Promoting the Implementation of Co-benefits Projects in Asia:

Reflections on a Decade of Cooperation

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How Can Asia Manage Air Pollution and Climate Change?:
From Understanding Impacts to Implementing Solutions
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環境省
Ministry of the Environment

Outline

- **Background on MOEJ's International Cooperation on Co-benefits**
- **Cooperation with Indonesia**
- **Cooperation with Mongolia**
- **Key Messages**

The MOEJ began working on co-benefits in 2007; since then co-benefits has drawn growing attention

Much of the MOEJ's work on co-benefits has focused on translating an understanding of impacts into practical actions

Mongolia
Bilateral cooperation between Japan and Mongol(2014 – ongoing)

China
Quantitative evaluation of Co-benefits effects and creating Co-benefits guidelines in fields of printing and petrochemistry etc. are being implemented
(2008 – 2021)

China
City-to-city collaboration between Japan and China to improve Chinese air environment
(2014 – ongoing)

Iran
Project for Capacity Development on Air Pollution Control in Tehran Municipality
(2017 – 21)

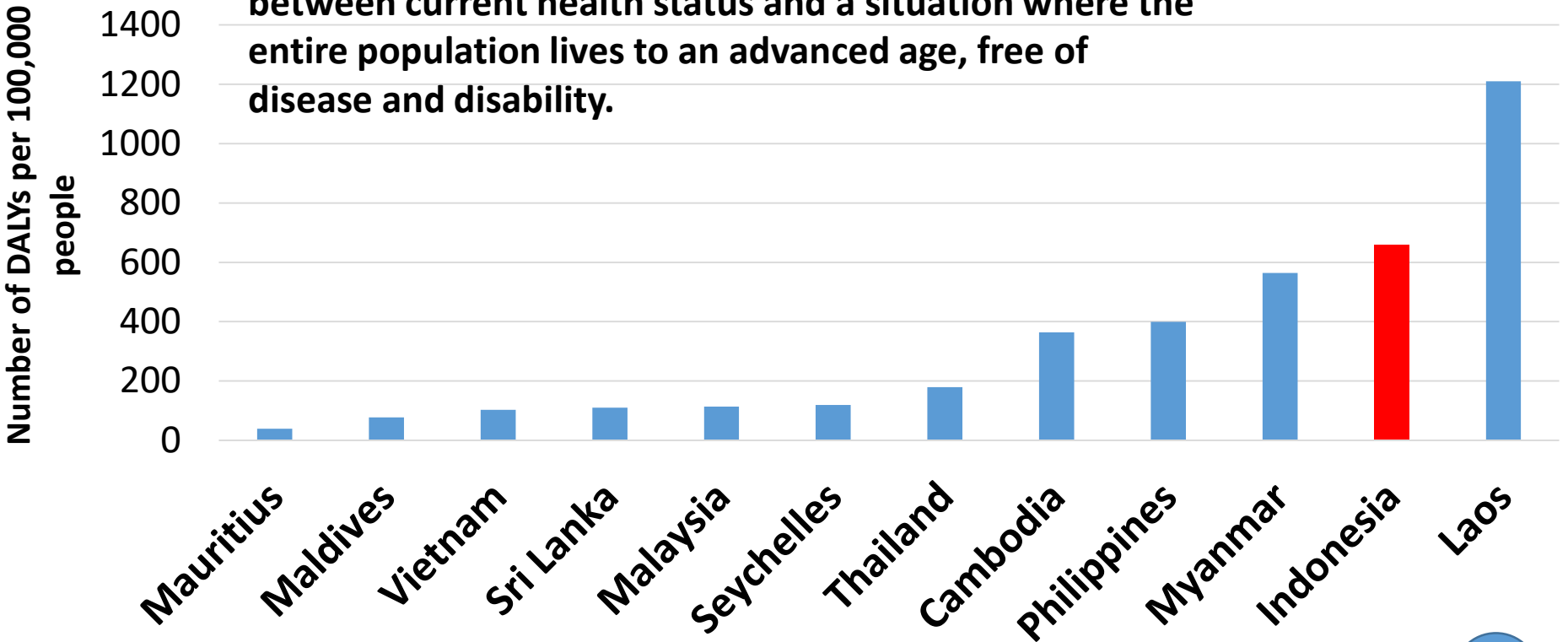
Vietnam
Co-benefits approach aganst air pollution, developing human resources on environment , instructing in some model plants
(2015– 2017)

