International Institute for Applied Systems Analysis

Asian developing countries' pathways to carbon neutrality

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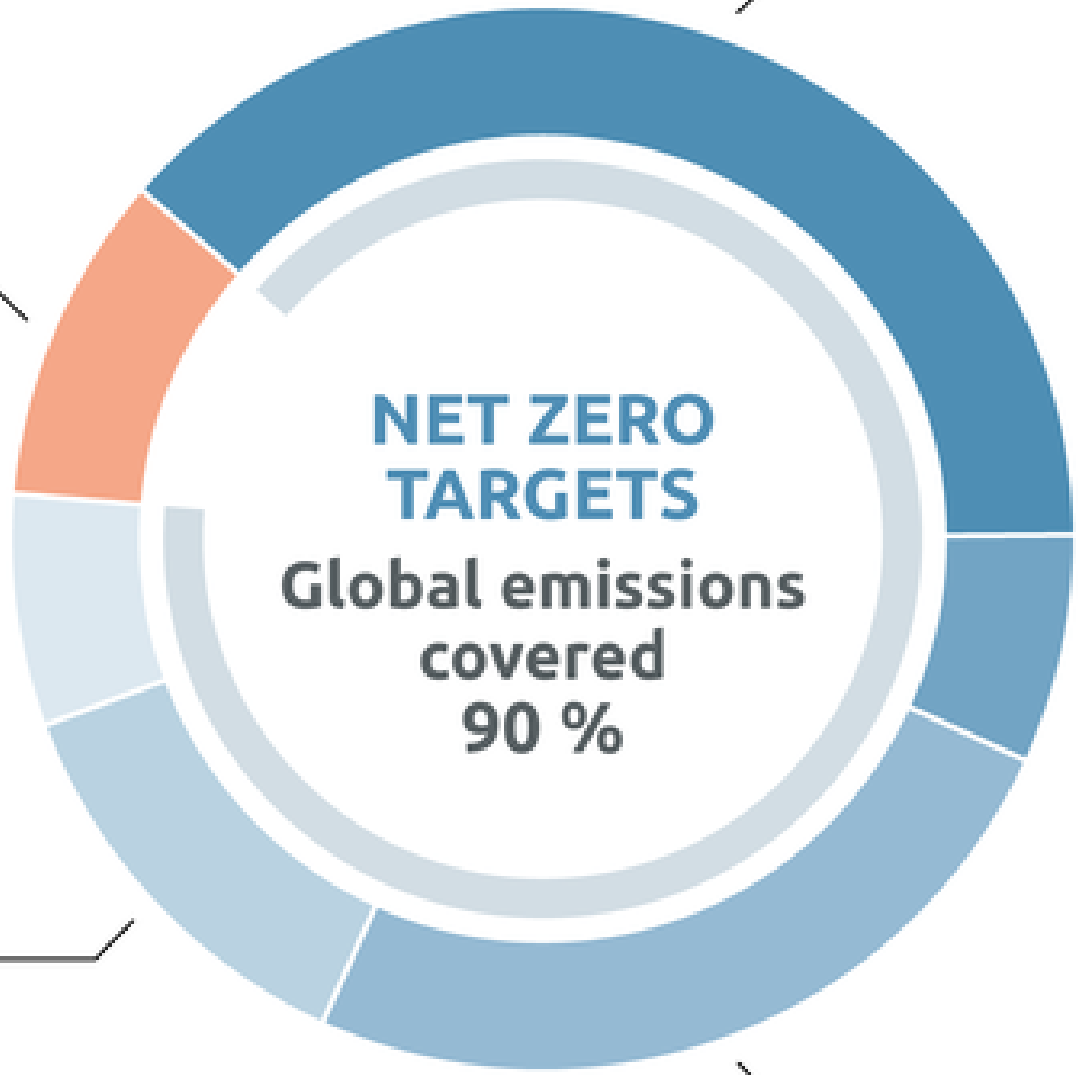
Leena Srivastava

