



Promoting Knowledge-base System for Scientific Low Carbon Development Policy making in Asia: growing importance of Inventory work

Workshop on GHG Inventories in Asia (WGIA 12)

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Abstract

- IPCC AR5 indicated transforming **eventually to zero-emission world is unescapable** for stabilizing climate, whatever the target temperature will be. If the target is less than 2 degree rise from industrial revolution as already agreed in UNFCCC, **the total amount of allowable GHG emission (budget) from now is so small** that will be spent out within 30 years if we continues present emission rate.
- So, the role of present generation is **to achieve low carbon society until the middle of this century, while spending thriftily the remaining budget** . IPCC AR5 also indicated that feasible pathway for this is such that reduce emission into half in 2050. Simple calculation shows this is **2ton CO₂/ Capita world** towards which almost all countries need to reduce emission.
- Asia is the key and highly responsible, because in 2050 it shares half of the world in terms of economy, energy and GHG emission. LoCARNet found **many challenging areas** science community and policy maker to tackle .
- **GHG inventory work**, which is newly identifying basic value of all the human activities in low carbon society, **need to be more deepened and expanded** to planning of LC Development policy such as PDCA cycle and MRV, LC economy such as C&T and supply chain management and absorption field such as REDD and land-use change.
- Asia is almost establishing **effective low carbon knowledge sharing mechanism**, in which **WGIA** plays the key role in paving scientific pathway to achieve low carbon Asia.

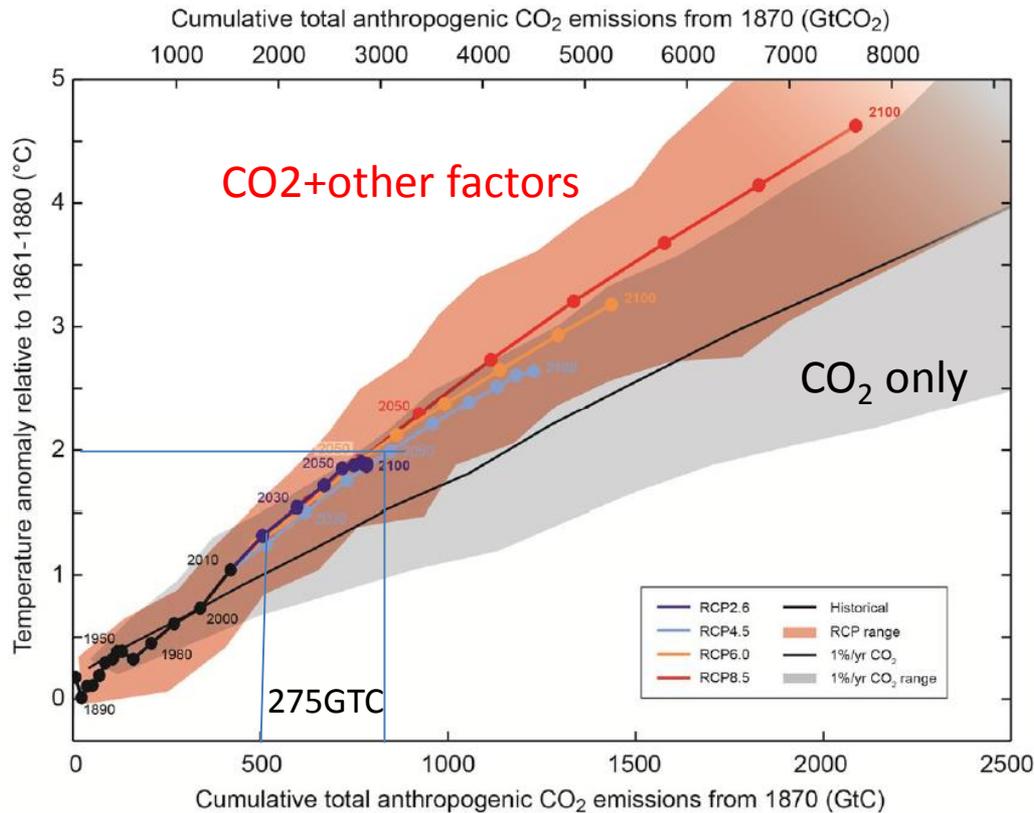
Zero emission is only one ultimate solution

Emission budget to 2°C target and time are limited :

Cumulative total anthropogenic CO₂ emission from 1870 (GtCO₂)

Linear relation to temperature rise

→Temperature limit decides upper limit of CO₂/GHG emission



To limit within 2 °C from the pre-industrial era with certain possibility, upper limits are

