



A RAIA profile on: Climate Activist

Ma Jun

Part two of a six-part series on climate leaders ahead of the 2026 United Nations Climate Change Conference

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List of Abbreviations

CATI	Corporate Climate Action Transparency Index
CITI	Corporate Information Transparency Index
CNEMC	China National Environmental Monitoring Centre
EEB	Ecology and Environment Bureau
ETS	Emissions Trading System
GCA	Green Choice Alliance
GSCI	Green Supply Chain Initiative
IPE	Institute of Public and Environmental Affairs
IUCN	International Union for Conservation of Nature
PITI	Pollution Information Transparency Index
MEE	Ministry of Ecology and Environment
NGO	Non-Governmental Organisation
NDRC	National Development and Reform Commission
NRDC	Natural Resources Defense Council
WHO	World Health Organisation
MNR	Chinese Ministry of Natural Resources
PM2.5.	Fine particulate matter which are suspended in the air with a diameter of 2.5 micrometers or smaller

Ma Jun

Introduction

Ma Jun is a Chinese environmentalist who has worked on strengthening pollution accountability in China since the 2000s. Through the creation of public environmental databases and transparency tools he has become one of China's most influential figures in environmental governance.

Ma Jun's commitment to data transparency was shaped by witnessing China's environmental degradation firsthand and studying how it could be addressed. During the 1990s, Ma spent seven years reporting across China for the South China Morning Post. He encountered polluted rivers, deforestation, and communities dependent on contaminated water.¹ These experiences led to his 1999 book *China's Water Crisis*. In 2004, during the Yale World Fellows Program, Ma studied Western environmental protection systems and became convinced that public access to information was the missing tool to reduce pollution in China.²

Chinese publishers rejected the next book he wanted to publish, which dealt more broadly with the sustainability of China's development model. They argued that it went too far in exposing environmental problems and corporate violations.³ He concluded that another book was not the most effective way to create change—a book would reach only a limited audience and quickly become outdated. Instead, he decided to build a living information system.⁴

To make that possible, in 2006, he founded the Institute of Public and Environmental Affairs (IPE), a Beijing-based NGO dedicated to making environmental information publicly accessible.⁵ Through the IPE, in 2007, Ma

¹ V. Walt, 'It Would Be Very Hard to Fight Us': How Ma Jun and IPE Became the Corporate World's Go-To Pollution Trackers', *Fortune*, 2021, <https://www.fortune.com/2021/10/15/climate-change-chinese-factories-pollution-tracking-ma-jun-ipe/>

² L. Moustakerski, 'Publishing Pollution Data in China: Ma Jun and the Institute of Public and Environmental Affairs', Columbia Case Consortium, 2014

³ *Ibid.*

⁴ J. Haffner, 'Innovation: Ma Jun: Information Empowers', Carnegie Council for Ethics in International Affairs, 2013, <https://www.carnegiecouncil.org/media/series/policy-innovations/policy-innovations-digital-ma-gazine-2006-2016-innovations-ma-jun-information-empowers>

⁵ J. Landreth, 'A rare environmental success story: The Blue Map app and its 3.8 million Chinese users - Q&A with Ma Jun', 2 May 2023, <https://thechinaproject.com/2023/05/02/a-rare-environmental-success-story-the-blue-map-app-and-its-3-8-million-chinese-users-qa-with-ma-jun/>

launched China's first public databases tracking water and air pollution violations committed by corporations. These later developed into the Blue Map, a digital platform mapping real-time pollution emissions across China.⁶

The IPE has since expanded its work through several initiatives. The Pollution Information Transparency Index (PITI) evaluates Chinese cities on their environmental disclosure practices.⁷ The Green Supply Chain Initiative (GSCI) encourages multinational corporations to improve the environmental performance of their Chinese supply chains.⁸ The IPE's Corporate Information Transparency Index (CITI) then evaluates more than 700 GSCI participant companies on how they manage the performance of their suppliers in reality.⁹

China's environmental performance has a global impact because China produces 65% of the world's clothing and accounts for roughly one-third of global carbon emissions.¹⁰ As a result, Ma's efforts to improve the environmental performance of Chinese companies matter not only for China but also for the rest of the world.

The IPE was founded just as China began making more environmental information publicly available, giving Ma Jun a growing amount of data to work with. When he founded the IPE in 2006, data was scattered across local websites with no centralised public access.¹¹ As government disclosure requirements expanded—most notably through the 2008 Measures on Open Environmental Information,¹² the 2013 Air Pollution Prevention and Control Action Plan,¹³ and the 2014 revised Environmental Protection Law¹⁴—Ma Jun's tools evolved in response.

⁶ *Ibid.*

⁷ R. Wang, 'Race to the Top: Public Oversight and Local Environmental Information Transparency in China', *Cities*, May 2024, <https://doi.org/10.1016/j.cities.2024.104895>

⁸ *World Economic Forum*, "Ma Jun - Agenda Contributor", <https://www.weforum.org/stories/authors/ma-jun-6e1f944068/>

⁹ Media OutReach Newswire, '2024 CITI & CATI Index Results Announced: Luxshare Precision Continues to Lead in Green Supply Chain' (23 January 2025) <https://www.media-outreach.com/news/hong-kong/2025/01/23/357758/2024-citi-cati-index-results-announced-luxshare-precision-continues-to-lead-in-green-supply-chain/>

¹⁰ CWR, 'The Environmental Cost of Clothes', 18 April 2011 <https://cwrr.org/resources/analysis-reviews/the-environmental-cost-of-clothes/>

¹¹ A.J. Mol, G. He, L. Zhang, 'Information Disclosure in Environmental Risk Management: Developments in China', *Journal of Current Chinese Affairs*, 2011

¹² S. Ziying, 'How should businesses in China react to new environmental disclosure requirements?', 21 February 2022, <https://dialogue.earth/en/business/how-should-businesses-in-china-react-to-new-environmental-disclosure-requirements/>

¹³ *Energy Policy Institute at the University of Chicago*, 'China: National Air Quality Action Plan (2013)', 23 August 2023, <https://aqli.epic.uchicago.edu/post/china-national-air-quality-action-plan-2013>

¹⁴ Y. Ye, X. Yang, and L. Shi, 'Environmental Information Disclosure and Corporate Performance: Evidence from Chinese Listed Companies', 15 November 2023, <https://pmc.ncbi.nlm.nih.gov/articles/PMC10709013/>

The IPE Pollution Database centralised what little data existed; the Blue Map made the growing volume of government data accessible in real time;¹⁵ and the GSCI, CITI, and PITI used the expanding information to measure corporate and government performance.

