

Breathing Easier: Examining Multilateral Efforts

Research Paper

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ABSTRACT

Air pollution has severe economic and social consequences, especially in developing economies. Air pollution in the People’s Republic of China (PRC) has resulted in a serious public health crisis and massive economic losses in the early 2010s. As key players in addressing air pollution, micro, small and medium-sized enterprises (MSMEs) are usually faced with challenges in accessing affordable finance for green transformation. The major difficulties were identified as insufficient public financial resources, lack of credit history, and shortage of green project experience. This study analyzes the government policies and a PRC-Asian Development Bank (ADB) cooperation investment program to show how enabling policies, flexible program design, tailor-made financing modality, advanced technologies, and knowledge support can help in combating air pollution and mitigating climate change, providing references, experiences, and lessons beneficial for developing countries.

BACKGROUND

Nowadays, the expansion of various industries, including manufacturing, construction, building, and transportation, often drives rapid economic growth and industrialization in developing countries. These industries are critical in generating job opportunities and attracting people to urban areas, where they can benefit from better infrastructure, healthcare, and education. However, the process of urbanization and industrialization is usually accompanied by significant negative impacts on air quality. The concentration of pollutants in the air, including PM_{2.5}, NO_x, SO₂, and O₃, can have severe consequences for public health and

»PRC was one of the countries with higher levels of ambient air pollution among the G20 peers in the early 2010s.«

the environment. According to The Global Burden of Disease Study 2019, air pollution remains one of the leading risk factors for attributable disability-adjusted life years for individuals (Murray et al., 2020). From an environmental perspective, air pollution and climate change are two sides of the same coin and must be addressed together as they share overlapping causes and effects (UNEP, 2019).

PRC was one of the countries with higher levels of ambient air pollution among the G20 peers in the early 2010s. In 2013, PRC experienced a severe air pollution crisis, often called the “airpocalypse.” The levels of $PM_{2.5}$ soared to hazardous levels,² which led to school closures, flight cancellations, warnings to avoid outdoor activities, and a spike in respiratory disease cases (Ji et al., 2014). The cost of air pollution in China was estimated to be around USD 1.4 trillion in 2013 (OECD, 2014). Since then, the PRC has implemented several measures to improve air quality, significantly decreasing air pollution at the national and local level. The government set ambitious targets to reduce air pollution in the Comprehensive Action Plan on Air Pollution Prevention and Control launched in 2013,³ enforcing more

stringent emissions standards for vehicles and factories, increasing investment in renewable energy, and closing some of the most polluting factories. In addition, the government promoted public transport, implemented measures to reduce coal consumption, and encouraged the use of renewable/cleaner fuels. The government reiterated its commitments to improving air quality in the national 13th Five-Year Plan (2016-2020) with mandatory targets of reducing the concentration of $PM_{2.5}$ in 338 cities by 18% and increasing the ratio of good air quality days from 76.7% in 2015 to 80% in 2020. In June 2018, the government issued a Three-Year Action Plan on Winning the Blue-Sky War (the “Action Plan”), specifically aiming to reduce the total air pollution in the Beijing-Tianjin-Hebei (BTH) region and its surrounding areas. Following the Action Plan, many local governments adopted air pollution reduction strategies in 2013. For instance, Hebei and Shandong governments launched provincial air pollution prevention and control plans (Heibnews.cn, 2013; Shandong Provincial Government, 2013) and committed to a 25% and 35% reduction in $PM_{2.5}$ concentrations by 2017, respectively. The major control regulations in China since 2013 can be found in Figure 1 (Lu et al., 2020). The unprecedented determination in policy reforms has contributed to the rapid decrease in air pollution levels, as shown in Figure 2 (Health Effects Institute, 2019).