>33% → 880GtC

>50% → 840GtC

>66% → 790GtC

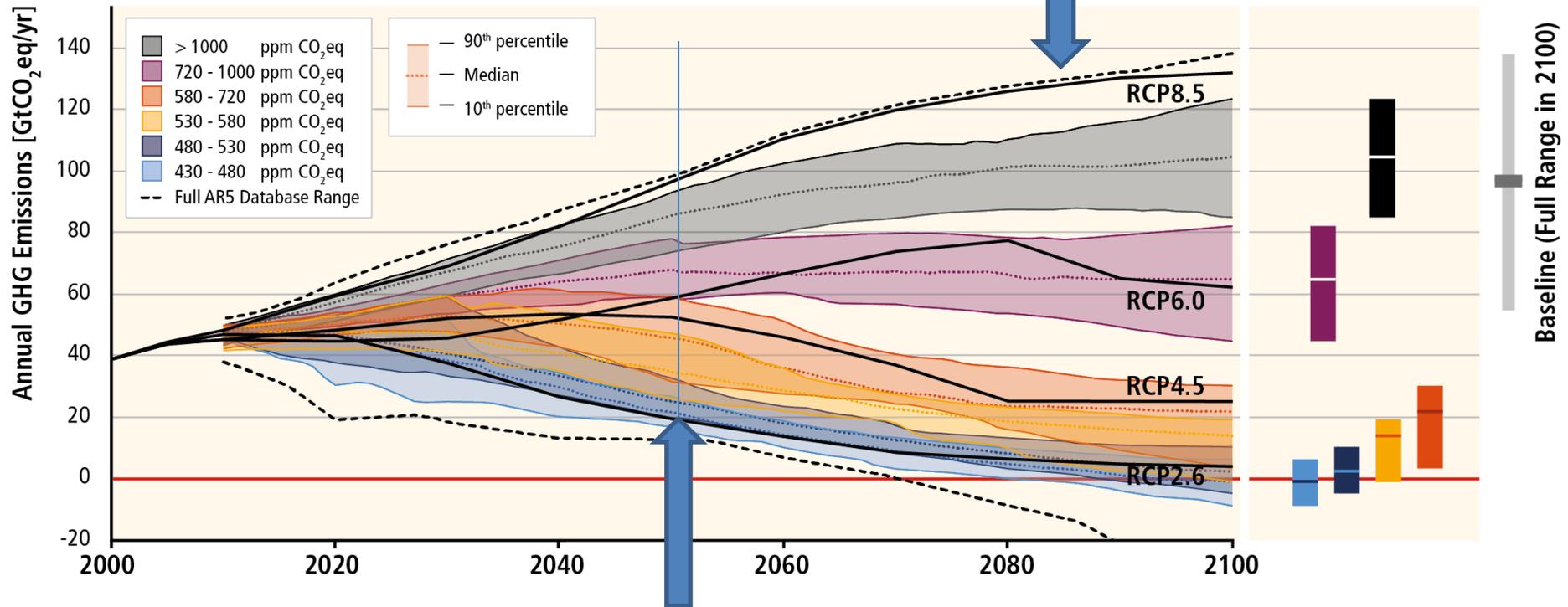
Already until 2011, 515GtC has been emitted. So, only **275GtC allowed** for 2°C target.

cf. 2013 emission 9.9GtC

⇒if it continues, **30 years** to go, and dead end!

