

http://www-iam.nies.go.jp/aim/

http://lcs-rnet.org/pdf/publications/climate_actions.pdf

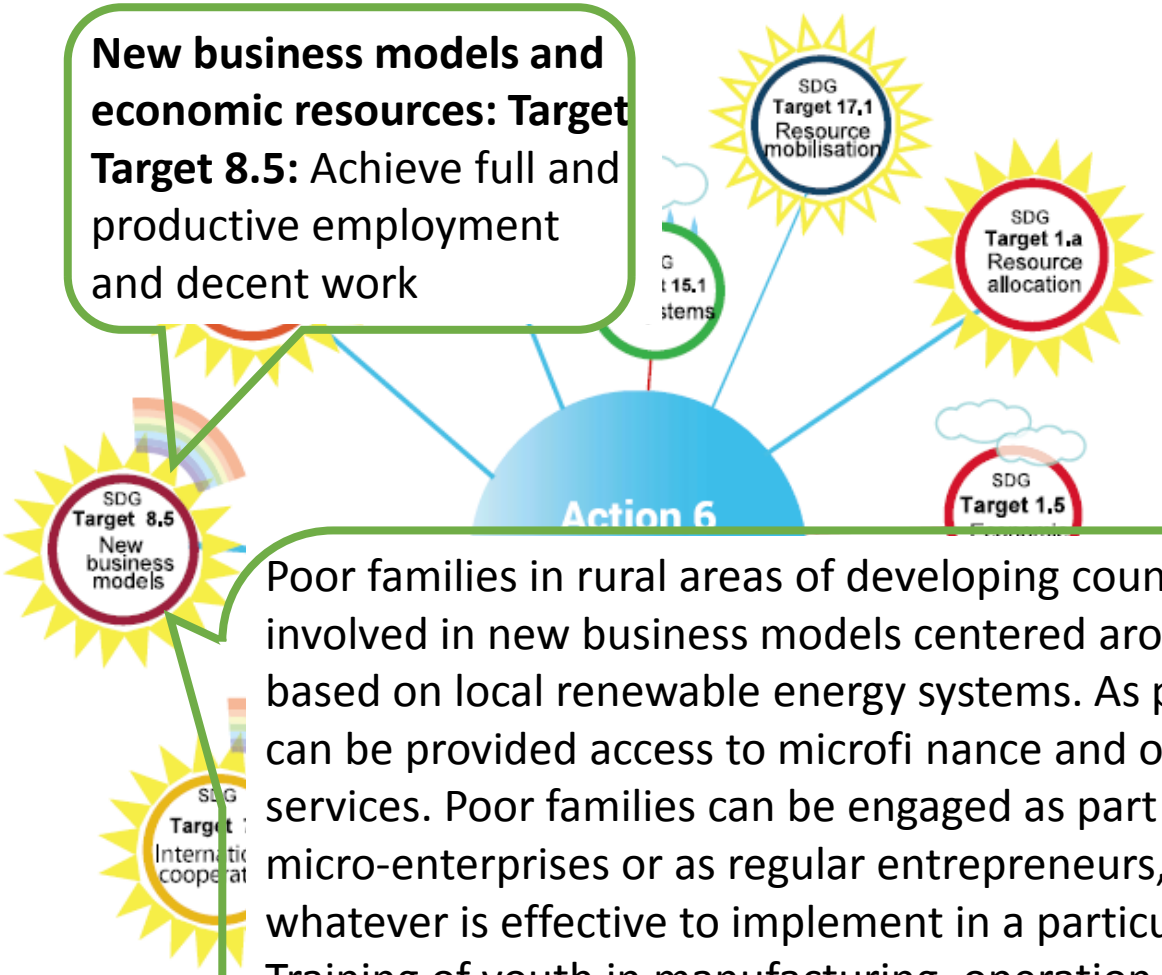


You must be the change you wish to see in the world.