Deputy Director General for Sciences, IIASA

Net zero emissions target announcements

Agreed in law, as part of an initiative, or under discussion

Climate Action Tracker **Nov 2021** Update



Other countries with similar net zero announcements
38 %

Countries with no net zero target
10 %

India
7 %

European Union (EU27)
7 %

United States
12 %

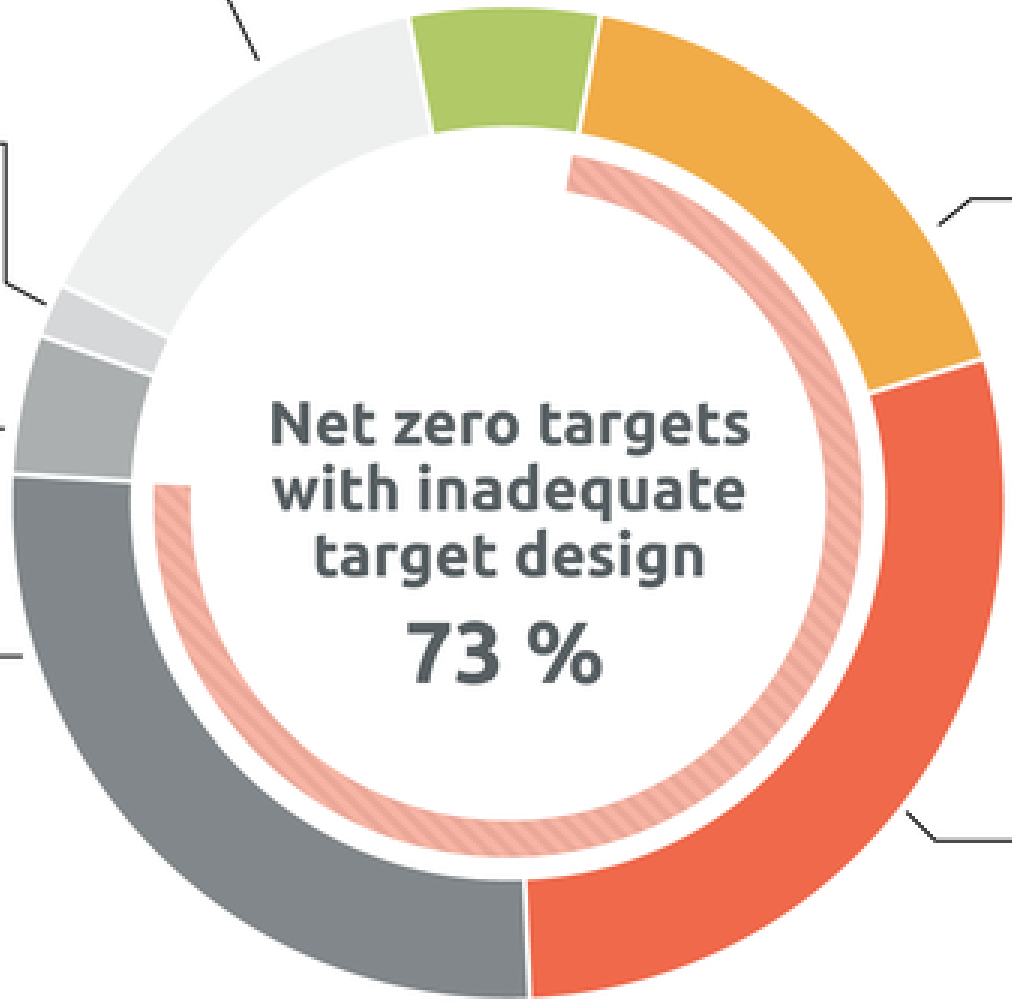
China
25 %

Net zero target design - mostly inadequate to date

Evaluation of the quality of net zero targets using the CAT's design blueprint for transparent, comprehensive, and robust national net zero targets