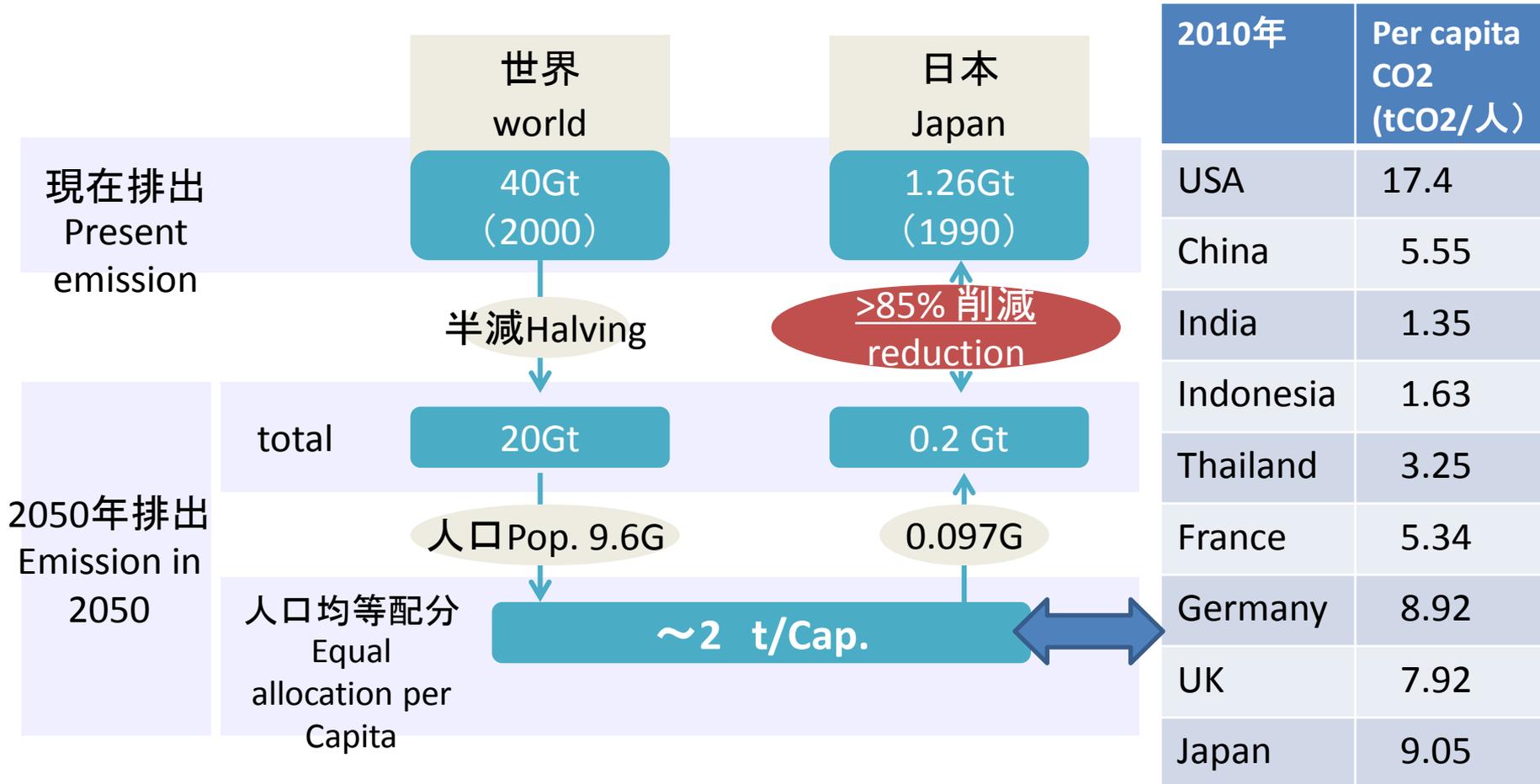
Without more mitigation, global mean surface temperature might increase by 3.7° to 4.8°C over the 21st century.

GHG Emission Pathways 2000-2100: All AR5 Scenarios



To avoid 2 degree rise, path of passing 50% reduction from now in 2050 is feasible and reasonable .

2050 halving from now: 2tonCO₂/Capita World
 Japan: more than 80% reduction (base year 1990)
 Asia: already more than 2ton/ Capita