- Mahatma Gandhi

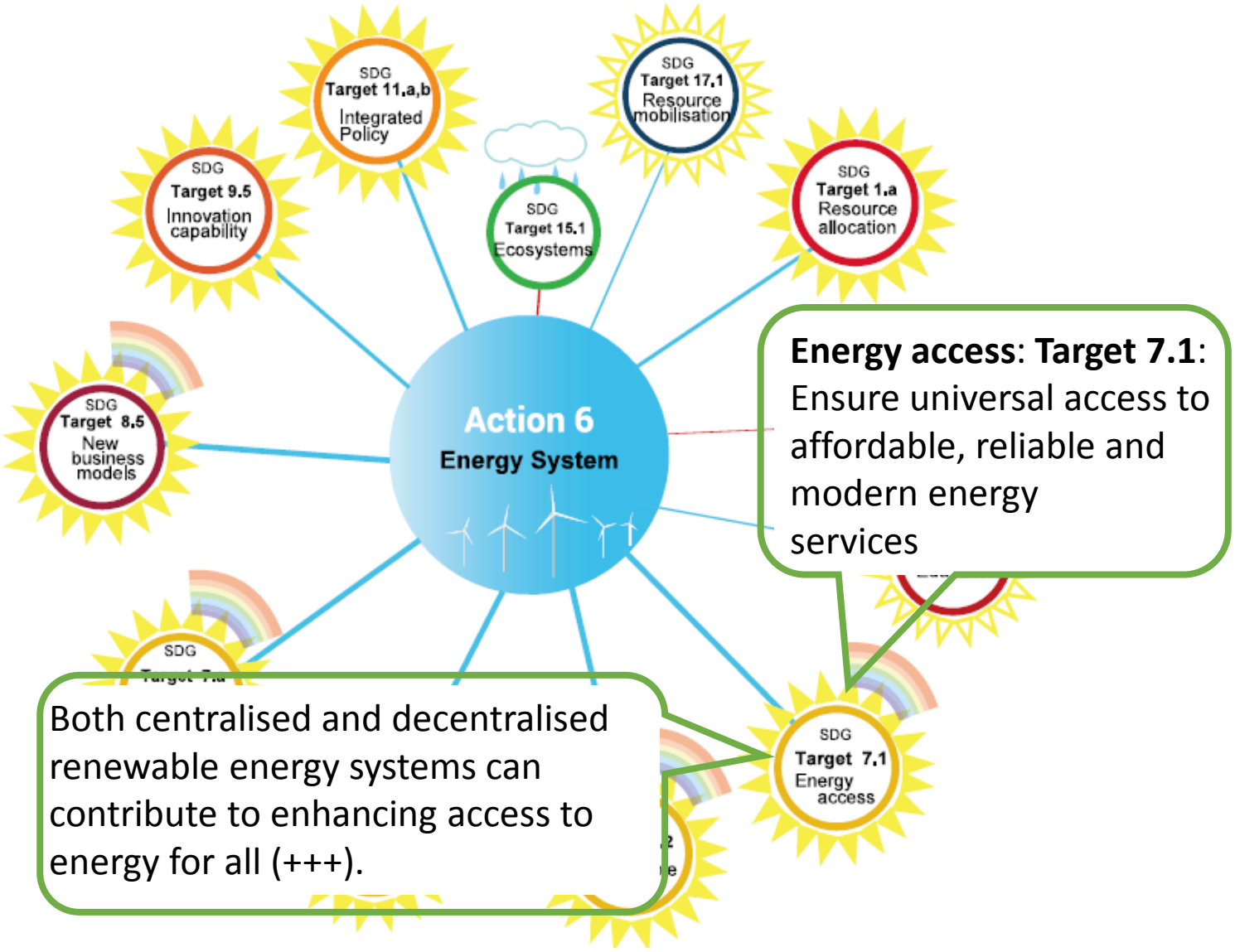
Key interactions between actions of resources & materials and other SDG targets

New business models and economic resources: Target Target 8.5: Achieve full and productive employment and decent work