Indonesia
Quantitative evaluation of Co-benefits effects and creating Co-benefits guidelines in fields of fish processing industry.
(2008-2020)

Cooperation with Indonesia

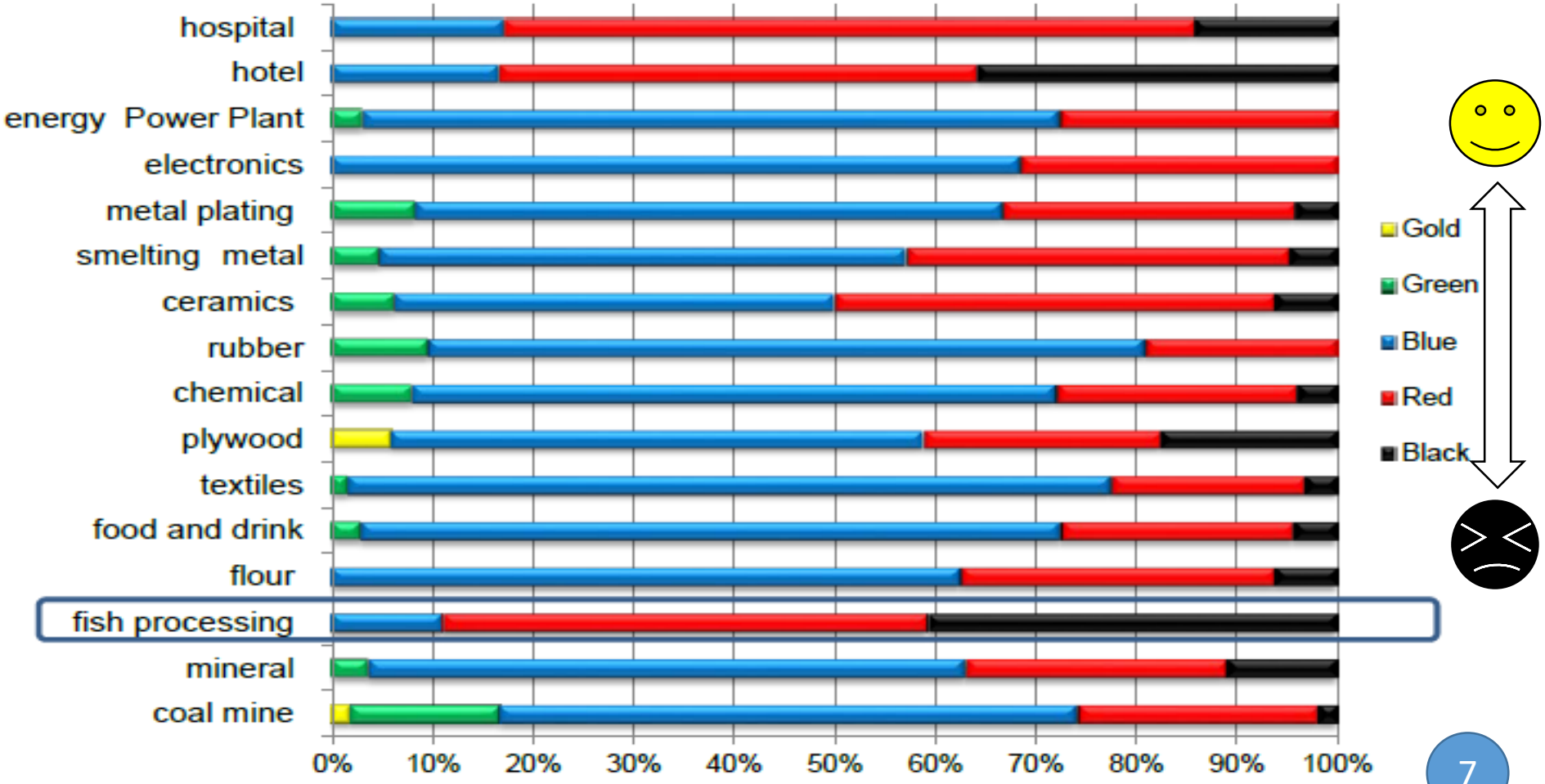
Unsafe water can cause disease and even early death