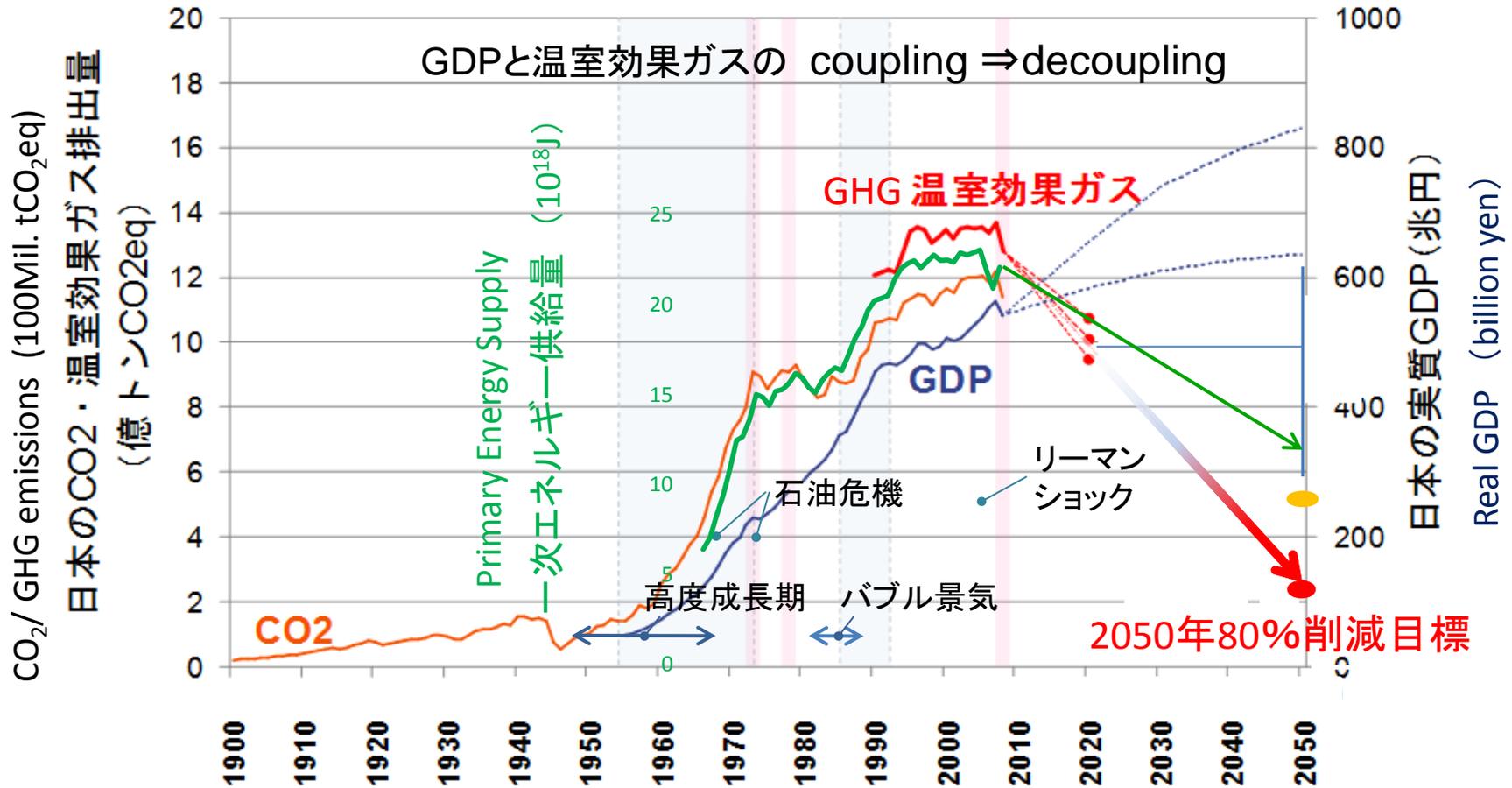


※世界の人口は国連「World Population Prospects, the 2012 Revision」より、日本の人口は社人研「日本の将来推計人口（平成24年1月推計）」より

2050年に向けた 我が国の大転機

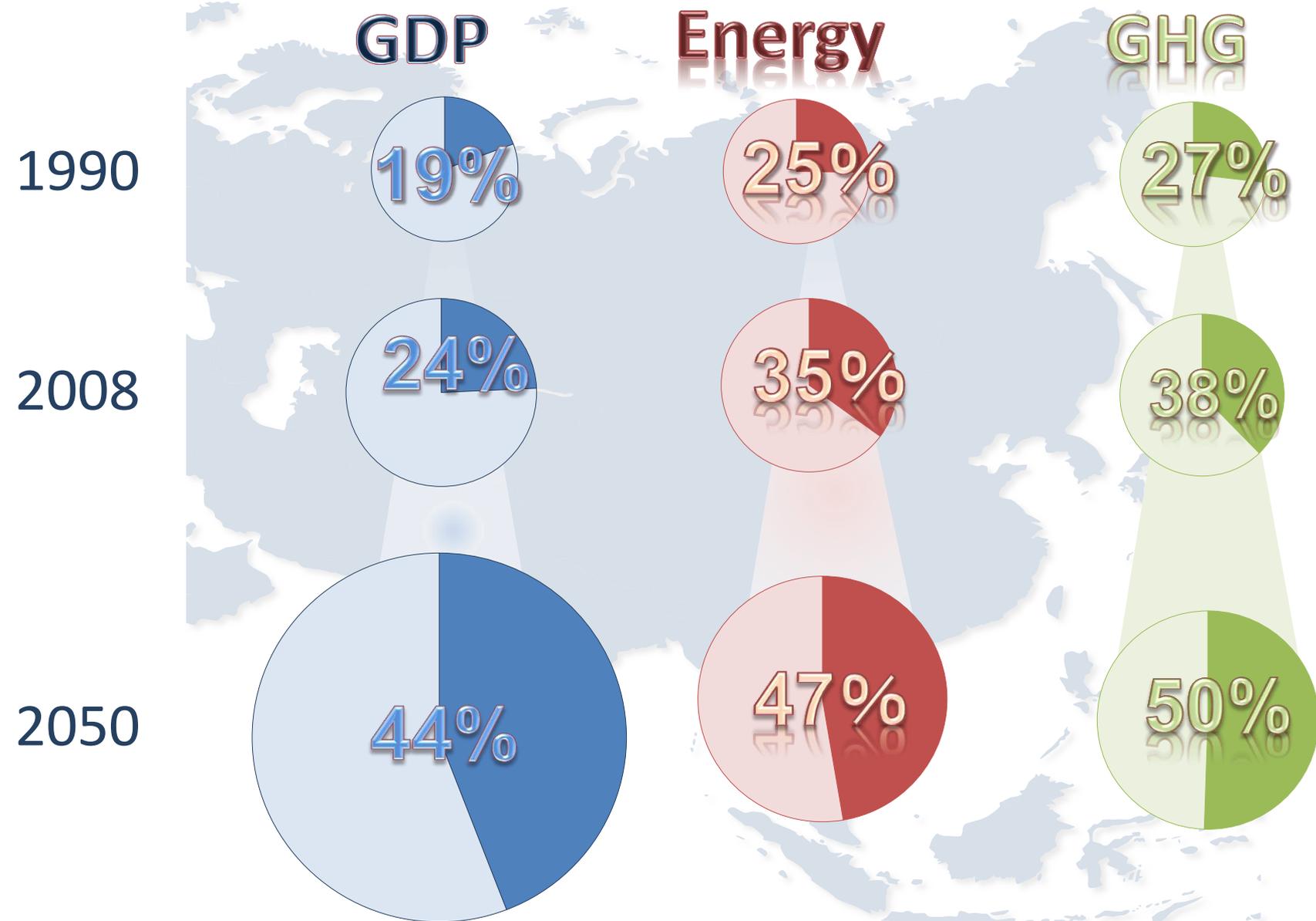
Japan: Drastic transformation towards 2050
 高エネルギー・高炭素依存社会からの脱却