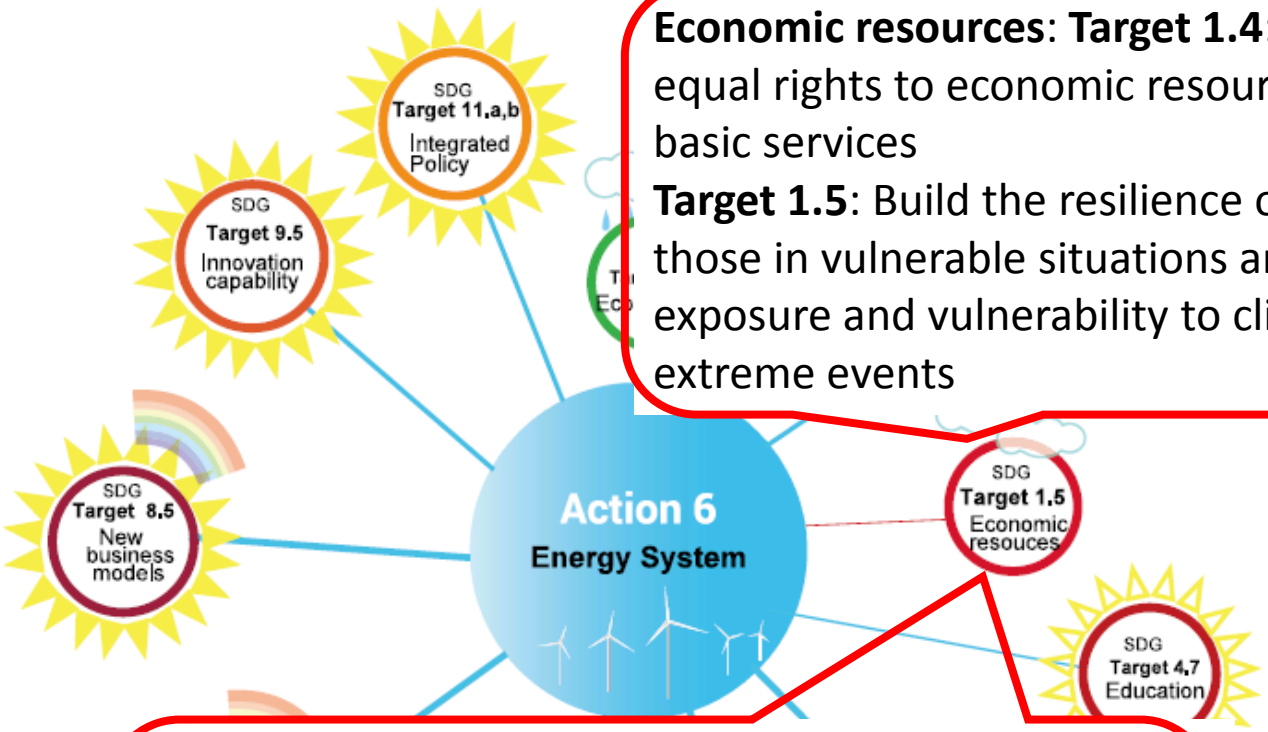


Poor families in rural areas of developing countries can be involved in new business models centered around services based on local renewable energy systems. As part of this they can be provided access to microfi nance and other basic services. Poor families can be engaged as part of cooperatives, micro-enterprises or as regular entrepreneurs, depending on whatever is effective to implement in a particular country. Training of youth in manufacturing, operation, maintenance and other service skills related to modern and sustainable energy systems can be included as part of skills development, employment, entrepreneurship programmes (+++).

Key interactions between actions of resources & materials and other SDG targets



Key interactions between actions of resources & materials and other SDG targets



Economic resources: **Target 1.4**: Ensure all have equal rights to economic resources and access to basic services

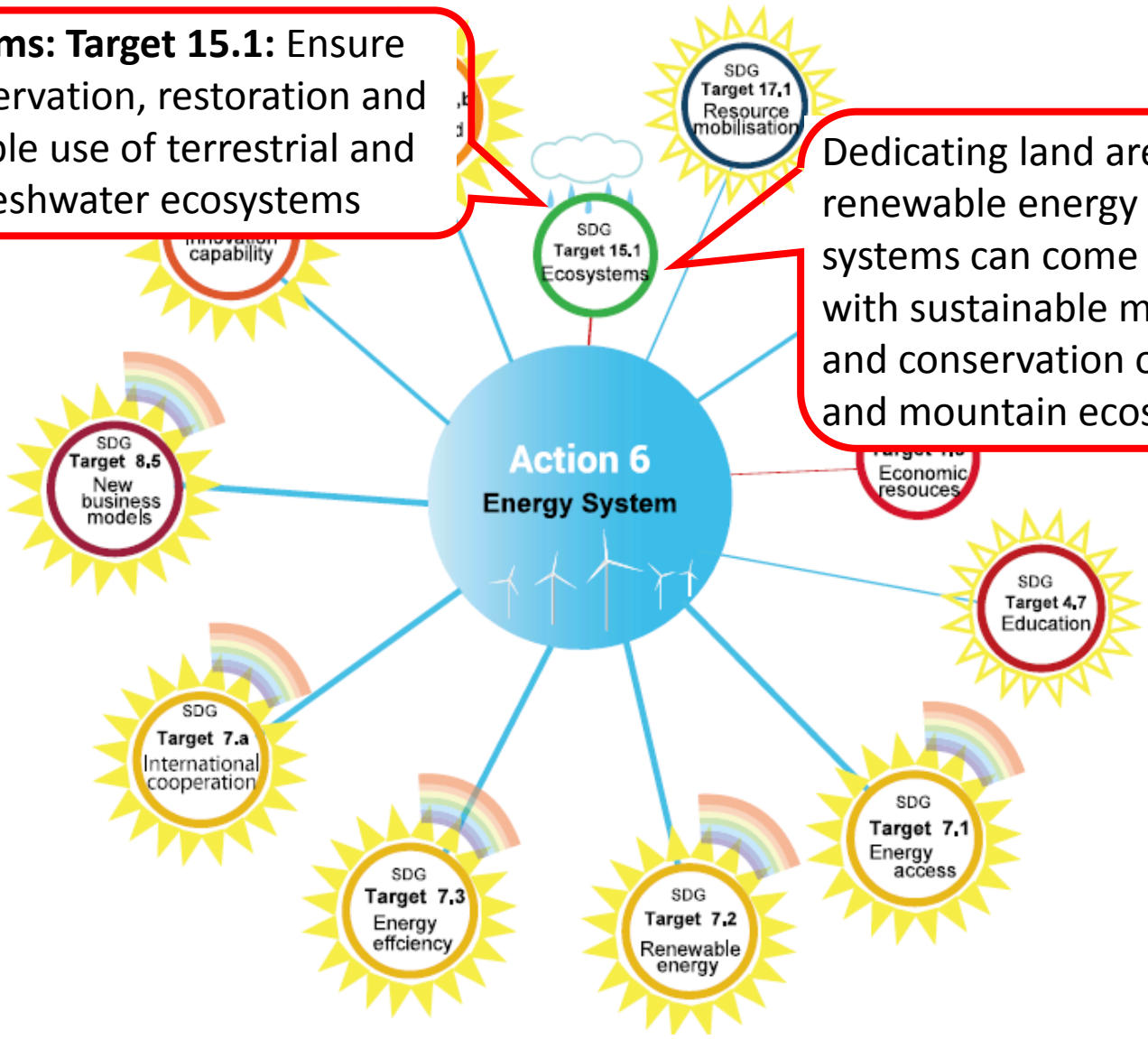
Target 1.5: Build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate related extreme events