One DALY is one lost year of a "healthy" life. The sum of DALYs across the population is a measurement of the gap between current health status and a situation where the entire population lives to an advanced age, free of disease and disability.



Source: Global Burden of Disease Study 2017

Indonesia's PROPER rating system shows fish processing is an important contributor to poor water quality



Co-benefits approach cooperation with Indonesia

- By installing an appropriate wastewater treatment system to a fish processing factory, the quality of wastewater the existing treatment system are reduced.

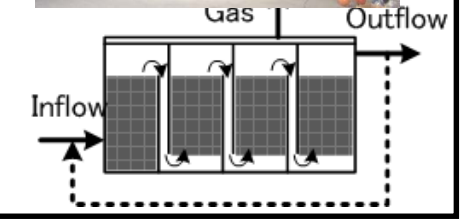
Co-benefits Type Wastewater Treatment at a Fish Processing Factory

Gas holder

Biogas generator

Oil trap/ Equalization tank

Anaerobic baffled reactor (Anaerobic)



Swim Bed Tank (Aerobic)

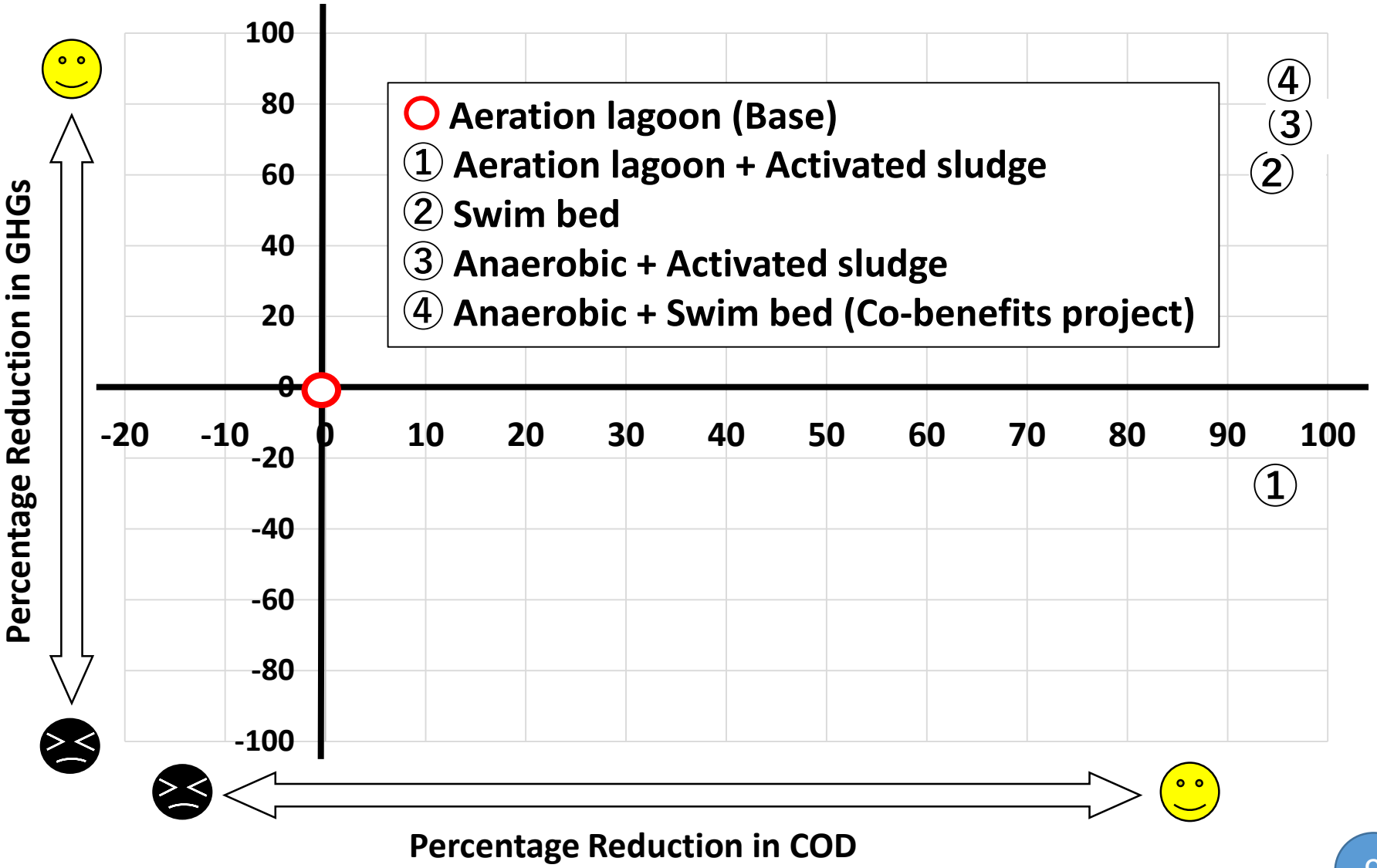
Sludge

Clarifier

Sludge (sun drying)

Effluent (to drain)