Through these initiatives, the IPE has exposed more than 3.2 million pollution violations,¹⁶ motivated over 31,000 suppliers to address environmental issues,¹⁷ and helped reduce pollution violations by 37% in cities participating in PITI.¹⁸ The air-quality improvements linked to PITI were estimated to prevent around 2,008 premature deaths annually across participating cities.¹⁹

Ma Jun pursued these reforms by working within, rather than against, China's political system. By relying exclusively on government-disclosed information instead of conducting independent investigations, the IPE was able to expand its influence while avoiding the political confrontation that has led many Chinese NGOs to face restrictions or closure.²⁰

Ma has since gained international recognition for this approach, receiving honors including the Ramon Magsaysay Award, the Goldman Environmental Prize, and the Skoll Award, as well as being included in TIME Magazine's 100 Most Influential People list in 2006.²¹

This report argues that Ma Jun is an environmental activist focused on social mobility who frames environmental protection as a civil right rather than a political cause. He promotes transparency on pollution issues in China and advances environmental reform by working within the country's political system rather than against it.

The remainder of this report is structured as follows. Section two examines Ma Jun's Stake: the three major environmental challenges shaping his work—water pollution, air pollution, and biodiversity loss. Section three explores his Defining Moment: how his experiences as a journalist during the 1990s transformed personal interest into a lifelong, globally recognised career. Section four analyses

¹⁵ *Khabar Asia*, 'From Smog to Sustainability: How Open Data is Fueling China's Green Revolution', 4 December 2023,

<https://khabarasia.com/opinion/20231204-from-smog-to-sustainability-how-open-data-is-fuelin-g-chinas-green-revolution/>

¹⁶ Ma Jun, 'Data Accountability and Growth: A Blue Map for Climate Action', 17 February 2025,

<https://www.chinadaily.com.cn/a/202502/17/WS67b2f5fea310c240449d5afe.html>

¹⁷ *World Economic Forum*, 'Ma Jun - Agenda Contributor',

<https://www.weforum.org/stories/authors/ma-jun-6e1f944068/>

¹⁸ L. Liu, M. Buntaine, B. Anderson, and B. Zhang, 'Transparency by Chinese Cities Reduces pollution violations and improves air quality', 4 April 2025,

<https://www.pnas.org/doi/10.1073/pnas.2406761122>

¹⁹ *Ibid.*

²⁰ *Ibid.*

²¹ *Chartwell Speakers*, 'Ma Jun - China ESG Expert Speaker Profile',

<https://www.chartwellspeakers.com/speaker/ma-jun/>

his Solutions: the major initiatives he developed, namely the Blue Map, the Green Supply Chain Initiative, and the CITI and PITI. Section five assesses the impact of these initiatives, examining their implementation status and real-world outcomes. Section seven outlines recommendations on how to improve the policies. Lastly, this report concludes by summarizing the report's findings and revisiting its central thesis, considering where it holds, where it falls short, and what limitations were uncovered.

Ma Jun's Environmental Stake

In the late 1970s, China introduced a series of economic reforms that accelerated industrialisation and urbanisation. These reforms transformed the country's economy and led to economic growth. However, they also gave rise to environmental challenges, particularly water pollution, air pollution, and biodiversity loss.

The expansion of heavy industry, manufacturing, energy production, and urban development placed great pressure on China's natural resources. Industrial wastewater from manufacturing factories and mining operations contaminated rivers and lakes, while coal-fired energy production and increasing vehicle emissions degraded air quality. At the same time, deforestation, infrastructure development, and land conversion led to habitat destruction and biodiversity loss.

It was within this context that Ma began his work as an environmental journalist. Through reporting across China in the 1990s, he witnessed the environmental consequences of rapid industrialisation firsthand. These experiences shaped his environmental priorities and inspired his later efforts through the IPE to make companies accountable for their environmental performance.

In a 2023 post-Conference of the Parties 28 discussion, Ma Jun outlined his environmental priorities in the context of the United Nations' triple planetary crisis. The framework identifies climate change, pollution, and biodiversity loss as the world's three interconnected environmental challenges.²² He argued that, in China, these challenges occur simultaneously and therefore require integrated solutions rather than being addressed in isolation.²³ In his speech, he explicitly identified water pollution, air pollution, and biodiversity loss as key environmental issues requiring coordinated action.

²² UNU, 'Addressing the Triple Planetary Crisis'. 21 May, 2026.

<https://unu.edu/conversation-series/addressing-triple-planetary-crisis>

²³ Y.Jia, L.Gao, and C.Zhang, 'Ma Jun, Founder of the Institute of Public & Environmental Affairs (IPE), on COP28', 25 December, 2023.

<https://www.ccgupdate.org/p/ma-jun-founder-of-the-institute-of>

Water Pollution

On a global scale, water pollution has been described as the presence of harmful substances such as excess nutrients, heavy metals, and toxic compounds in the water due to rapid economic development, industrialisation, and agriculture.²⁴ In China, water pollution began in the 1950s due to industrial development leading to the release of urban sewage and industrial discharge.²⁵ Since then it has continued to worsen, with major pollution of rivers beginning in the 1970s and continuing to worsen year by year.²⁶

Pollution worsens an existing scarcity problem. China contains 20% of the world's population but less than 7% of the world's freshwater resources, leading to shortages across large cities.²⁷ China faces significant regional imbalances in water availability, as shown in Figure 1. While around 50% of the population and 60% of the country's cultivated land are located in northern China, the region contains only 14% of the country's water resources.²⁸ This imbalance and rising water demand have led to a water crisis, as even in water-rich areas, pollution has decreased the amount of clean usable water.²⁹ Ultimately, access to clean water for various communities across China has been interrupted, and there are threats to public health due to the proliferation of disease-causing pathogens.³⁰

²⁴ NRDC, 'Water Pollution: Everything You Need to Know', 11 January, 2023,

<https://www.nrdc.org/stories/water-pollution-everything-you-need-know>

²⁵ W. Jusi, 'Water Pollution and Water Shortage Problems in China', December 1989