Moreover, environmental policies have evolved with the changing context of air quality improvement. For example, previously, policies were mainly to decrease the dominant source of $PM_{2.5}$ from primary emissions (e.g., industrial production, vehicle exhaust and biomass combustion),

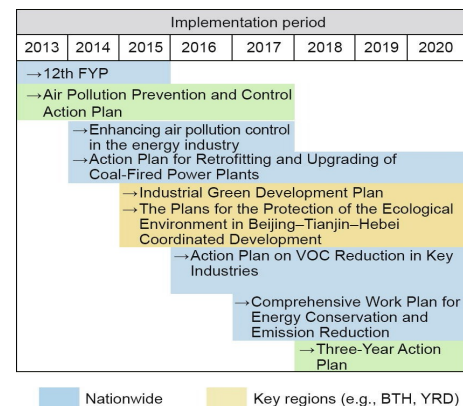


Figure 1. Summary of the major control regulations in China since 2013. Source: Lu, X., Zhang, et al. (2020). Progress of air pollution control in China and its challenges and opportunities in the ecological civilization era. *Engineering*, 6(12), 1423-1431.

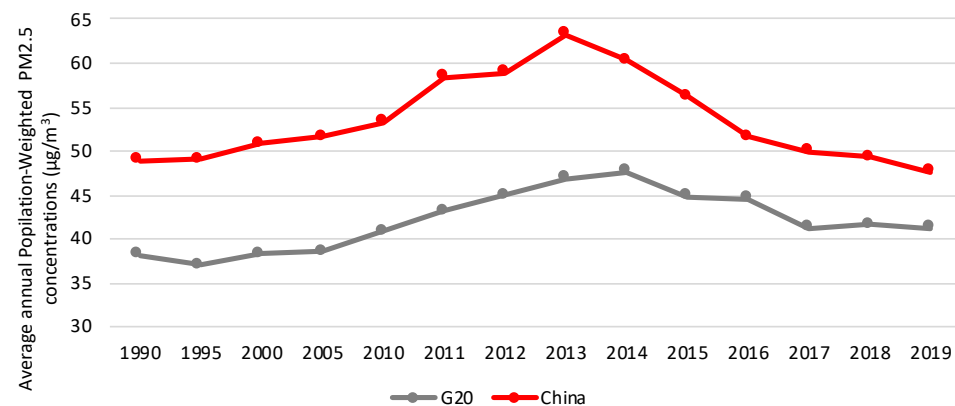
but now the dominant source has shifted to secondary pollutants formed in the atmosphere through chemical reactions of precursor pollutants and transported over long distances. Responding to this change, air pollution policies are now expanding in scope, such as the inclusion of Yangtze River Delta (YRD) beyond the greater BTH region.

CHALLENGES

MSMEs are at the vanguard of this Blue-Sky Protection Action Plan with its two-sided significance. In PRC, MSMEs play a dominant role in the national economy, accounting for over 60% of GDP, 50% of tax and 79% of job creation (OCED, 2020). Unfortunately, MSMEs were reported responsible for approximately 60% of industrial pollution (Yao, 2012) in the BTH region, the forefront of combating air pollution. Despite their significant potential role in promoting the green transition, in

Figure 2. Average Annual Population-Weighted $PM_{2.5}$ concentrations in China From 1990 to 2019.

Source: Health Effects Institute (2019). State of Global Air 2019, www.stateofglobalair.org.



2013, MSMEs received only 22% of total bank loans (The Central People's Government of the Republic of China, 2013).

MSMEs face major challenges in accessing affordable green financing:

- Insufficient financing sources in the market
- MSMEs' lack of credit history or collateral
- Absence of experience in conducting green projects

To help MSMEs overcome the challenges above, The China Banking Regulatory Commission (CBRC) issued Green Credit Guidelines to urge the banking institutions to adopt green credit and sustainable finance management in 2012 (The Green Growth Knowledge Partnership). The effort was further strengthened in 2014 by introducing the Green Credit Key Performance Indicators for monitoring and evaluation. However, without a good credit history, it is difficult for commercial banks to control their risks and invest in MSMEs. Policy actions alone will not solve all problems. As a result, seeking international cooperation, which can bring holistic support, could be a promising approach to better MSMEs' involvement in tackling air pollution.