Climate Action Tracker

Nov 2021 Update



Acceptable
6 %
Chile
Costa Rica
EU
UK

Average
17 %
Canada
Germany
South Korea
USA

Poor
29 %
Australia
China
Japan
New Zealand

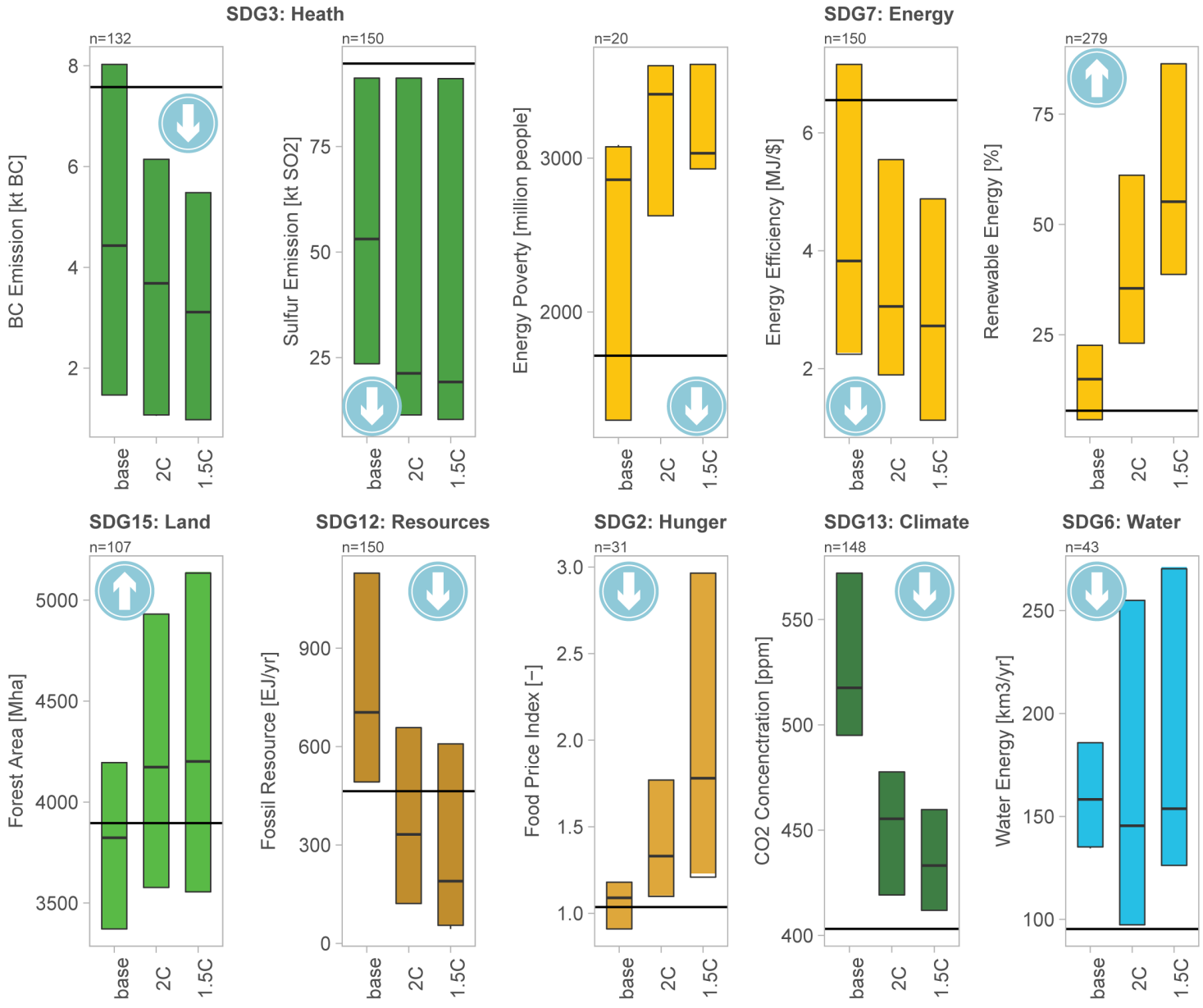
Not covered by CAT
15 %

Pending CAT assessment
2 %

No target
5 %
Iran
Kenya
Mexico