<https://doi.org/10.2307/2403696>

²⁶ *Ibid.*

²⁷ World Bank and Development Research Center of the State Council, *Urban China: Toward Efficient, Inclusive, and Sustainable Urbanization* (Washington, DC: World Bank, 2014)

<https://www.worldbank.org/content/dam/Worldbank/document/EAP/China/WEB-Urban-China.pdf>

²⁸ PennState College of Earth and Mineral Sciences, 'China: A National Water Emergency',

<https://courses.ems.psu.edu/earth103/node/905>

²⁹ SPICE, 'Water Issues in China', September 2006

https://spice.fsi.stanford.edu/docs/water_issues_in_china

³⁰ W. Tang, Y. Pei, H. Zheng, Y. Zhao, L. Shu, and H. Zhang, May 2022

<https://www.sciencedirect.com/science/article/abs/pii/S004565352200368X>

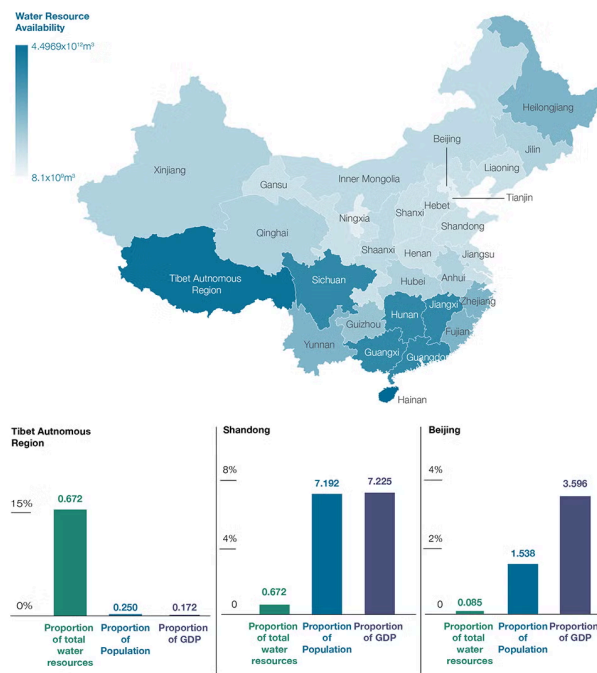


Figure 1: Distribution of Water Resources in China (2019) highlighting disparities between Northern and Southern regions³¹

Due to water pollution, half of China's population does not have access to clean water, and groundwater has been identified as contaminated in 90% of Chinese cities.³² It contains toxic levels of arsenic, fluorine, and sulfates, which are compounds that have been correlated with high rates of liver, stomach, and esophageal cancer. In addition, various projects that utilize groundwater supplies, such as irrigation, have led to overexploitation of groundwater supplies, which resulted in a 25% decline in groundwater supplies and losses of 60 billion cubic meters of groundwater annually.³³ This is critical because 70% of the Chinese population relies on groundwater as a source of drinking water.³⁴ Various studies have used groundwater survey data and machine learning models to predict areas at greatest risk of poor groundwater quality and low groundwater yields. Their findings identify Southwest, Northwest, and Northeast China as the most affected regions, as shown in Figure 2.³⁵

³¹ W. Sun, Y. Zhang, H. Chen, L. Zhu, Y. Wang, 'Trend analysis and obstacle factor of inter provincial water resources carrying capacity in China: from the perspective of decoupling pressure and support capacity', 10 January 2022, <https://doi.org/10.1007/s11356-021-18255-y>

³² C. Gibson 'Water Pollution in China is the Country's Worst Environmental Issue' <https://borgenproject.org/water-pollution-in-china/>

³³ T. Duesterberg, 'The Global Impact of China's Water and Related Environmental Problems' 14 March 2024, <https://www.hudson.org/environment/global-impact-chinas-water-related-environmental-problems-thomas-duesterberg>

³⁴ F. Hu, 'Groundwater Under Pressure', 14 May 2015, <https://cwrrr.org/resources/analysis-reviews/groundwater-under-pressure/>

³⁵ Q. Zhou, J. Zhang, S. Zhang, Q. Chen, H. Fan, C. Cao, Y. Zhang, Y. Yang, J. Luo, Y. Yao, 'Groundwater quality evolution across China', 14 March, 2025, <https://doi.org/10.1038/s41467-025-57853-z>

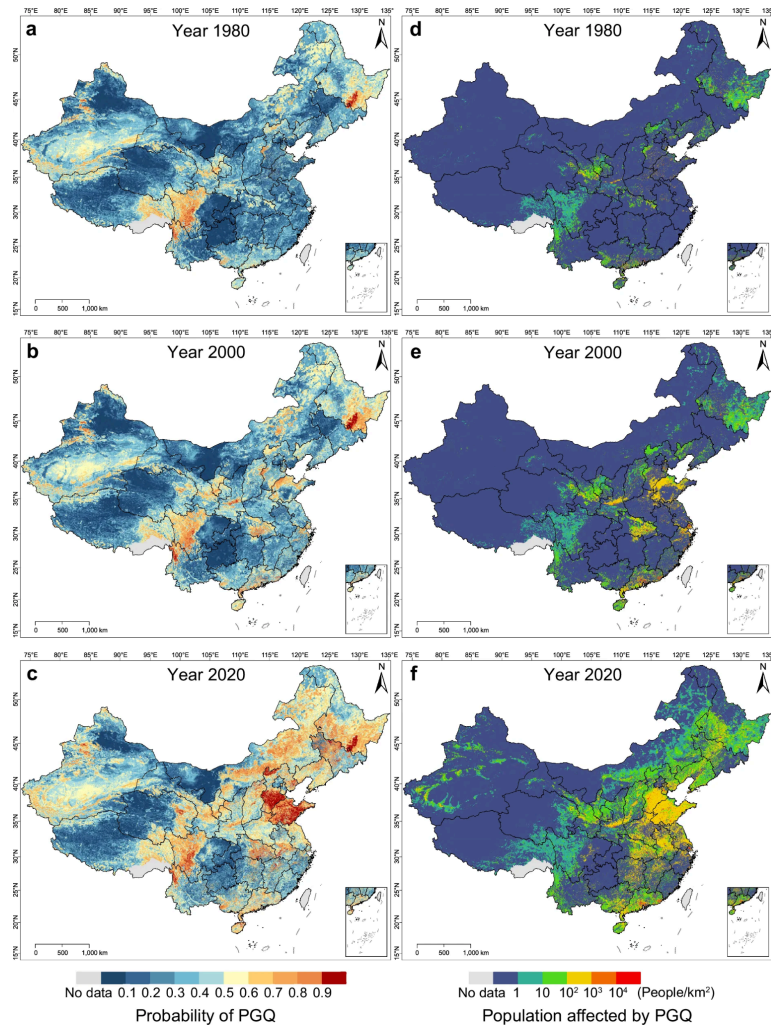


Figure 2: Distribution of Poor Ground Water (PGW) probability in China ranging from 1980 to 2020³⁶