In the PRC government's 13th Five-Year Plan, approximately CNY 6.6 trillion in investment was planned for low-carbon and clean energy targets (ADB, 2016). The vast demand for financing can never be satisfied by public resources alone. The State Council of the PRC, the People's Bank of China, the China Banking and Insurance Regulatory, and other government agencies have issued several guidance notes and notices on enhancing financial

services and credit support for MSMEs throughout the years (The Central People's Government of the Republic of China, 2013, 2018, 2022). One major challenge faced by the government is to design innovative financing mechanisms that can efficiently use public resources by leveraging private capital. This requires a deep understanding of factors that constrain private capital participation in green MSMEs.

SOLUTIONS

In 2015, the government of the PRC requested ADB's financial assistance during an ADB country programming mission (ADB, 2015), resulting in the establishment of a cluster lending program. As a leading innovative finance project in the cluster, the Green Financing Platform (GFP) Project was primarily aimed at mobilizing local capital for air quality improvement in the greater BTH region⁴ by leveraging ADB's loan proceeds, which was further expanded to the Yangtze River Delta (YRD) region.⁵ The GFP initiative was the first of its kind, dedicated to the greater BTH region and targeted emission reduction from MSMEs in sectors such as energy, transport, urban and agriculture.

Main contributions of GFP:

- Sustained policy reforms, flexible program design for better project leverage effect
- Tailored loan modality, innovations in credit enhancement
- Strengthened capacity, knowledge transfer for sustainable operations

To support the government's policy on strengthening financial services access for MSMEs and wide-area-based actions, ADB

launched a GFP scale-up project in 2020 (footnote 5). The two projects in total will leverage a green financial investment of about CNY 38 billion over 15 years through EUR 585 million (about CNY 4.32 billion) ADB loans. By July 2022, ADB's loan proceeds were fully disbursed CNY 2.79 billion and supported the 47 investment subprojects and 795 guarantee subprojects with a total guarantee of CNY 1.19 billion. The aforementioned 842 subprojects have driven social investment of about CNY 11.19 billion in total. Among them, a total of 792 MSME projects have been supported, providing a total of CNY 643 million in financial support.

The GFP project adopted the financial intermediation loan modality, which is the most suitable instrument that secures broad coverage when aggregating diverse projects from various sectors. The state-owned China National Investment and Guaranty Corporation (I&G) was selected as the executing agency to set up the GFP. During the implementation, ADB's design and monitoring framework, comprising comprehensive performance indicators of co-financing scale, pollution reduction goals, and the number of low-emission projects funded, was the key driver motivating I&G to proactively facilitate, choose subprojects and carry out innovations for air quality improvement. On the one hand, by fully using I&G's strength, the platform can provide credit enhancement to all stakeholders in qualified low-emission projects, largely addressing MSMEs' chronic issue of lack of credit. Customized credit enhancement was adopted to accommodate different subprojects. In a traditional fashion of credit enhancement, I&G can provide credit guarantees

and introduce financing sources from commercial banks, funds, and trusts. The customized credit enhancement supports various novel financial instruments such as green bonds, green notes and green Asset-Backed Security (ABS), significantly lowering the financing cost for MSMEs. On the other hand, the GFP project introduced a fintech-based online financial platform for MSMEs and individual finance by using real-time big data, artificial intelligence and machine learning. This significantly reduced transaction costs and challenges for

»MSMEs were reported responsible for approximately 60% of industrial pollution.«

MSMEs and individual finance by covering credit application, appraisal and monitoring, thus enhancing finance inclusiveness. The GFP project supported rural household rooftop solar photovoltaic subprojects, through provision of credit guarantees and the adoption of a fintech-based online platform, to tackle the challenges of farmers' lacking credit history and the dispersive geographical locations of users. The subproject is expected to help 3,000 households build distributed photovoltaic power plants on their own rooftops and the total amount of photovoltaic power generation will be about 1.6 billion kWh, reducing CO₂ emissions by 1.6 million tons (I&G, 2022).