Morocco
Philippines
Viet Nam

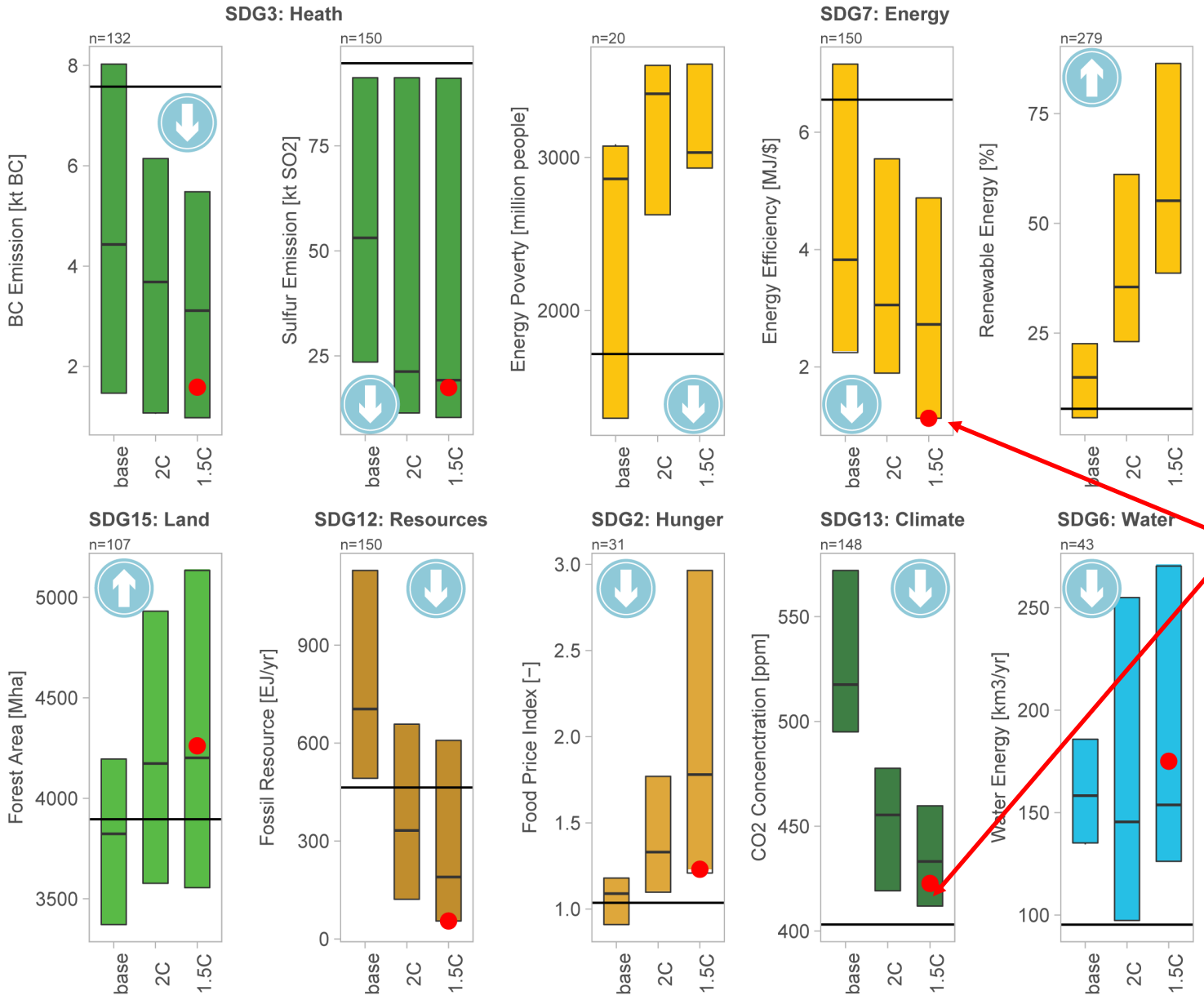
Information incomplete
27 %
Argentina
Brazil
Colombia
India
Indonesia
Nigeria
Russia
Saudi Arabia
South Africa
Thailand
Turkey
UAE
Ukraine

SDG indicators: Baseline, 2C and 1.5C Scenarios (adapted from IPCC SR1.5, Figure 5.3a)