The aforementioned uncontrolled industrialisation and urbanisation processes have also resulted in overuse of fertilizers, improper management of sewage, and unmanaged industrial waste. This, according to 2024 estimates, resulted in 80-90% of groundwater being unsuitable for drinking, 50% of water being too polluted for agricultural use, and 75% of lakes and reservoirs being too polluted for fishing activity and human consumption.³⁷

Air Pollution

On a global scale, air pollution is characterised by exposure to fine particles in polluted air, which are able to penetrate the respiratory and cardiovascular systems. In China, some of the main contributing factors to air pollution include industry, transportation, coal power plants, and household fuel usage.³⁸

³⁶ Ibid.

³⁷ T. Dueterberg, 'The Global Impact of China's Water and Related Environmental Problems' 14 March 2024

³⁸ World Health Organization, 'Air Pollution in China' <https://www.who.int/china/health-topics/air-pollution>

Additional contributors include heightened use of fossil fuels, biomass burning, traffic emissions, and soil dust.³⁹

Due to air pollution, there has been an increase in strokes, heart disease, pulmonary diseases, and respiratory infections. According to the World Health Organisation (WHO), air pollution accounts for approximately 2 million deaths in China per year.⁴⁰ Of these, around 1 million deaths are attributed to ambient and 1 million to household air pollution. This has made China one of the world's most polluted countries.

The severity of air pollution is commonly measured using PM_{2.5} concentrations. PM_{2.5} is best described as particulate matter measuring 2.5 micrometers or less in diameter which originates primarily from industrial emissions, household activities, and vehicles. These particles are the primary pollutant in air quality reports due to their ability to remain suspended in the air for days and are responsible for immediate and long-term health risks.⁴¹ These risks include short-term symptoms such as coughing, difficulty breathing, and throat irritation. Additionally, long-term difficulties include asthma, irregular heartbeat, bronchitis, and heart and lung disease.⁴²

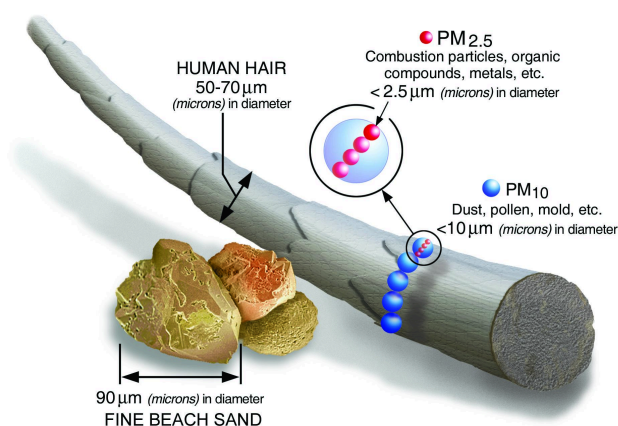


Figure 3: Size comparison scales for particulate matter⁴³

In 2020, the country's annual average PM_{2.5} concentration reached 29.6 μg/m³, nearly six times higher than the WHO's recommended annual guideline of 5 μg/m³. As a result, China ranked among the world's 20 most polluted countries that year.⁴⁴ Additionally, it was found that in 2020, 99% of China's inhabitants lived

³⁹ IQAir Staff Writers, 'China Air Quality Alert' 1 May 2026, <https://www.iqair.com/newsroom/china-air-quality-alert>

⁴⁰ World Health Organization, 'Air Pollution in China'

⁴¹ IQAir Staff Writers, 'PM_{2.5}' 30 December 2025, <https://www.iqair.com/newsroom/pm2-5>

⁴² Ibid

⁴³ EPA, 'Particulate Matter (PM) Basics', <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics>

⁴⁴ IQAir Staff Writers, 'China Air Quality Alert'

in areas where fine particle concentrations exceed WHO recommendations, and 43% lived in areas that do not meet Chinese national standards.⁴⁵

Biodiversity Loss

On a global scale, biodiversity loss refers to the loss of animal and plant species across an area through death, manual removal, or habitat destruction.⁴⁶ In China, biodiversity loss has been a result of habitat loss and environmental degradation due to industrialisation and rapid human development,⁴⁷ including urbanisation and expansion of agricultural land use.⁴⁸ China has been characterised as one of the seventeen mega-biodiverse countries in the world. These are countries characterised by being home to a large portion of the world's biodiversity and providing essential ecosystem services. Due to overexploitation and increased pressure, various habitats in China are now threatened and vulnerable, including grasslands, wetlands, and desert areas.⁴⁹

Biodiversity loss has led to a 50% decline in China's vertebrate species and has severely degraded three major ecosystems.⁵⁰ Some 90% of the country's grasslands have been affected, with many experiencing desertification. In addition, 40% of wetlands, including mudflats and mangroves, have been degraded.

