Environmental and Social Co-benefits of Managing Air Pollution and Climate Change in Asia A Review of Case Studies

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OUTLINE

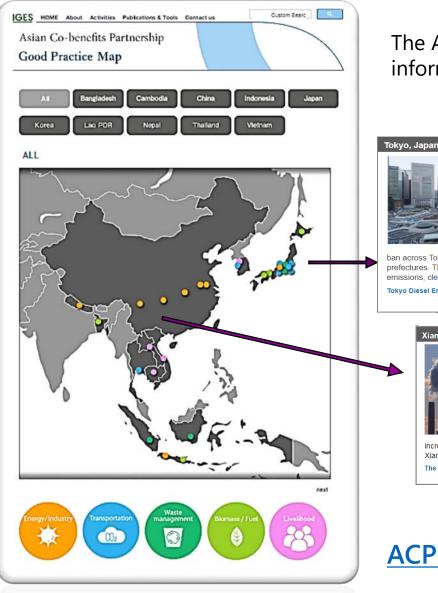
Implementation of Co-benefits

Good Practice Map in Asian Co-benefits Partnership (ACP)

Social Co-benefits

Harnessing Climate Change Mitigation Initiatives to Benefit Women

CO-BENEFITS IMPLEMENTATION



The ACP Good Practice Map provides users with important information on co-benefits in key sectors in Asia.

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Faced with growing citizen pressure to reduce mobile source air pollution, the Tokyo Metropolitan Government (TMG) took a step-by-step approach toward strengthening air pollution policy in the early 2000s. This began with the "Say No to Diesel Vehicles" campaign and evolved into a

ban across Tokyo on the use of diesel vehicles that spread to nearby prefectures. These efforts helped bring down particulate matter (PM) emissions, cleaning the air while mitigating near-term climate change.

Tokyo Diesel Emission Control



Xiangtan, located in central Hunan Province, is a resource-intensive industrial city and an important base for both the provincial and national economy; meanwhile, its heavy reliance on industries has caused Xiangtan to experience severe air and water pollution. To achieve its 'blue sky and clean water' action plan, Xiangtan policymakers need to be

Xianotan. The Case of Xiangtan, China.pdf

ACP Good Practice Map

Background

Toyama is located on the Sea of Japan in the Chūbu region. resulted in a hollowing out of the city centre. This, in turn, As of 2015, the city had a population of 418,957 and a total raised the administrative and operational costs of managing area of 1,241.85 square kilometers. In the early 2000s, the the transport system and increased GHG emissions (Mori, city's decreasing population and aging society led to a heavy 2013). For example, automobile dependency measured in dependence on automobiles and a corresponding decline terms of the number of trips grew to 72.2% in 1999 from in public transport. The combined impact of these changes 52.5% in 1983 (Awashima, 2009).

The Co-benefits of Transport Planning in Toyama

Toyama set up a Compact City Development Group in 2002 to address many of the above issues. To make the city more compact, the group employed a polycentric approach that linked multiple interconnected small cities and facilities (Fujimoto, 2008) (Figure 1). The compact city strategy consisted of three pillars: 1) revitalising public transport; 2) encouraging the relocation of residents and business to zones along public transport corridors, and 3) re-energising the city centre (Runzo-Inada, n.d.).

Toyama has also gradually strengthened its public transport network with the use of existing railway lines. This started with the launching of a Light Rail Transit (LRT) line in the northern part of the city in 2006. The LRT covers 7.6 kilometers with 13 stations, and has an average travel time of 25 minutes from origin to destination. To improve the LRT's infrastructure, five new stations were added, low carriage floors were introduced, and the stations were made wheelchair accessible. More frequent trains and longer hours also improved the LRT's operations. In addition, a preferential fare for elderly was introduced. In consequence, the ridership of the new LRT more than doubled on weekdays and grew by 3.5 times on weekends. The number of elderly passengers increased sharply after the opening of the LRT (Toyama City, 2014).

A key element in making the city more compact was the conversion of a local railway (IR Toyama Port Line) into the aforementioned LRT system based on a public-private partnership (PPP). In this case, the public sector constructed the infrastructure and the private sector managed the operations. Other changes to the city's infrastructure also helped make the city more compact. For of a new loop-line section that connected the two existing instance, a connection linking the lines in the north and



Figure 1 The organisation of a compact city and its public transport system

centre of Toyama was improved with the renovation of infrastructure for the recent launch of the Hokuriku Bullet Train (Figure 2).