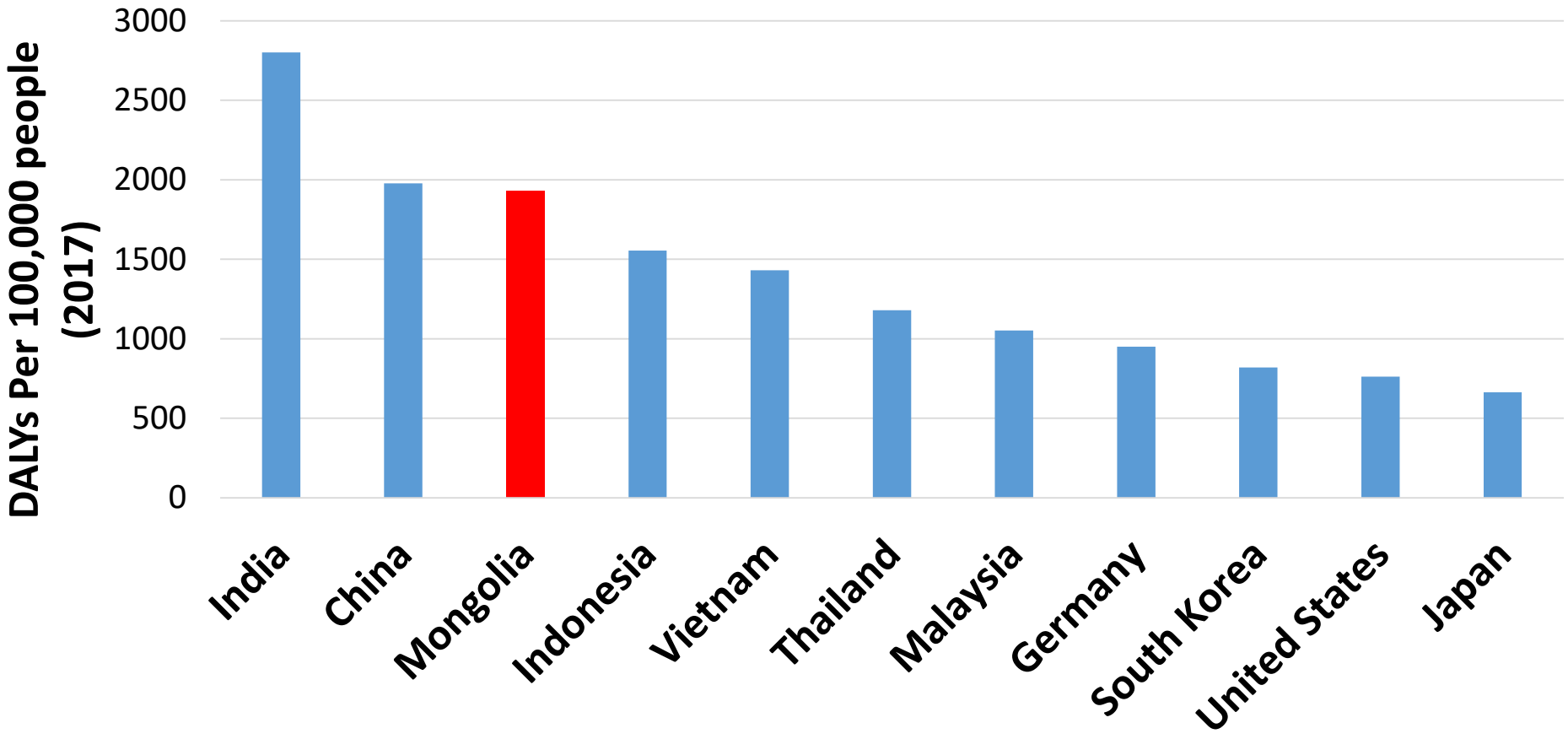
Co-benefits type wastewater treatment will lead to significant reductions in GHG and COD