According to the International Union for Conservation of Nature (IUCN) Red List,⁵¹ biodiversity loss has been due to threats such as economic growth and industrialisation. Additional pressures include the introduction of invasive species, the release of genetically modified organisms, and the expansion of biofuel production.⁵² As a result, 60% of China's endemic plant and animal species are threatened, 44% of wild animal populations are in decline, and 15–20% of wild plant species are at risk of extinction.⁵³

⁴⁵ S. Monjon and L. Boudinet, 'The State of China's Environment; What Has Changed in the Past Few Years?' <https://geopolitique.eu/en/articles/the-state-of-chinas-environment-what-has-changed-in-the-past-few-years>

⁴⁶ UNDRR, 'Biodiversity Loss' <https://www.undrr.org/understanding-disaster-risk/terminology/hips/en0501>

⁴⁷ WWF, 'China's biodiversity declines as human demands grow' 12 November 2015 <https://wwf.panda.org/es/?256224/China%27s%2Dbiodiversity%2Ddeclines%2Das%2Dhuman%2Ddemands%2Dgrow>

⁴⁸ Z. Sun, S. Biondi, Q. Zhang, B. Carroll, and L. Scherer, 'China's biodiversity loss across provinces driven by agricultural production and consumption', 20 March 2026, <https://doi.org/10.1007/s44498-026-00006-2>

⁴⁹ *Convention on Biological Diversity*, 'China - Country Profile' <https://www.cbd.int/countries/profile?country=cn>

⁵⁰ WWF, 'China's biodiversity declines as human demands grow'

⁵¹ The IUCN Red List, established in 1964, is a tool that discloses information on the global extinction risk status of species.

⁵² *Convention on Biological Diversity*, 'China - Country Profile'

⁵³ Z. Sun, S. Biondi, Q. Zhang, B. Carroll, and L. Scherer, 'China's biodiversity loss across provinces driven by agricultural production and consumption'

Research has also shown that the consumption of products such as beef, mutton, and other meats has contributed significantly to biodiversity loss in China, as illustrated in Figure 4. Across Chinese regions, these products account for 39.1% of plant biodiversity loss and 45.4% of vertebrate biodiversity loss. In provinces with extensive cropland, grain consumption contributes a further 24.3% of both plant and vertebrate biodiversity loss.⁵⁴ These impacts have led to economic losses for local populations across various sectors. For example, in the fishing industry, declining freshwater fish populations have resulted in smaller, less frequent, and less valuable catches.⁵⁵

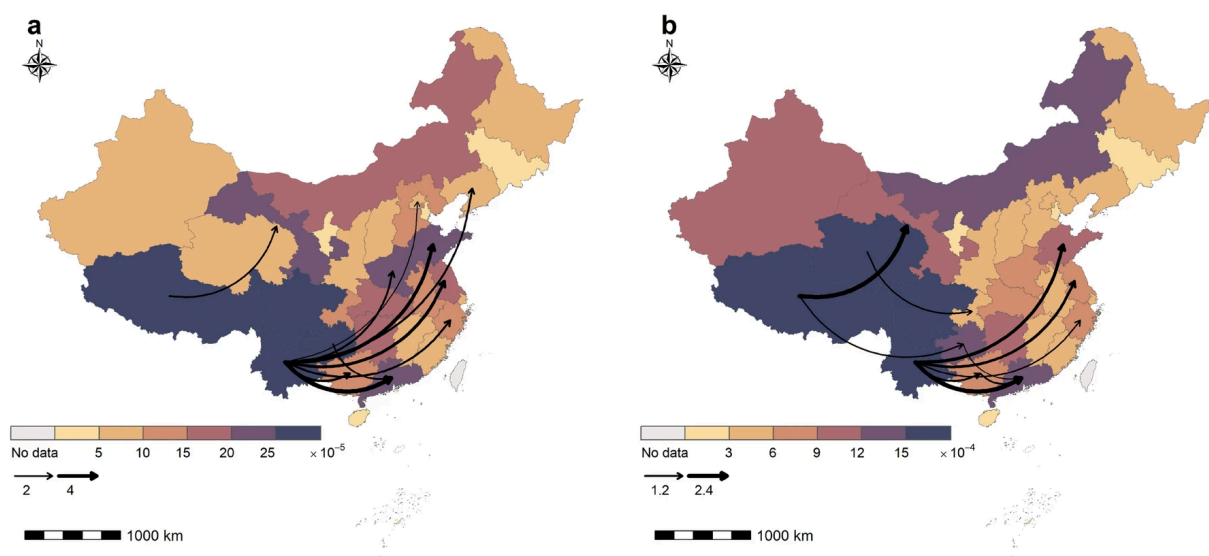


Figure 4: Consumption-based plant and vertebrate loss in Chinese provinces driven by agriculture (2012). The scale demonstrates the magnitude of consumption-based loss, with darker colors indicating greater biodiversity loss⁵⁶

Together, water pollution, air pollution, and biodiversity loss have significant global consequences but are particularly severe in China. Their worsening impacts have attracted growing domestic attention, with citizens increasingly demanding stronger environmental protection in response to their harmful effects on public health.⁵⁷ As discussed above, these impacts include higher rates of stroke, heart disease, pulmonary disease, respiratory infections, and liver, stomach, and oesophageal cancers.

By the late 2000s, growing public concern over these health and environmental impacts was increasingly manifesting in protests across China.⁵⁸ Politicians such

⁵⁴ Ibid

⁵⁵ *Convention on Biological Diversity*, 'China - Country Profile'

⁵⁶ Z. Sun, S. Biondi, Q. Zhang, B. Carroll, and L. Scherer, 'China's biodiversity loss across provinces driven by agricultural production and consumption'

⁵⁷ *Asia Society Policy Institute*, 'The Evolving Politics of Climate Change in China'

<https://asiasociety.org/policy-institute/new-report-evolving-politics-climate-change-china>

⁵⁸ *Council on Foreign Relations*, 'China's Environmental Crisis', 12 February 2025

<https://www.cfr.org/backgrounders/chinas-environmental-crisis>

as Chen Jiping, a former member of the Communist Party, described environmental issues as a cause for peaceful protests and riots.⁵⁹ In 2013 alone, 712 environmental protests were reported across rural and urban areas across China, including demonstrations in Shanghai, Ningbo, Kunming, and Guangdong.⁶⁰ As internet access expanded, information about pollution incidents and environmental violations became more visible to the public, which further strengthened public concern and citizen activism.⁶¹ Consumers and environmental organisations such as the IPE began publicly exposing polluting companies, which led to multinational corporations such as Apple facing criticism over pollution within their supply chains.⁶²

These developments, which were driven by growing public pressure, together with what he had witnessed first-hand, help explain why Ma Jun became a leading advocate for environmental transparency.⁶³ By witnessing the impact that informed public participation could have on environmental protection and corporate behavior, he recognised that access to reliable environmental information was essential for driving environmental action by pressuring companies to improve their environmental performance. All these environmental challenges ultimately fueled his desire to demand change in companies and have resulted in his work in developing tools such as the Blue Map to expose big polluters and involve the public in the fight for environmental protection.