Compact City and Public Transport

The next step in the city's public transport reforms was the extension of the tram line into a loop line, an undertaking meant to revitalise the city centre by improving mobility. This extension involved the addition tram stations. The loop line opened on December 23,





Chongging, China



The energy and carbon intensity targets included in China's 11th and 12th five-year plans have helped reduce emissions from heavy industry and had additional positive impacts on air quality. Recognizing the potential for co-benefits, China's Ministry of Environmental Protection has highlighted projects that can

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simultaneously control air pollution and greenhouse gas emissions. One of the key 'co-control' demonstration projects is the Fucheng Cement Waste Heat Power Generation project in Chongging.

Waste Heat Power Project in Chongqing, China

Toyama City, Japan



Toyama set up a Compact City Development Group in 2002 and has been promoting its compact city policies since then. By integrating the three dimensions of sustainable development, Toyama aims to create value in the environmental realm as well as social and economic realms. This unique approach suggests

the potential of local transport policies to go beyond emission reductions to achieve other economic and social co-benefits.

Compact City and Public Transport in Toyama City, Japan

Kawasaki City, Japan



Starting in 2000, Kawasaki began to refine its waste management approach with new initiatives focused on the 3Rs: Reduce, Reuse, and Recycle. In 2005, the Rubbish Management Fundamental Plan, known as the Kawasaki Challenge for 3Rs,

Waste management

called for Kawasaki to become a 'recycling-based' city promoting collaboration among citizens and businesses based on the 3Rs. These efforts ushered in many additional benefits beyond the reduction of waste.

Waste Management in Kawasaki City, Japan

CO-BENEFITS

52,225t of $CO_2 \downarrow$ 590.2t of $SO_2 \downarrow$

Challenges & Solutions

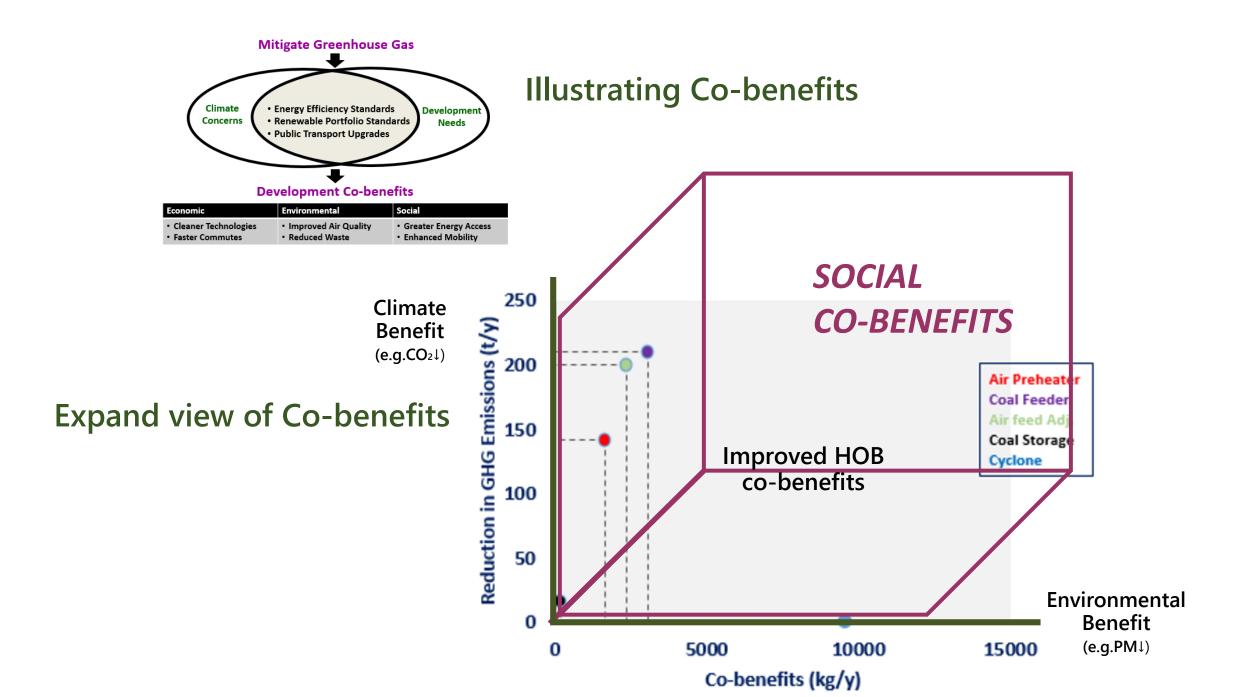
Lack of operational coordination mechanism ← Effective communication required

SOCIAL CO-BENEFITS

Fostering social capital / Health , safety and security / Job creation

317.5t CO2 \downarrow = CO2 absorbed by 40.7 ha of forest Securing sufficient financing for infrastructure construction and operations

Incinerated waste \downarrow GHG 35% \downarrow (167.255t in 2007, 109.538t in 2015) Recycling rate \uparrow (19.5% in 2003, 29% in 2013) Limited long-term budget ← Stable procurement practices / Promoting of waste separation and green purchasing