Break away from high energy and carbon dependent society



) GDPの将来値は国立環境研究所 脱温暖化2050プロジェクト A・Bシナリオの想定値

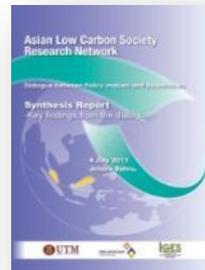
Growing importance of actions towards low-carbon development in Asia



LoCARNet: Low Carbon Asia Research Network

An open network of researchers & research organizations, as well as like-minded relevant stakeholders that facilitates the formulation and implementation of science-based policies for low-carbon development in Asia.

Lessons learnt from activities and outcomes from dialogues between Researchers and Policy-makers in Asia



Synthesis Reports: <http://lcs-rnet.org/publications/index.html>



Seven Asian priority topics discussed: “GHG inventories as bases”; “policy-making processes and use of integrated assessment models”; “land use and forestry”; “low-carbon cities”; “local level practices/ decisions / initiatives”; “institutionalization of low-carbon green growth”; and “technology for leapfrogging”.

2012 October, Bangkok (LoCARNet 1st Annual Meeting)

planing ⇒ 2014 Nov. 24-26 Bogor, Indonesia (LoCARNet 3rd Annual Meeting)

Workshops and consultations in Asian countries

Indonesia



- Low Emission Development Scenarios (LEDs) of Energy Sector: Preliminary Result of Asia-Pacific Integrated Modeling (AIM) exercise (June 2012)
- Indonesia Workshop: Research Cooperation on “Development of Low-Carbon Strategies” (Feb. 2013)

Cambodia

Cambodia Workshop: A Systematic and Quantitative Design of Low Carbon Development Plan for Cambodia (April 2013)



Vietnam

Vietnam Workshop: Low Carbon Society in Vietnam (April 2013)