Ma Jun's Defining Moment

Ma Jun's environmental focus developed primarily through his work as a journalist in the 1990s. As an environmental reporter for the South China Morning Post after graduating in 1992, he traveled extensively across China, exposing himself to environmental degradation in different regions.⁶⁴ His journalism took place during a period when environmental challenges were becoming increasingly severe. By the late 1990s, more than 60% of China's freshwater sources were contaminated, over 320 million people lacked access to safe drinking water, and industrial sectors such as textile manufacturing were major contributors to water pollution.⁶⁵

⁵⁹ *Ibid.*

⁶⁰ *Ibid.*

⁶¹ *Ibid.*

⁶² Goldman Environmental Foundation, '2012 Goldman Prize Winner - Ma Jun'

<https://www.goldmanprize.org/recipient/ma-jun/>

⁶³ Xinhua, 'Ma Jun: the call of rivers', 29 October 2009,

http://www.china.org.cn/environment/2009-10/29/content_18786790.htm

⁶⁴ J. Haffner, 'Innovation: Ma Jun: Information Empowers', Carnegie Council for Ethics in International Affairs, 2013

⁶⁵ *China.org.cn*, 'Ma Jun: The Call of Rivers',

http://www.china.org.cn/environment/2009-10/29/content_18786790.htm

As Ma traveled across the country, he witnessed their effects firsthand. At the Three Gorges Dam in 1994, he found barren forests and polluted rivers, where construction had stripped the landscape bare.⁶⁶ At Dongting Lake in 1996—described in classical Chinese poetry as vast and beautiful—he found the lake reduced to a series of thin rivers during the dry season. On the Fen River in Shanxi, he watched streams of copper green, iron red, and chemical yellow pour out of different factory towns, each color representing a different industry, all draining into the Yellow River.⁶⁷ He later met the chief engineer of the Yellow River Commission, who described the dam projects as a triumph of Chinese development, while the river itself ran dry for months of the year.

This contrast between the engineer's narrative of triumph and the real environmental degradation Ma observed became central to shaping his environmental philosophy, convincing him that the official reports of development success regularly concealed the environmental costs that came with it. Through his journalism, he observed significant pollution, ecosystem decline, and water management problems across the country. These experiences gave him first-hand insight into the environmental consequences of rapid industrialisation and how local economic incentives often undermined environmental protection.⁶⁸

They also reinforced his view that environmental information was often inaccessible to the public. Because this information was scattered across local websites, it was hard for ordinary citizens, journalists, or investors to find or compare. Therefore, the public was unable to identify which factories were polluting, how severely, or whether anything was being done about it. As Ma Jun later described it, the barrier was not that the pollution was invisible—it was that the information about it was.⁶⁹

One of the things that came from his time as a journalist was the publication of his book *China's Water Crisis* in 1999, which gathered his findings across years of field research and documented environmental conditions across China's major rivers. The book established Ma Jun as an important voice in environmental policy discussions globally.⁷⁰

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

⁶⁸ *Christian Science Monitor*, 'Ma Jun helps find out who's polluting and shame corporations into cleaning up', 2012

<https://www.csmonitor.com/Perspectives/Making-a-difference/2012/0416/Ma-Jun-helps-China-se-find-out-who-s-polluting-and-shame-corporations-into-cleaning-up>

⁶⁹ A. J. Mol, G. He, L. Zhang, 'Information Disclosure in Environmental Risk Management: Developments in China', *Journal of Current Chinese Affairs*, 2011

⁷⁰ J. Haffner, 'Innovation: Ma Jun: Information Empowers', *Carnegie Council for Ethics in International Affairs*, 2013,

<https://www.carnegiecouncil.org/media/series/policy-innovations/policy-innovations-digital-ma-gazine-2006-2016-innovations-ma-jun-information-empowers>

His publication marked the beginning of a bigger journey in environmental advocacy. Following the book, he undertook a fellowship at Yale University in 2004—the Yale World Fellows Program, a program that brings together a small group of accomplished mid-career professionals from around the world for a semester of study and exchange at Yale University, with the goal of building a global network of emerging leaders.⁷¹ As part of this fellowship, he carried out comparative research on Western environmental governance systems—including the Clean Air Act, Clean Water Act, and toxic release inventories⁷²—which convinced him that the missing element in China's environmental governance was public access to information, sharpening this tenet into an institutional blueprint.

Overall, the development of his book, the fellowship, and the creation of the IPE can all be linked back to the same origin: his work as a journalist, documenting environmental conditions in China in the 1990s.

Ma Jun's Climate Solutions

The Blue Map

After founding the IPE in 2006, Ma Jun's first goal was to make official environmental information easier for the public to access and use. To achieve this, through the IPE, he developed the IPE Pollution Database in 2007, an online database that centralised official government records of corporate environmental violations into a single publicly accessible resource. In 2014, IPE expanded the initiative with the Blue Map, an interactive website and mobile application that integrated the Pollution Database with real-time information on air quality, water quality, industrial emissions, and pollution sources across China.⁷³ In 2020, the Blue Map was further expanded through the Blue Map for Zero Carbon, which added corporate greenhouse gas emissions, carbon footprints, and climate-related disclosures to the existing platform.⁷⁴

⁷¹ Yale World Fellows, 'Ma Jun', <https://worldfellows.yale.edu/person/ma-jun/>

⁷² The Clean Air Act and Clean Water Act are both US federal environmental laws. The former regulates air emissions and sets national air quality standards; the latter regulates pollutant discharges and sets water quality standards. The Toxic Release Inventory (TRI) is a public database, created under a separate law (EPCRA), that lets citizens see what toxic chemicals nearby facilities are releasing. EPA, 'Summary of the Clean Air Act', <https://www.epa.gov/laws-regulations/summary-clean-air-act>; EPA, 'Summary of the Clean Water Act', <https://www.epa.gov/laws-regulations/summary-clean-water-act>; EPA, 'Toxics Release Inventory (TRI) Program', <https://www.epa.gov/toxics-release-inventory-tri-program>

⁷³ CWR, 'Institute for Public & Environmental Affairs (IPE)' <https://cwrrr.org/useful-links/institute-for-environmental-protection-ipe/>

⁷⁴ Institute of Public & Environmental Affairs (IPE), *Blue Map* (Beijing: IPE), <https://www.ipe.org.cn/BlueMap/Index.aspx>; Institute of Public & Environmental Affairs (IPE), *Blue Map for Zero Carbon* (Beijing: IPE)

The IPE Pollution Database and the Blue Map are different stages of the same environmental transparency initiative. Their development reflected changes in China's environmental information disclosure system. When little official data was publicly available, IPE focused on collecting and centralizing fragmented government records.⁷⁵ Later, as regulations required increasing numbers of companies to disclose environmental and emissions data and new datasets became available, the IPE developed Blue Map to integrate all this information into a single interactive platform.