To effectively promote green financing, it is imperative to not only offer suitable financial products, but also to strengthen the capacity of financial institutions and MSME loaners. ADB has implemented several capacity-building initiatives, which have been instrumental in the success of the project. By providing financial intermediaries with the necessary tools and knowledge, they can effectively manage and execute green and pollution-reduction projects, resulting in sustainable operations. Additionally, capacity-building efforts can help MSMEs overcome financing difficulties and high costs by providing com-

»The main contributions of the Green Finance Platform include a flexible program design for a better project leverage effect and sustainable operations.«

prehensive training in areas such as clean energy technology development, green project screening, economic and financial sustainability analysis, and environmental and social impact assessment. As a result of these efforts, financial institutions and MSMEs can improve their capacities and increase their chances of securing external financing.

LESSONS LEARNED

The key features of the PRC-ADB cooperation on GFP projects in addressing MSMEs' financing difficulties that can be shared among developing countries include:

Strong government commitment and flexible design of the assistance program

Successful implementation of international assistance projects requires the government's strong commitment and the international organization's adaptive cooperation. On one side, the government of the PRC has shown a strong commitment to tackling air pollution, with ambitious targets and policies to reduce emissions. Relevant government agencies have been relentlessly making efforts on policy strengthening and reform, aiming at reinforcing the availability of financial services to MSMEs. With such policy continuity, international assistance projects can be free from one of the major risk sources – political risk – for a smooth and efficient implementation. On the flip side, the project design needs to be flexible to accommodate evolving government policies and regulations. A swift scale-up project of the GFP by ADB demonstrated a concrete case for sustained international cooperation. The experience from the PRC-ADB cooperation sheds light on addressing the MSMEs' financing difficulties under an international scheme.

A tailor-made lending modality and suitable management to encourage proactive actions

A well-customized lending modality and management scheme has been proven to be the key to success. For the successful operation of the GFP, a suitable lend-

ing modality – a financial intermediation loan – was adopted because it can best cover multiple sectors connected to air quality improvement. As a result, the financial intermediary's capacity and management became crucial factors. I&G, a financial intermediary with impressive records in investment and guaranty operations, selected by the PRC government, was a good start. On top of that, ADB conducted careful management actions upon a well-selected performance indicator set. The management scheme successfully incentivized the financial intermediary to foster green projects proactively. Innovations in increasing credit enhancement solutions and the application of digital platforms alleviated MSMEs' difficulties in accessing affordable finance and can be referenced for practice in other developing countries.

Making capacity building an essential objective of the project

Capacity building has proven to be an effective means of continuous GFP operation and co-financing. As international assistance programs cannot last forever and the demand for development will never cease, capacity building was not a by-product, but rather a main objective in ADB's programs. In GFP projects, detailed monitoring indicators such as the number of project appraisals for co-financing with commercial banks, amount of key personnel trained, and capacity building events conducted were well-planned in the first place. Through all these management actions, ADB has promoted international management experiences such as Environment and Social Management System implementation, and Environment, Social

and Governance investment standards for local practice. The capacity building actions reached the grassroots level as well. The knowledge passed along from the financial intermediary to MSMEs in setting up green projects helps them increase the opportunities for accessing finance from other resources.

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- ¹ A type of fine particulate matter that can penetrate deep into the lungs and cause respiratory and cardiovascular health problems.
- ² On January 12, the level of fine airborne particulates in Beijing reached 993 micrograms per cubic meter. The World Health Organization recommendation at the time was a maximum of no more than 25 (Wright, 2013).
- ³ State Council, 2013. Action Plan on Prevention and Control of Air Pollution. Beijing, China. The Action Plan aimed at a nationwide decrease by 10% by 2017 of the urban ambient concentration of PM_{2.5} compared to 2012 levels. It also included stringent requirements for the three main urban and industrial regions, the Beijing-Tianjin-Hebei region, the Yangtze River Delta, and the Pearl River Delta, which would need to decrease the PM_{2.5} concentrations by 25%, 20%, and 15% respectively, from the 2012 levels by 2017.
- ⁴ The region includes Beijing and Tianjin municipalities; the Inner Mongolia Autonomous Region; and Hebei, Henan, Liaoning, Shandong, and Shanxi provinces.
- ⁵ ADB's GFP scale up project approved in 2020 expands to YRD region comprising Anhui, Jiangsu, Zhejiang provinces, and Shanghai Municipality.