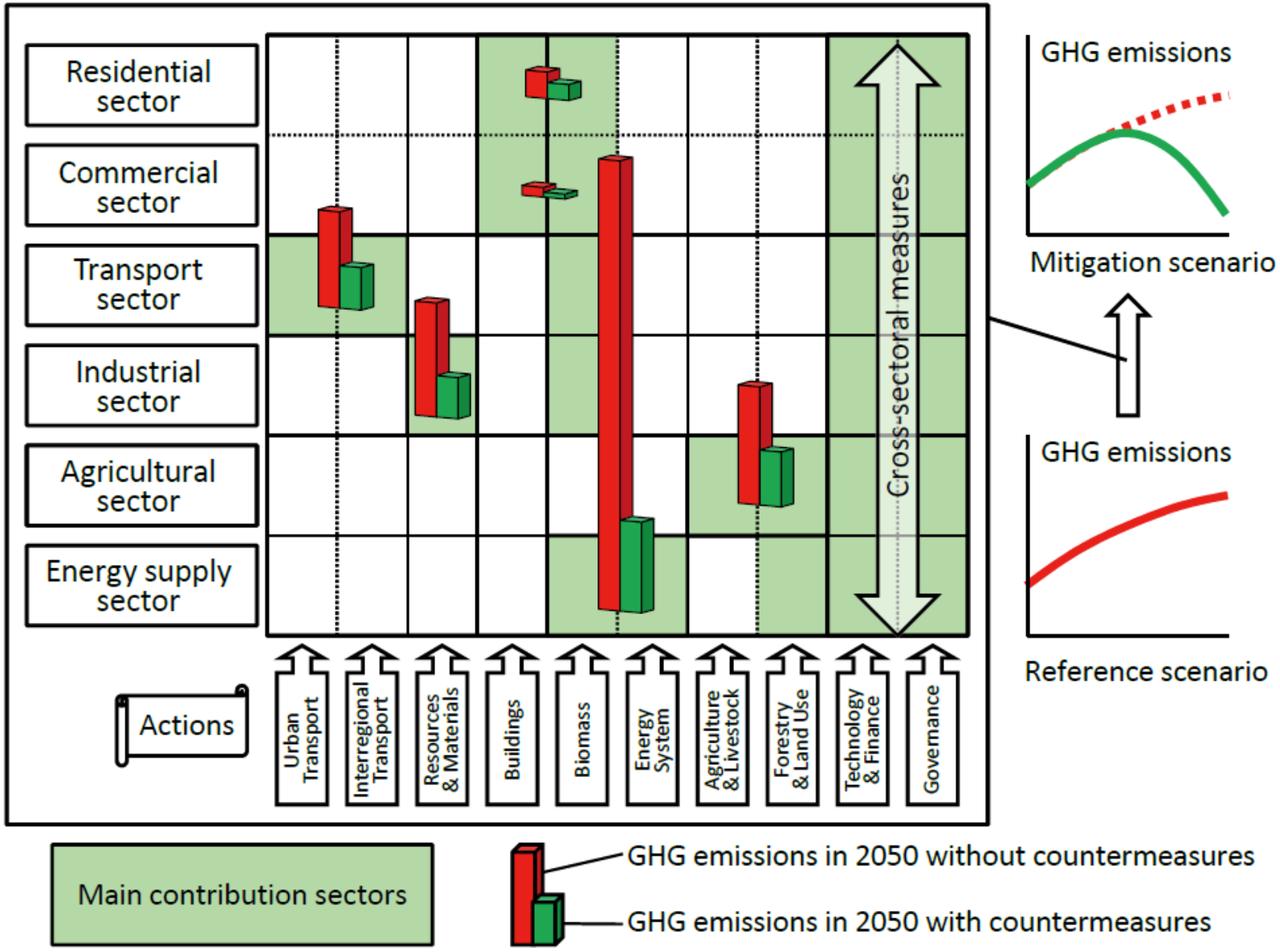
If the rural poor (landless and small farmers) are not involved as participants in the new economic activities based on local renewable energy systems, then existing dominant communities who already own large land areas and other resources may exert control over them, meaning existing economic inequality and poverty conditions remain unchanged (-)

Key interactions between actions of resources & materials and other SDG targets

Ecosystems: Target 15.1: Ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems

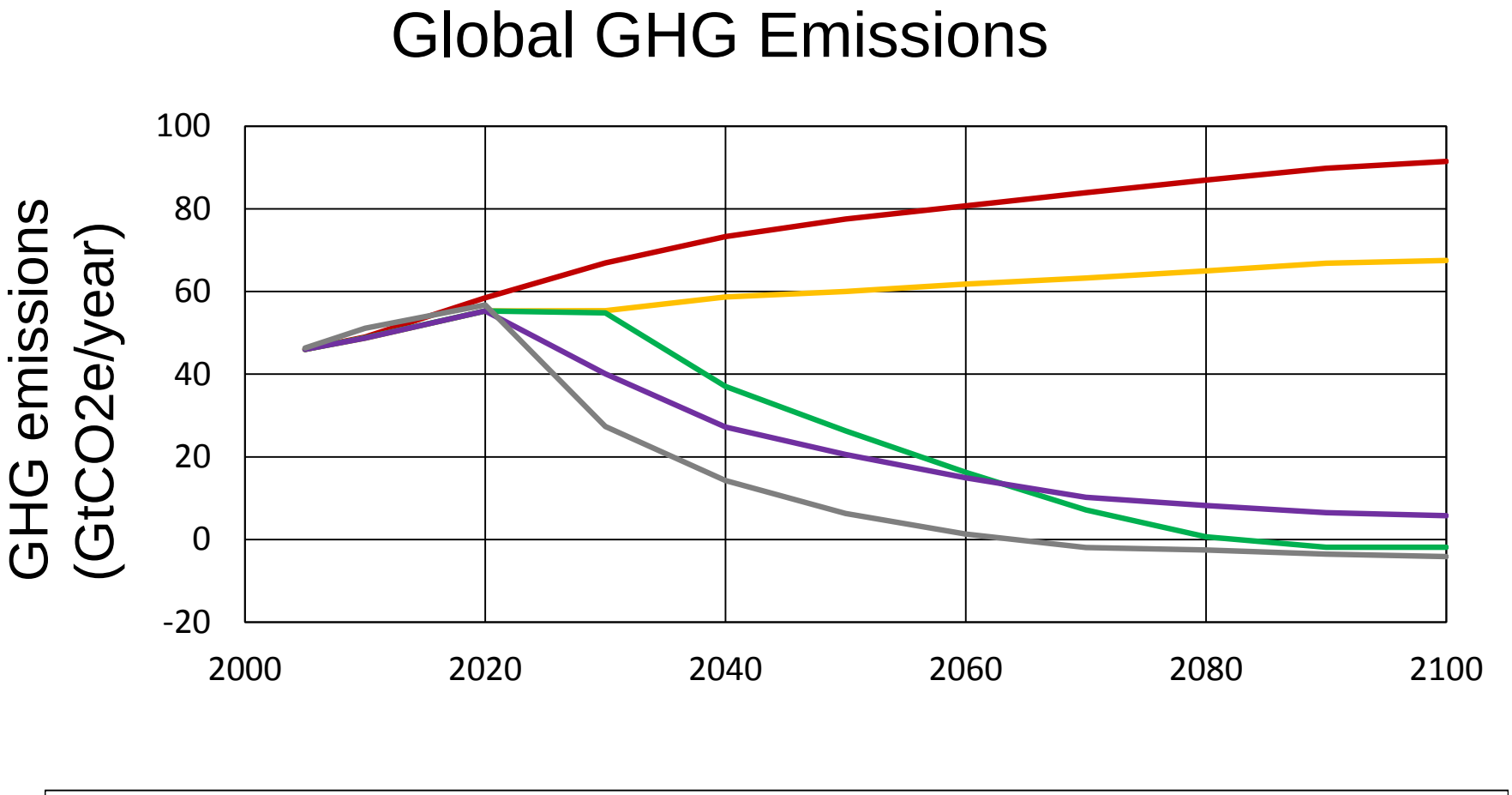
Dedicating land area for renewable energy systems can come in conflict with sustainable management and conservation of forests and mountain ecosystems (--).