Source: IPCC SR1.5, adapted from Figure 5.3a

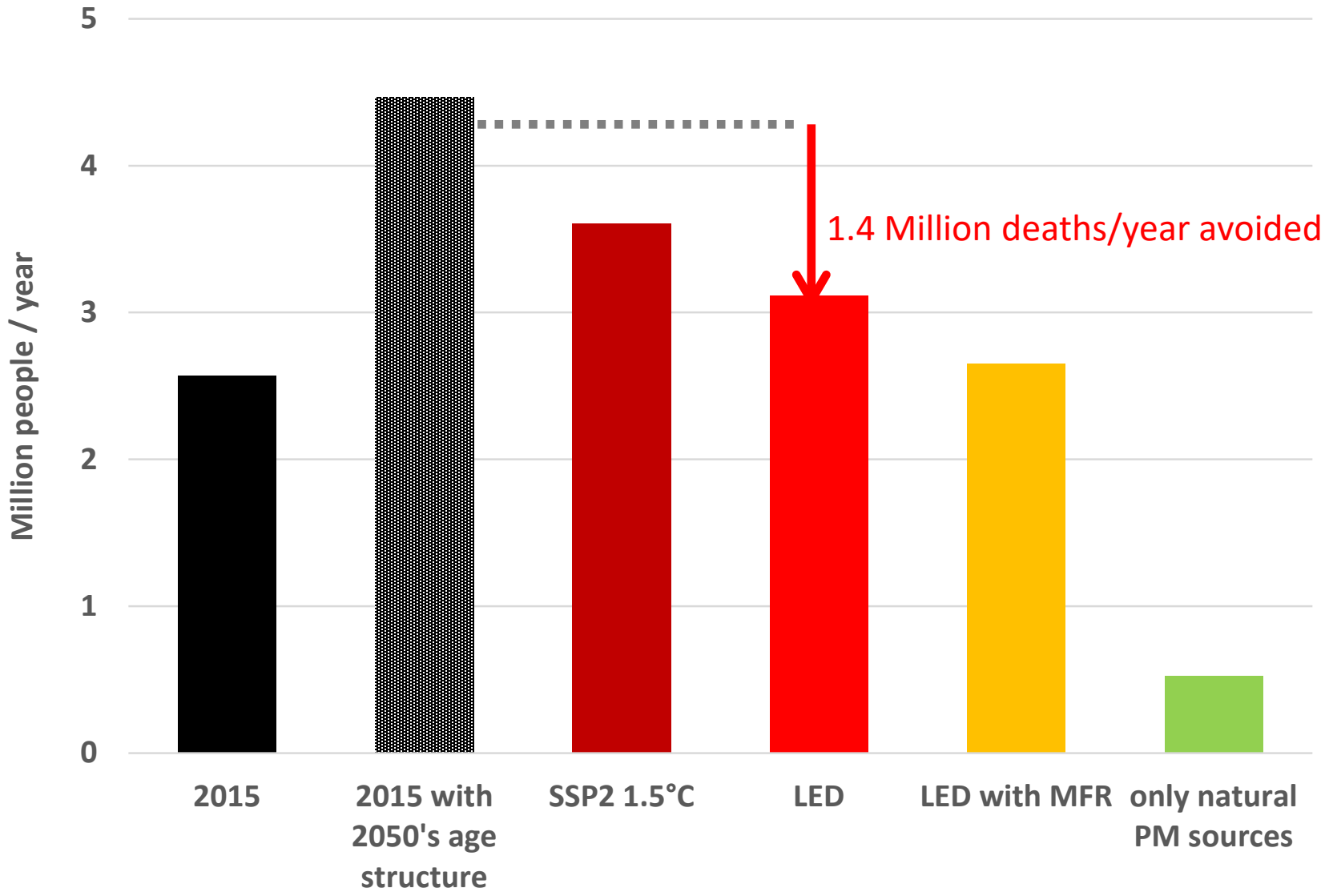
SDG indicators: LED in comparison to Baseline, 2C and 1.5C Scenarios (adapted from IPCC SR1.5, Figure 5.3a)



Demand-focused action (LED)