Prior to the Measures on Open Environmental Information, which came into force on 1 May 2008, pollution records, environmental monitoring reports, enforcement notices, and environmental violation records were dispersed across numerous local Ecology and Environment Bureau (EEB)⁷⁶ websites and government announcements.⁷⁷ As a result, anyone trying to understand a company's environmental history had to search across dozens of different sources, making the information difficult to find, compare, and use.⁷⁸

To address this problem, Ma collected and consolidated these records into a single publicly accessible database.⁷⁹ The outcome was the IPE Pollution Database, launched in 2007, which at the time consisted of approximately 2,000 pollution violations from local authorities across China.⁸⁰ It became the country's first nationwide public database of corporate environmental violations.⁸¹ As the Chinese government gradually expanded environmental information disclosure,

⁷⁵ Environmental Protection Law of the People's Republic of China (2014 Revision); Ministry of Ecology and Environment of the People's Republic of China, *Measures for Enterprise Environmental Information Disclosure* (2021)

⁷⁶ In China, Ecology and Environment Bureaus (EEBs) are local government agencies operating at the provincial and municipal level. They are responsible for enforcing environmental laws, monitoring environmental conditions, and collecting environmental data—which they report to higher-level authorities and publish for public access. They answer to both local governments and the central Ministry of Ecology and Environment (MEE). Before 2018, these agencies were called Environmental Protection Bureaus (EPBs).

Benjamin van Rooij, *Regulating Land and Pollution in China: Lawmaking, Compliance, and Enforcement* (Leiden: Leiden University Press, 2006); Ministry of Ecology and Environment of the People's Republic of China, 'About MEE'.

⁷⁷ S. Ziyang, "How should businesses in China react to new environmental disclosure requirements?", 21 February 2022

⁷⁸ L. K. G., *Extending Enforcement: How the IPE Leverages Public Information to Strengthen Environmental Governance*.

⁷⁹ M. Wang, 'Data is Power: Tracking China's Progress Towards Its Green Targets', *Harvard Fairbank Center for Chinese Studies*, 6 March 2023,

<https://fairbank.fas.harvard.edu/research/blog/data-is-power-tracking-chinas-progress-towards-its-green-targets/>

⁸⁰ P. Hansson, 'Research Helped Shape China's Environmental Disclosure Reform', *Environment for Development (EfD) Initiative*, 2025,

<https://www.efdinitiative.org/story/research-helped-shape-chinas-environmental-disclosure-ref-orm>

⁸¹ World Economic Forum, "Ma Jun," *World Economic Forum*,

<https://www.weforum.org/stories/authors/ma-jun-6e1f944068/>

the database also grew. By 2024, it contained more than 2.9 million environmental enforcement records, making it the largest public environmental database in China.⁸²

China's environmental information disclosure framework expanded rapidly after 2013 with the central government's introduction of the Air Pollution Prevention and Control Action Plan, followed by the revised Environmental Protection Law in 2014.⁸³ These measures established new requirements for major polluters to disclose emissions data in real time.⁸⁴ As increasing amounts of information became available, Ma Jun adapted his approach from simply centralizing government records to integrating multiple datasets into a single platform that made them easier to access, interpret, and use. To support this evolving disclosure system, the IPE created the Blue Map website and mobile application in 2014.

Building on the existing IPE Pollution Database, the Blue Map combined historic pollution violation records with the increasing volume of real-time environmental information that became public. This included data on air quality, water quality, industrial emissions, and pollution source monitoring.⁸⁵ Citizens can use the platform to identify nearby polluting factories, monitor local environmental conditions, and report suspected environmental violations directly through the application. These reports are forwarded to the relevant EEB for investigation. The platform then lets users track the outcome of reported cases.⁸⁶

⁸² Institute of Public & Environmental Affairs (IPE), *About IPE*, <https://www.ipe.org.cn/about/about.html>

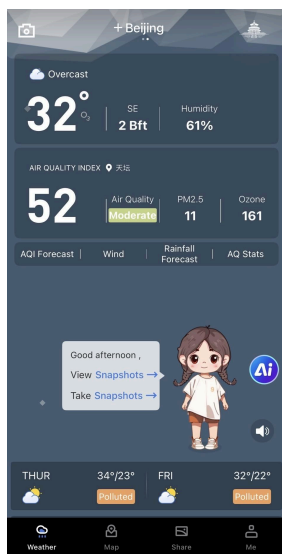
Li Yawei, 'China Establishes World's Largest Network of Specialized Eco-Environmental Judicial Institutions, SPC Says on World Environment Day', *People's Daily Online*, 6 June 2025, <https://en.people.cn/n3/2025/0606/c90000-20324296.html>

⁸³ Martin Bigg, Dimitri de Boer, Rong He, Xueju Huang, Lei Jia, Ludwig Krämer, Yuanyuan Li and Xiaofei Pei, *China's Regulatory Framework on Pollutant Discharge Permits: An Overview on the Formulation and Implementation of Pollutant Discharge Permits in China and the Sharing of EU Experience of Permitting* (EU-China Cooperation on Environment and Green Economy Project, December 2020), [ClientEarth report](#)

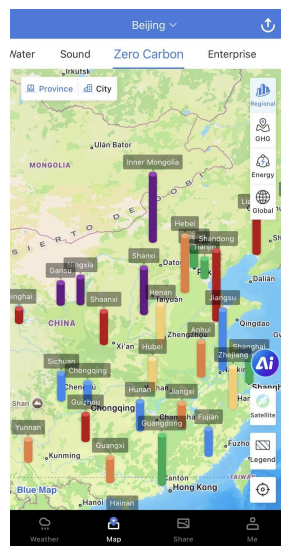
⁸⁴ Energy Policy Institute at the University of Chicago, "China: National Air Quality Action Plan (2013), 23 August 2023

⁸⁵ Pollution source monitoring refers to tracking emissions and discharges directly at their point of origin, such as factory smokestacks or wastewater outlets. This differs from ambient monitoring, which measures overall air or water quality in the surrounding environment.