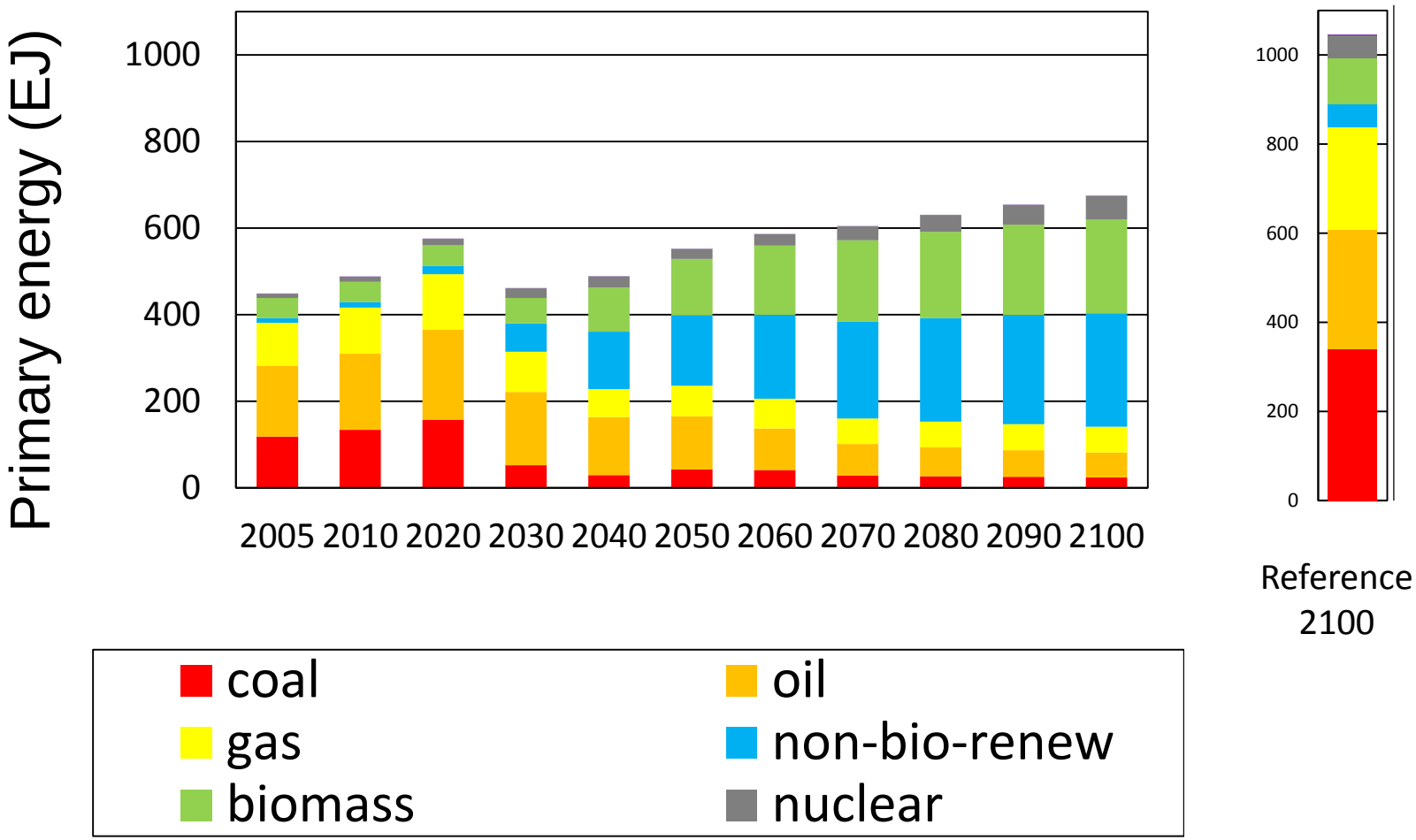
Sketch of GHG emissions reduction of individual sectors

Is there a feasible path to limit the average temperature increase to 1.5 ºC?