Thailand

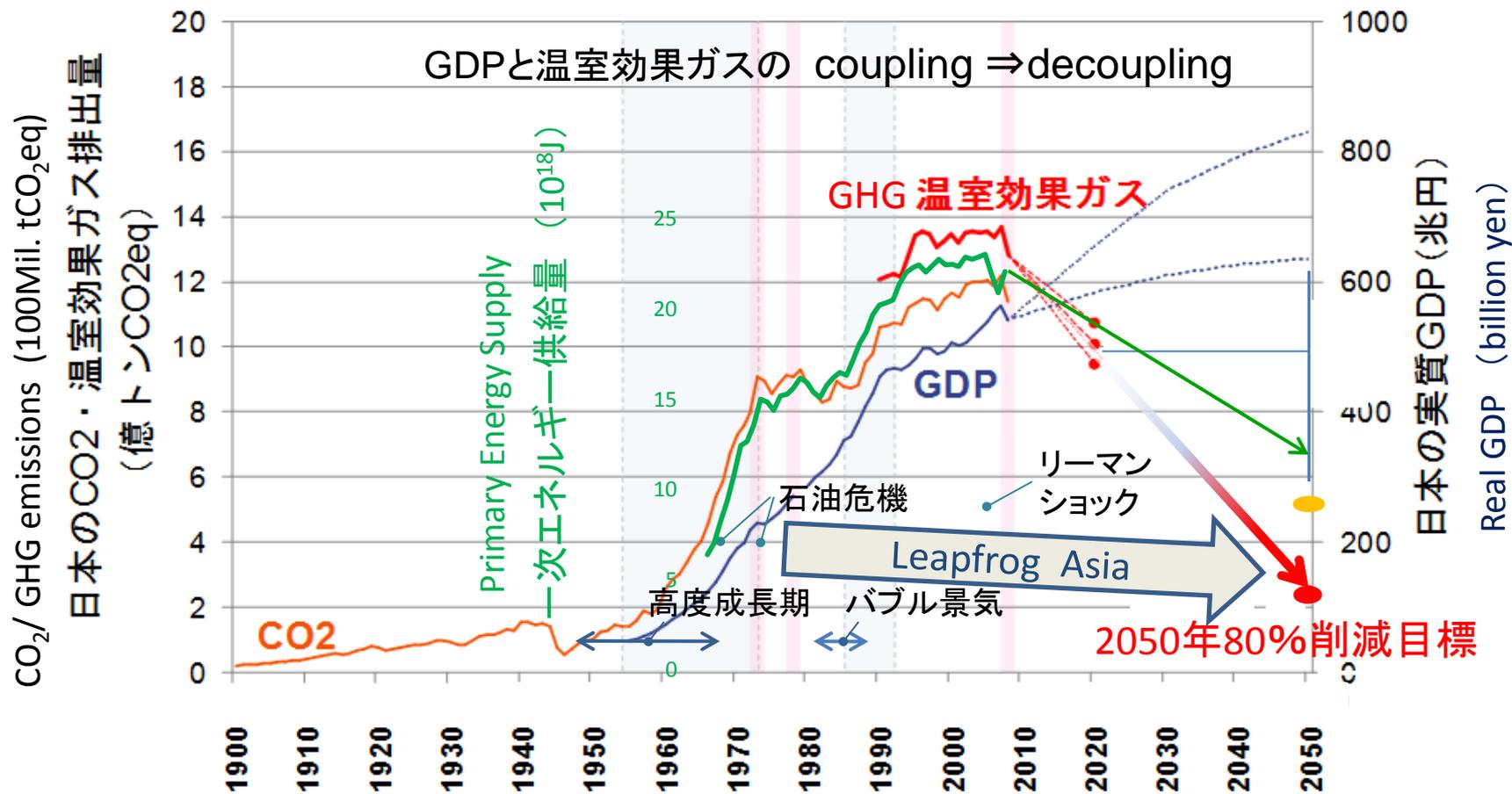
- LoCARNet 1st Annual Mtg. (Oct. 2012)
- Development of Asia Low-Carbon Strategy and Roadmap 1st Kick off Meeting (Oct. 2012)

Malaysia



Int'l workshops in Iskandar, Malaysia (2012-2013)