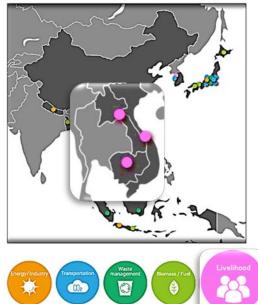


Good Practice Map Livelihood



All	Bangladesh	Cambodia	China	Indonesia	Japan
Korea	Leo PDR	Nepal	Thailand	Vietnam	

ALL



Lao PDR



Since 2015, SNV and the Institute for Global **Environmental Strategies** (IGES) have been involved in the Asian Development Bank (ADB) project, Harnessing **Climate Change Mitigation** Initiatives to Benefit Women.

The project supported a set of pilots that engaged women in the construction, marketing and sales of improved cookstoves. The project not helped only mitigate climate change but brought important livelihood benefits to women in Lao PDR.

Gender Integration in Supply of Improved Cookstoves



Thousands of households in Dong Hoi, Viet Nam are raising pigs without appropriate manure treatment facilities such as biogas digesters. In addition, large gaps have been identified in the knowledge of digester end-users, particularly regarding the use of bio-slurry

case illustrates how actively engaging women in a biogas pilot project can help remedy these problems, mitigate climate and empowering

New Roles for Women in Biogas Supply Chain

Cambodia

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The Asian Development Bank's (ADB) project, Harnessing **Climate Change Mitigation** Initiatives to Benefit Women, aims to help women work in productive roles in mitigating climate change. In Cambodia, the project brought women into the supply chain for advanced cookstoves, tapping a source of labor that is frequently

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overlooked when it comes to marketing and selling energy efficient technologies. This approach demonstrates the feasibility of achieving both environmental (climate and other pollutants) as well as social co-

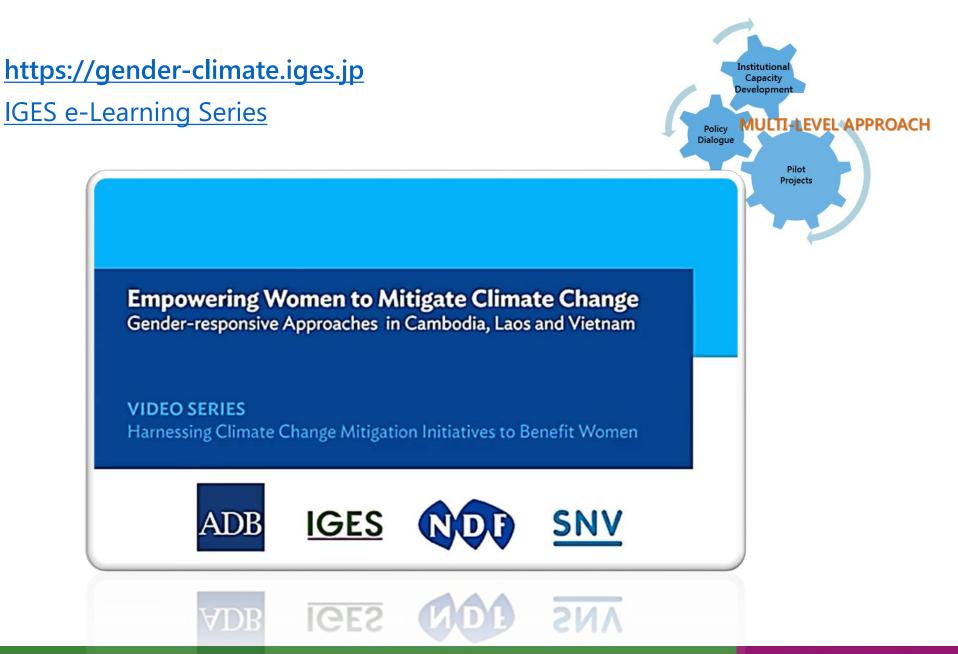
Advanced Clean Cookstove Supply Chain

benefits.



The pilot projects involved women in concrete on-the-ground initiatives that built knowledge and skills to mitigate climate change while earning other livelihood benefits. Simultaneously, the institutional capacity building and policy mainstreaming empowered women and women's groups, engaging them in decisions that could help achieve longer-lasting results.

> Achieving **CO-BENEFITS** through PARTICIPATORY **GOVERNANCE**



KEY MESSAGES

- Implementation of co-benefits initiatives is as important as the quantitative analysis of co-benefits for policy change.
- More attention has focused on the interaction between climate change and the livelihoods of the underprivileged.
- Achieving co-benefits require recognising social co-benefits of climate change.
- Social co-benefits range from green job creation to gender equity.
- Achieving co-benefits through participatory governance can deliver long-lasting success.