Source: MOEJ, 2015

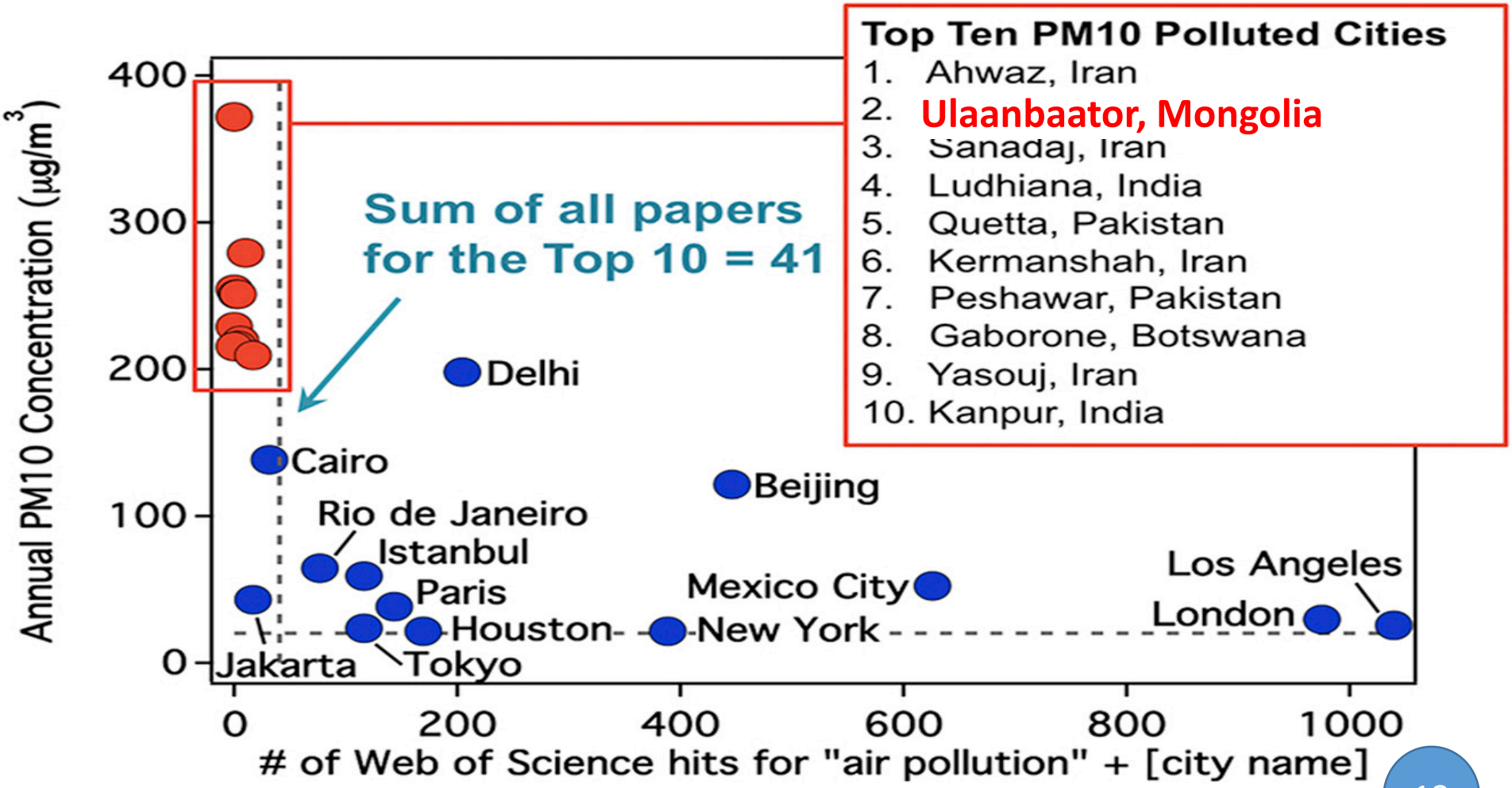
Cooperation with Mongolia

Number of DALYs from Air Pollution in Select Countries in Asia (2017)



Source: Global Burden of Disease Study 2017

Ulaan Baatar's air pollution problems have not received significant amount of attention



Source: Hasenkopf et al, 2016

Sources of Air Pollution in Mongolia

Sources: Ulaanbaatar Clean Air Project (UBCAP),
19th CAREC Energy Sector Coordinating Committee Meeting (2015)