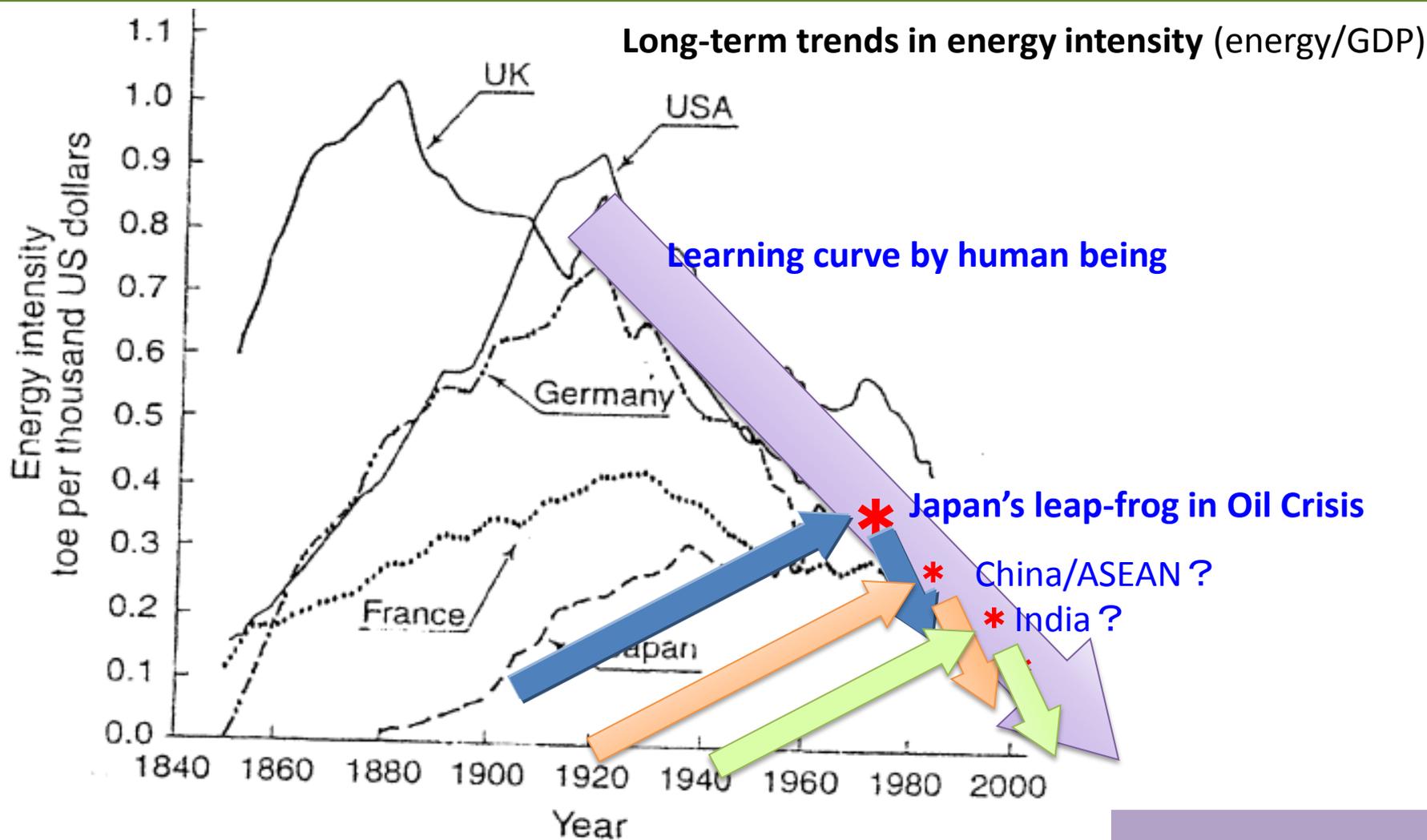
Asia: Leapfrog directly to low carbon society Without following high energy and carbon dependent society



) GDPの将来値は国立環境研究所 脱温暖化2050プロジェクト A・Bシナリオの想定値

気候変動をテコとしたアジアの一足飛び発展は可能か

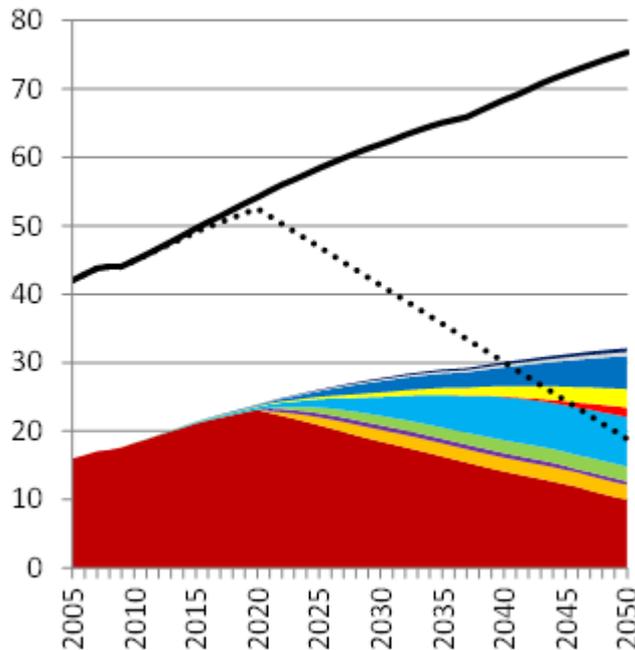
Opportunities for Asia: Leveraged by climate change



There is potential to reduce GHG emissions by 69% compared to the reference case in Asia

- The global emissions will become 1.8 times larger compared to the 2005 level and emissions in Asia will be doubled under the reference scenario.
- It is feasible to reduce GHG emissions in Asia by 69% by introducing ten actions and Others (CH₄ and N₂O emissions from other than agriculture and livestock) appropriately compared to the reference scenario in 2050.