Source: IPCC SR1.5, adapted from Figure 5.3a

Pre-mature Deaths from Air Pollution

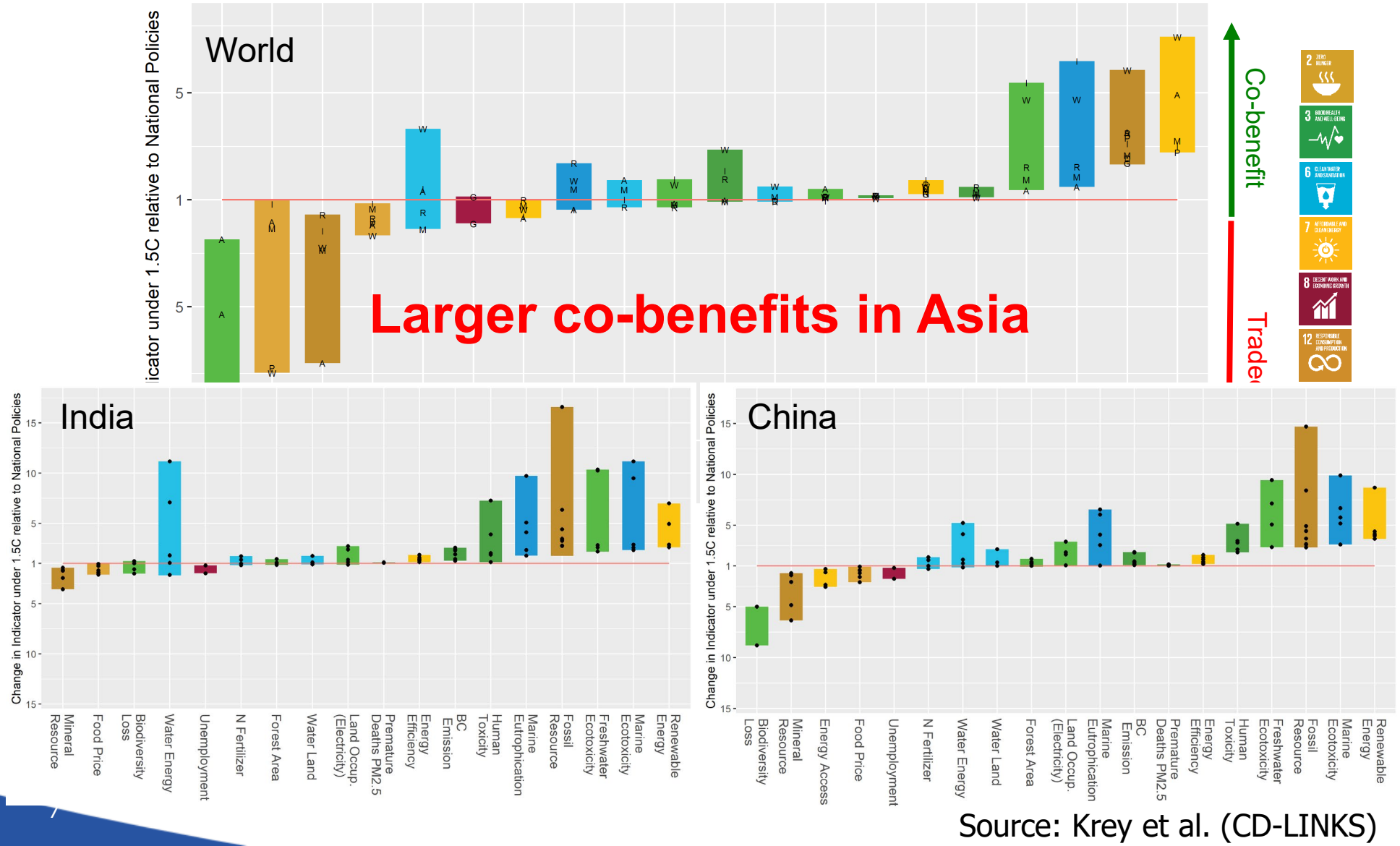


MFR = maximum feasible emissions reductions (near-term technology)

Source: GAINS model

Climate Policy Impact on SDGs: 1.5°C

2050



Source: Krey et al. (CD-LINKS)

Energy options for Carbon Neutrality

Paris Agreement-compatible pathways all show strong reductions in fossil-fuel consumption compared to reference scenarios:

- Large increase in electricity demand due to the essential role of electrification to decarbonize end-use sectors, in particular transport and the need to provide access to clean and affordable energy for a growing population;
- A very high increase in generation from renewable energy, which becomes the dominant source even within the next decade in a number of countries – against the backdrop of an overall sharp increase in electricity generation;
- At least 50% share of decarbonized electricity generation by 2030 and 100% by 2050 needs to, and can be, achieved both in South Asia and South East Asia;
- Use of unabated coal (without CCS) is reduced dramatically by 2030 and essentially phased out by 2040;
- There is a wide range of renewable energy and storage technologies available to achieve these aims, with wind and solar being the most important technologies that can be deployed rapidly at large scale.

https://climateanalytics.org/media/decarbonisingasia2019-fullreport-climateanalytics.pdf

Some examples of challenges…

- Since 2000, the world has doubled its coal-fired power capacity to around 2,045 gigawatts (GW) after explosive growth in China and India. A further 200GW is being built and 300GW is planned. (Carbon Brief, March 2020)
- Achieving net-zero carbon emissions in China's transportation sector could cost $11 trillion, or "1.8% of GDP per year through to 2060."
- Mumbai wants to achieve net zero emissions 20 years ahead of the goal set by Prime Minister Narendra Modi for the country. In this decade alone, authorities aim to reduce carbon emissions by 30%.
- South Asia has also made progress in electrification, yet ESMAP reports nearly 400 million people without access to electricity and 1.1 billion people lacking access to clean cooking possibilities (ESMAP, 2016).

The need for support is inevitable

- Investments in clean energy and infrastructure
- Stranded costs
- Dealing with Trade-offs
- Revising the institutional framework
- Economic costs
- Adaptation and Resilience
- …

And, of course, the developed countries would need to lead the way….

Thank you for your time.

Questions.

Contact: report@tky.ieej.or.jp