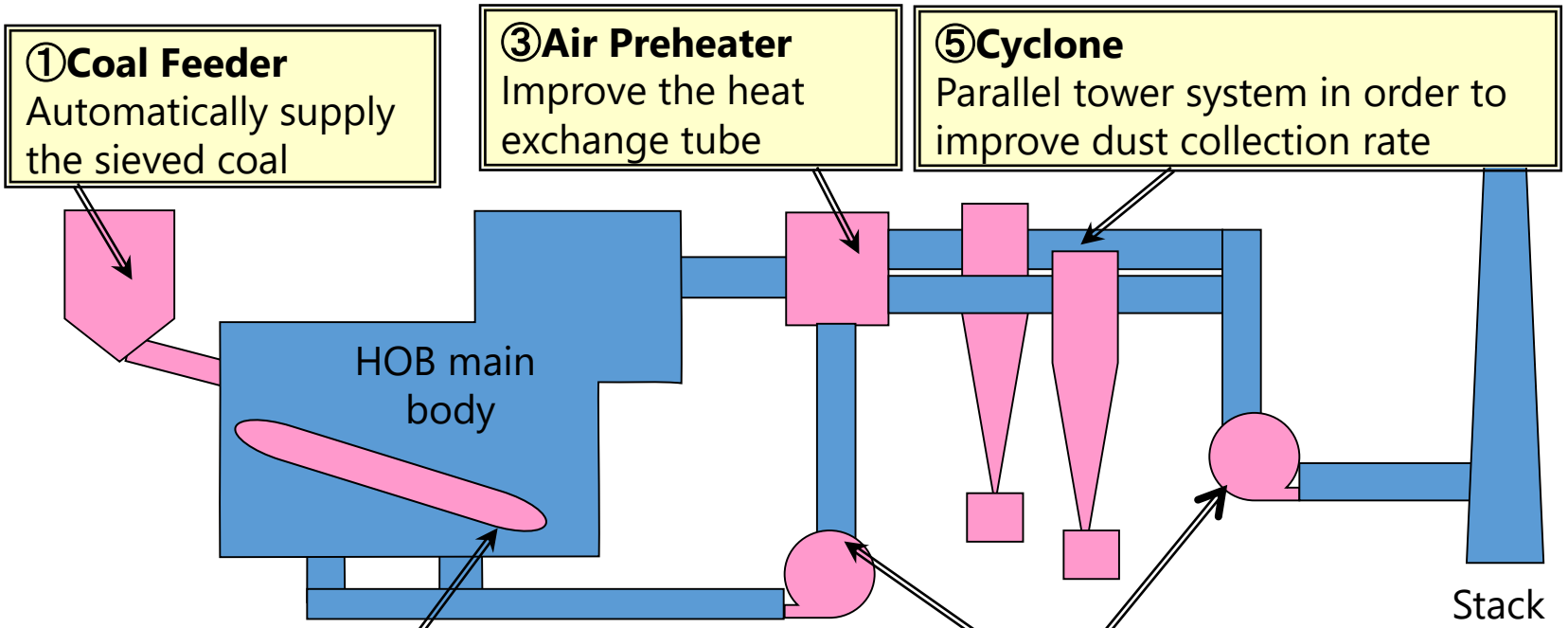
Co-benefits approach cooperation with Mongolia

- Improvement and modification of Heat Only Boiler (HOB, 0.7MW) auxiliary unit and the boiler main body, etc. were conducted, and co-benefits effects were evaluated.

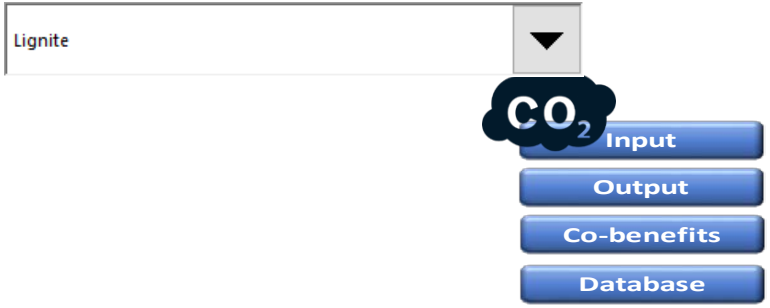
Project site:
The No.65 school, Ulaanbaatar

Modified HOB in Co-benefits project

- Main body is manufactured in Mongolia（MUHT design basis）
- Auxiliary unit is made in Japan (part of **pink** in the below figure)