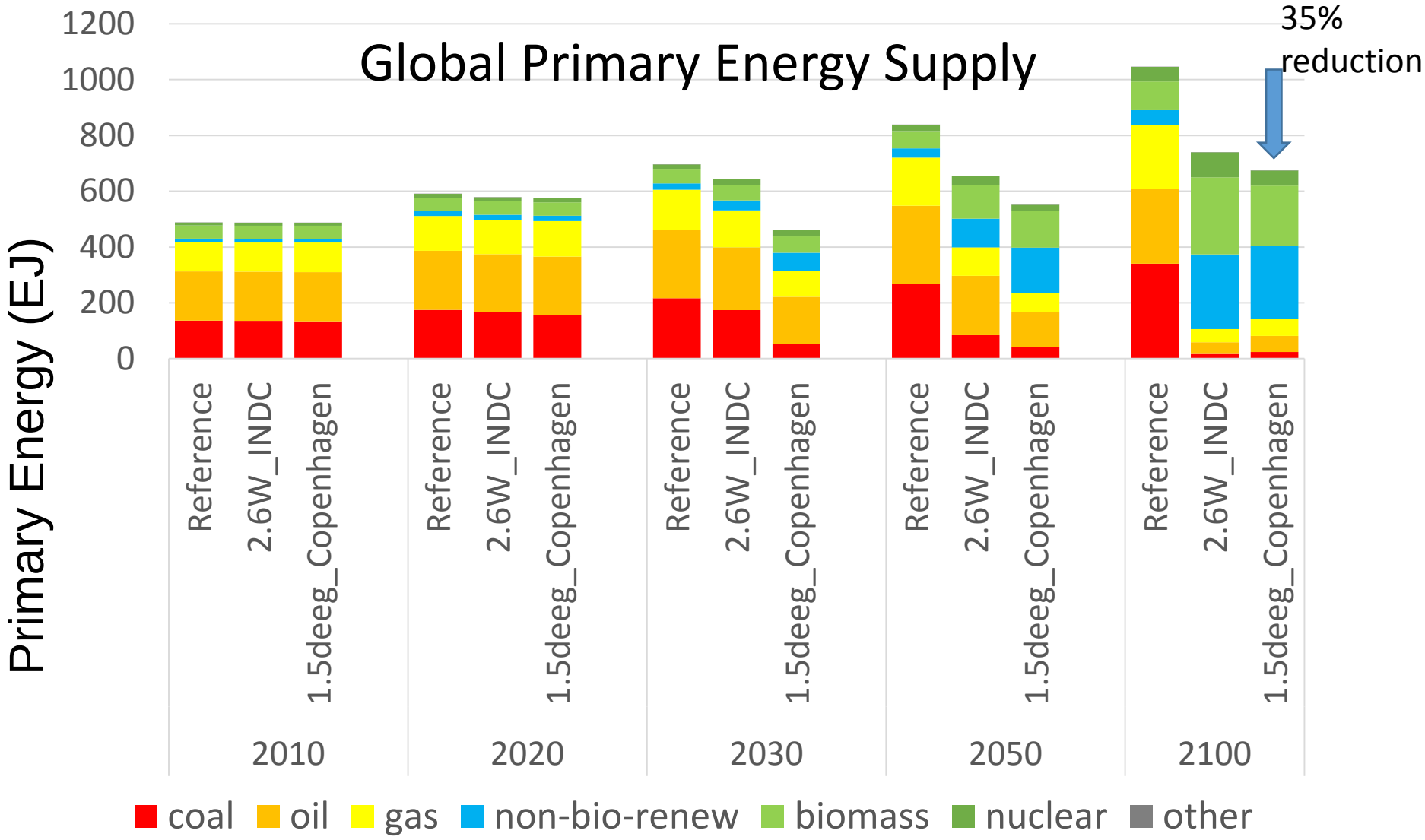


Source: S. Fujimori

Global primary energy supply (1.5 deg_Copenhagen)



Increasing the capacity of renewables is a key in achieving 1.5 °C target.



Source: S. Fujimori

Discussion points

1) Main Issues of NDCs
   - Targets of each country
   - How to achieve it.
   - Barriers to achieve it
   - Synergies and trade-offs with SDGs
2) Long-term low GHG development strategies
3) The gap between the NDC and the path compatible with 2°C or 1.5°C of each country
4) The level of ambition of NDCs
   - How much can the level of ambition of NDC be increased?
   - How can the increased level be achieved? Is it achieved with technologies, supply-side management, demand-side management, or what?
   - How about collaboration with other countries and/or international?

Discussion points (Cont'd)

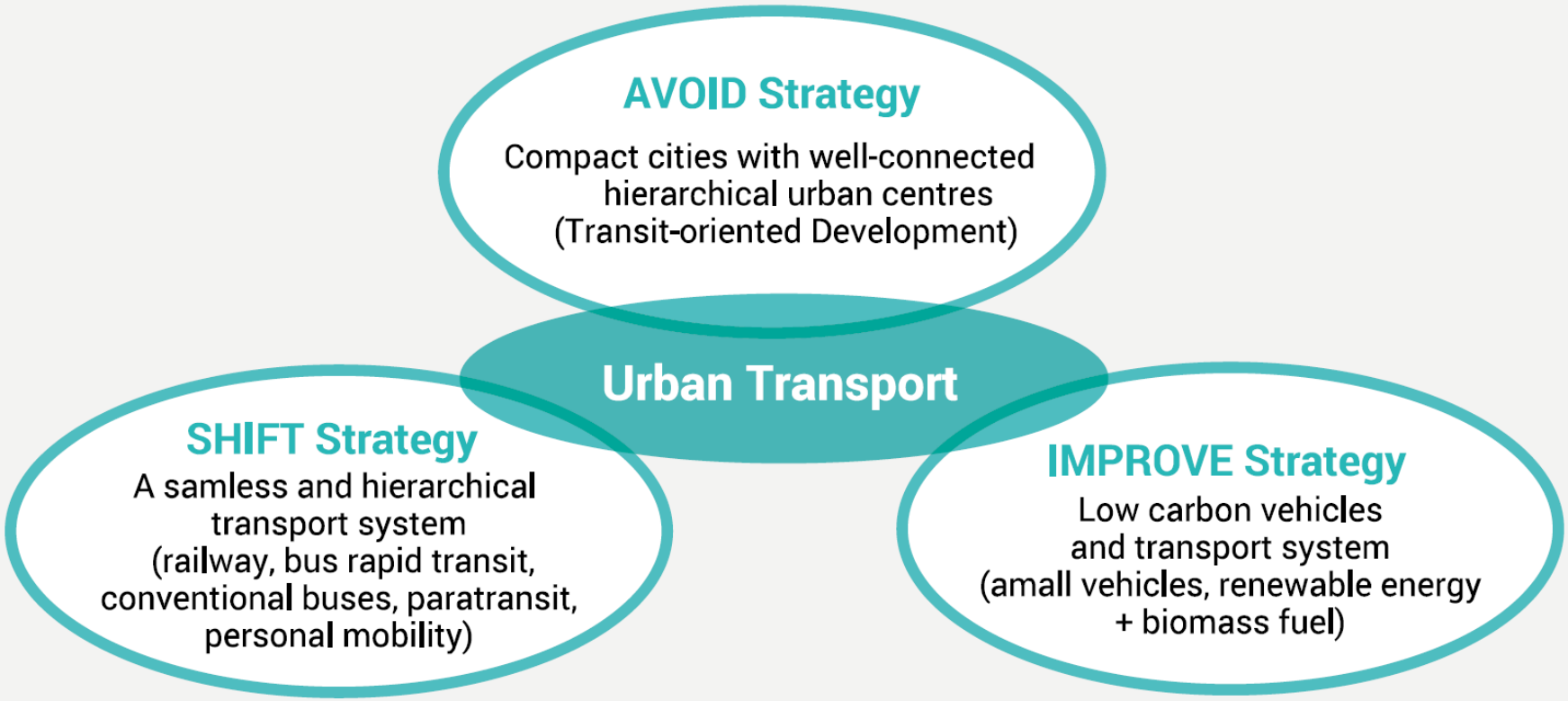
5) Decentralized solution/ city-level solution
   - Is there any local initiatives? If so, how can these initiative contribute to increase the level of ambition of NDC?