GHG emissions (GtCO₂e/year)



Reductions by

- Action1: Urban Transport
- Action2: Interregional Transport
- Action3: Resources & Materials
- Action4: Buildings
- Action5: Biomass
- Action6: Energy System
- Action7: Agriculture and Livestock
- Action8: Forest & Landuse
- Others (CH₄ and N₂O emissions from other than agriculture and livestock)

GHG Emissions in

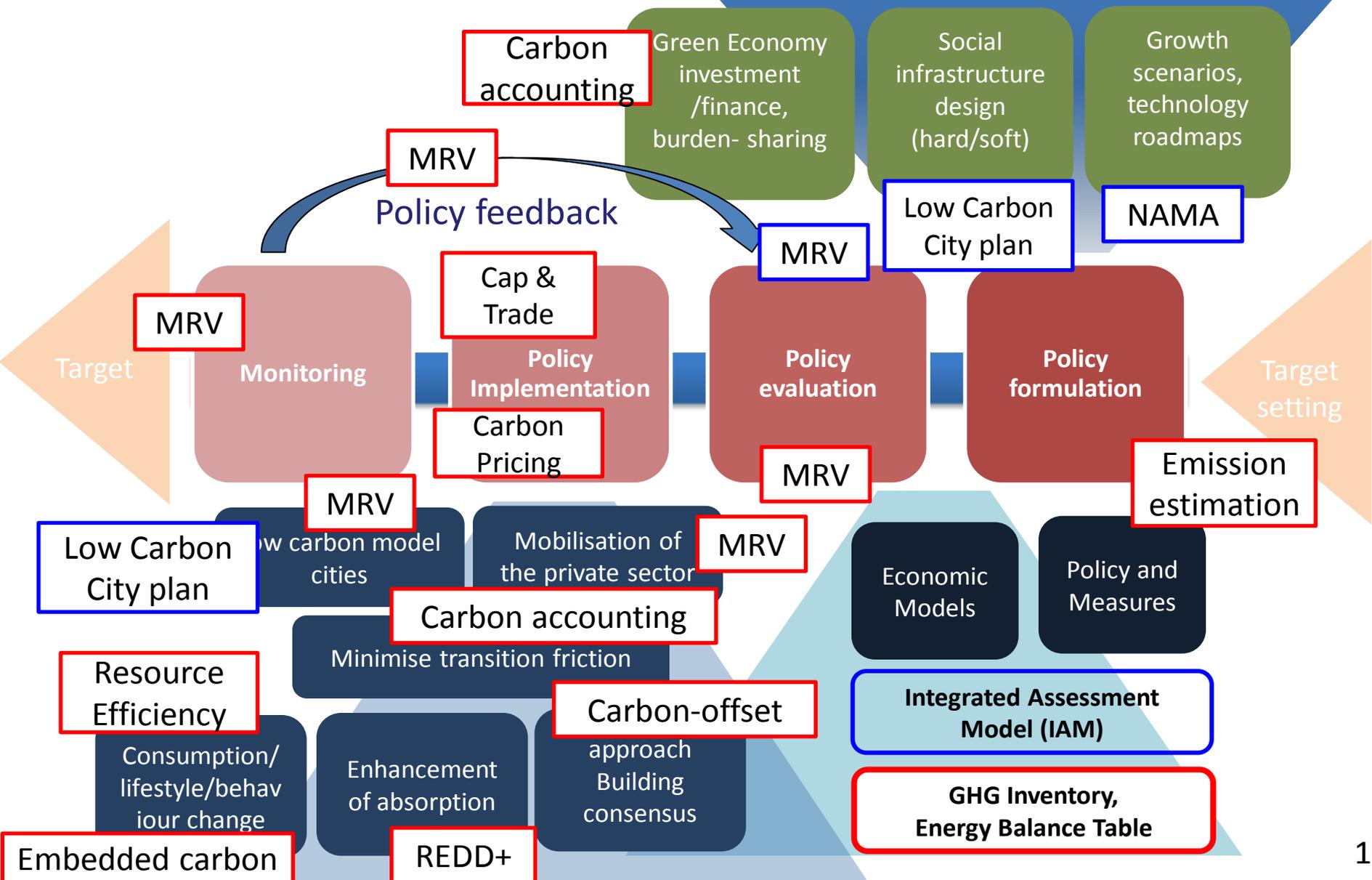
- the world (Reference)
- the world (LCS)
- Asia (LCS)

Expanding needs of GHG inventory work

- Urgently establishing low carbon development planning (Central /local)
 - MRV: Plan, do, check, act
- Shifting to low carbon economy / Carbon pricing
 - Carbon tax, Cap and Trade, Carbon offset, CSR/ Carbon Audit
- Cutting into supply chain management
 - resource efficiency
 - 3R, waste management
- Enhancing absorption capacity
 - REDD+
 - Land-use change management

Expanding fields for GHG I and IAM application toward carbon neutral Society

PDCA Steps for formulating low-carbon growth policy





**Institute for Global Environmental Strategies
(IGES)**

LCS-RNet/LoCARNet Secretariat