⑥ Coal Storage Area
Attach the roof for the rain protection

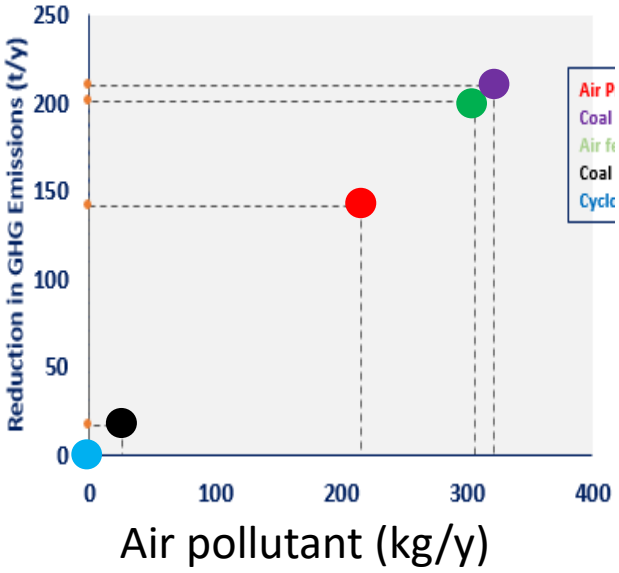


- **A simple model is being developed To help quantify the benefits of the Heat Only Boiler**

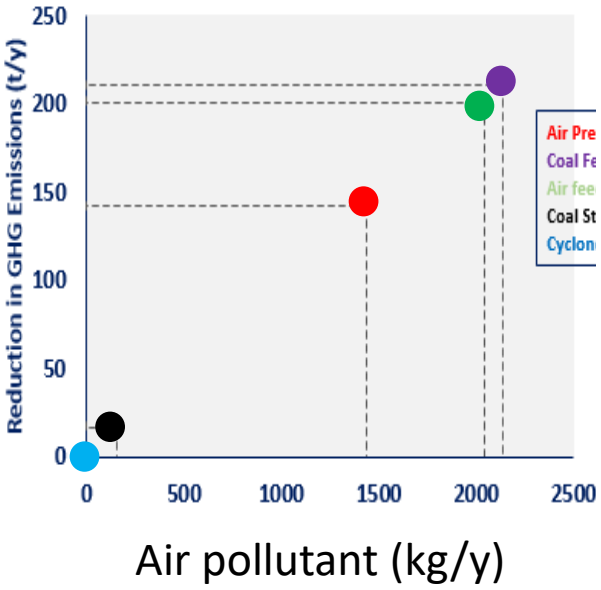
Source: MOEJ, IGES and Kyushu University, 2019

The improved HOB will lead to significant reductions in multiple pollutants

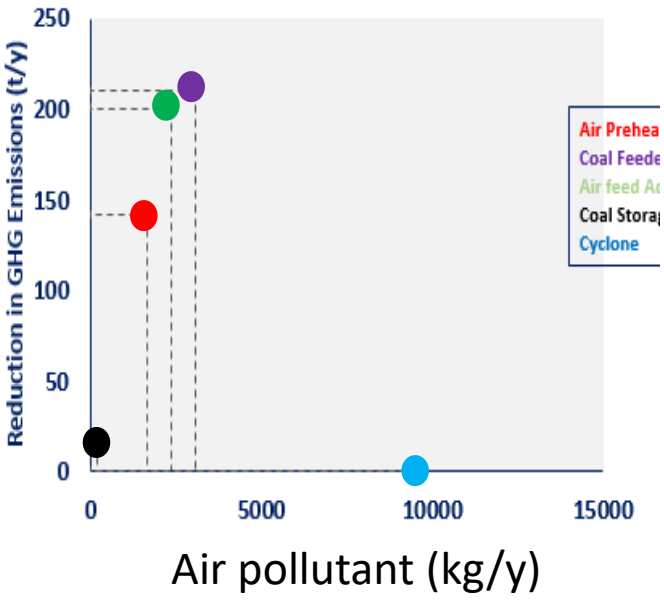
GHG - NOx



GHG – SO_2



GHG – PM



Coal feeder Air feed adj. Air preheater

Coal storage Cyclone

Key Messages

- The MOEJ has been taking the lead on collaborative co-benefits projects for more than a decade
- Over that period, it has increasingly moved from providing knowledge on co-benefits to implementing practical projects that can achieve them
- These projects can reduce environmental pollution while improving health and savings lives; an added benefit is they help achieve climate goals
- Scaling up these projects will be an important next step; tools such as the HOB co-benefits calculation tool can help in this regard
- An additional area of need is understanding the impacts on other socioeconomic concerns