6) Role of civil society
   - How will civil societies be involved?
   - What kinds of information is needed to support the activities of civil society?

Table 3.7 Trade-offs of clime action 3: "resources and materials" with SDG targets

Theme	Targets having trade-offs with action 3	Trade-offs
GDP growth	Target 8.1: Annual growth rate of real GDP per capita	Targets of increasing GDP might damage resources as has been already experienced by developed countries (--).
Development oriented policies	Target 8.3: Promote development oriented policies	Development-oriented policies should be carefully organised since encouraging economic growth unilaterally causes social problems and damages biodiversity and well-balanced environmental conditions (-).
Industrialisation	Target 9.2: Promote inclusive and sustainable industrialisation	Raising industry's share of employment and GDP without effective policies for clean and green growth may increase carbon emissions (-).
Increase exports	Target 17.11: Significantly increase the exports of developing countries	Targets of increasing the share of global exports may cause negative impact on the environment through logistics and production processes, and also increase waste and pollution (--).

Key actions for urban transport.



Action 1

Table 3.2 Synergies of clime action 1: "urban transport" with SDG targets

Theme	Targets having synergies with action 1	Synergies
Safe transport	Target 3.6: Halve the number of global deaths and injuries from road traffic accidents	Well-designed pedestrian and bike roads as well as traffic control systems contribute to reducing traffic accidents (+++).
Education	Target 4.7: Ensure all learners acquire the knowledge for sustainable development	Knowledge and skills can promote sustainable urban design (+).
Economic productivity	Target 8.2: Achieve higher levels of economic productivity	Enhancing technological levels and innovation can contribute to increase in low carbon vehicles (++).
Sustainable infrastructure	Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure	Development of infrastructure for efficient urban public road network can facilitate the shift to public transport as well as reduction of commuting distance (++).

Table 3.3 Trade-offs of clime action 1: "urban transport" with SDG targets

Theme	Targets having trade-offs with action 1	Trade-offs
Prevention of substance abuse	Target 3.5: Strengthen the prevention and treatment of substance abuse	In the process of urbanisation, disorganization can create slum area s, with problems of unemployment/under-employment and drugs addiction. Therefore, proper governance and management of cities including provision of economic opportunities and essential social security is important (-).
Water resource management	Target 6.6: Protect and restore water-related ecosystems	Developing urban areas could further increase rural-to-urban migration and reduce population in rural areas, which may affect the management of forest and arable lands. This can also influence the quality of water and aquatic life (---).
Infrastructure	Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure	Development of compact cities may increase urban population and reduce rural population, which may not be a sustainable trend from a country's viewpoint (--). To develop road networks so as to provide accessibility to roads within 2 km for all people could cost a lot and promote motorisation. There may be an option to develop special low carbon cars suitable for driving in rural and rough terrains, and share them within communities(-).

Table 3.6 Synergies of clime action 3: "resources and materials" with SDG targets

Theme	Targets having synergies with action 3	Synergies
Reduction of pollution	Target 3.9: Reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Development and deployment of environment friendly products as well as the reduction of production has synergies with decrease in air and water pollution. (++).
Skills to promote SCP (Sustainable Consumption & Production)	Targets 4.2, 4.3, 4.7: Ensure that all learners acquire the knowledge and skills needed to promote sustainable development	Sufficient knowledge and skills are essential to promote sustainable consumption patterns. Also, since primary education can help in developing a fundamental mindset of sustainable use of products, education should be accessible for all children equally throughout the world (+).
Economic Productivity	Target 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation	Improvement of productivity through upgrading technologies and innovation can realise efficient use of resources (++).

Table 3.7 Trade-offs of clime action 3: "resources and materials" with SDG targets

Theme	Targets having trade-offs with action 3	Trade-offs
GDP growth	Target 8.1: Annual growth rate of real GDP per capita	Targets of increasing GDP might damage resources as has been already experienced by developed countries (--).
Development oriented policies	Target 8.3: Promote development oriented policies	Development-oriented policies should be carefully organised since encouraging economic growth unilaterally causes social problems and damages biodiversity and well-balanced environmental conditions (-).
Industrialisation	Target 9.2: Promote inclusive and sustainable industrialisation	Raising industry's share of employment and GDP without effective policies for clean and green growth may increase carbon emissions (-).
Increase exports	Target 17.11: Significantly increase the exports of developing countries	Targets of increasing the share of global exports may cause negative impact on the environment through logistics and production processes, and also increase waste and pollution (--).