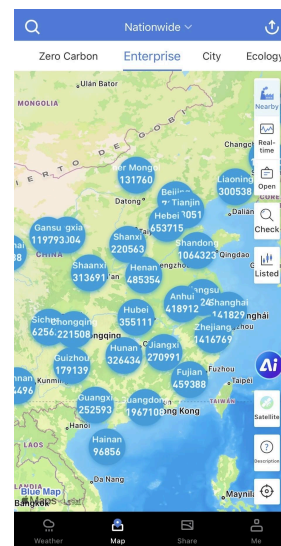
⁸⁶ Institute of Public & Environmental Affairs (IPE), *Blue Map for Zero Carbon*



Real-time air quality dashboard displaying local environmental conditions.



The interactive Blue Map showing real-time pollution monitoring and environmental data across China.



The Enterprise interface displays company-specific environmental records, pollution violations and environmental performance across China.

In 2020, the IPE expanded Blue Map through the Blue Map for Zero Carbon, which introduced data on corporate greenhouse gas emissions, carbon footprints, energy use, and other climate-related information.⁸⁷ This reflected China's growing commitment to peak carbon emissions⁸⁸ before 2030 and to achieve carbon neutrality by 2060. As China strengthened its climate commitment, the Ministry of Ecology and Environment (MEE)⁸⁹ launched the Reform Plan for the Legal Environmental Information Disclosure System in 2021, which required companies to disclose more climate-related information.⁹⁰ This made new datasets publicly available, which Blue Map for Zero Carbon incorporated into the platform. In addition, through the Blue Map for Zero Carbon, the IPE also provides companies with digital tools to measure and report their greenhouse gas emissions.⁹¹ This expanded IPE's transparency model from pollution monitoring alone to also include corporate climate data.⁹²

⁸⁷ World Economic Forum, 'Ma Jun – Agenda Contributor', *World Economic Forum*, <https://www.weforum.org/stories/authors/ma-jun-6e1f944068/>

⁸⁸ "Peak carbon emissions" means the point at which emissions stop rising and begin to decline.

⁸⁹ The Ministry of Ecology and Environment (MEE) is China's central government body responsible for national environmental policy, regulation, and oversight of local Ecology and Environment Bureaus (EEBs). It reports to the State Council, China's chief administrative body.

⁹⁰ Y. Ye, X. Yang, and L. Shi, 'Environmental Information Disclosure and Corporate Performance: Evidence from Chinese Listed Companies', 15 November 2023

⁹¹ *Harvard Fairbank Center for Chinese Studies*, 6 March 2023; Institute of Public & Environmental Affairs (IPE), *Blue Map*.

⁹² R. Wang, 'Race to the Top: Public Oversight and Local Environmental Information Transparency in China', *Cities* (2024)

Overall, the IPE Pollution Database, Blue Map, and Blue Map for Zero Carbon represent three stages of the same environmental transparency initiative. As China's environmental disclosure system expanded, Ma Jun adapted his approach to make use of the increasing amount of information. He first brought together scattered government records of corporate environmental violations through the IPE Pollution Database. As more types of environmental information became available, he developed Blue Map to combine these datasets with real-time environmental monitoring in a single platform. Finally, as companies began disclosing climate-related information, he expanded the platform again through Blue Map for Zero Carbon.⁹³

Green Supply Chain Initiative

Ma Jun's second major environmental initiative was the Green Supply Chain Initiative (GSCI), a voluntary program launched in 2007, with the goal to improve the environmental performance of Chinese manufacturers.⁹⁴ The initiative invites multinational companies to participate by working with the IPE to identify and address environmental violations within their Chinese supply chains. The GSCI uses the commercial and reputational influence of multinational corporations to encourage their suppliers to improve environmental performance.⁹⁵

The GSCI works by linking official environmental violations committed by Chinese suppliers to the multinational companies that purchase from them. Participating companies voluntarily provide the IPE with their supplier lists, which are matched against official environmental records in the Blue Map and, before 2014, the IPE Pollution Database. When suppliers are found to have committed environmental violations, such as discharging wastewater without a permit, exceeding air or water pollution limits, or breaching emissions standards, the IPE notifies the purchasing companies. These companies are then expected to work with their suppliers to implement corrective measures.⁹⁶ Once compliance has been demonstrated, the IPE reviews the evidence and updates the supplier's environmental record. Since the launch of Blue Map for Zero Carbon in 2020, the IPE also gives GSCI participants data on the greenhouse gas emissions of their suppliers.

⁹³ K. Logan, 'Extending Enforcement: How the IPE Leverages Public Information to Strengthen Environmental Governance'

⁹⁴ *Institute of Public & Environmental Affairs (IPE)*, 'Green Supply Chain',

<https://www.ipe.org.cn/GreenSupplyChain/Main.aspx>

⁹⁵ *CEO Water Mandate*, 'Green Supply Chain: Brand Map (2018)',

<https://ceowatermandate.org/resources/green-supply-chain-brand-map-2018/>

⁹⁶ *Columbia Case Consortium*, 'Publishing Pollution Data in China: Ma Jun and the Institute of Public and Environmental Affairs' (Columbia University, 2014),

<https://ccnmtl.columbia.edu/projects/caseconsortium/casestudies/135/casestudy/files/global/135/Ma%20Jun%20final.pdf>

The Green Supply Chain Initiative was formally launched in 2007 as the Green Choice Alliance (GCA), coordinated by IPE and initially composed of 20 environmental NGOs from China.⁹⁷ The Alliance aimed to encourage multinational corporations to incorporate publicly available environmental information into their supplier selection and management processes. The project slowly turned into the Green Supply Chain Initiative as more multinational companies joined the project.⁹⁸

The GSCI emerged from Ma Jun's earlier experiences as both a journalist and an environmental consultant. In 2004, prior to his start at IPE, he served as an environmental consultant with Sinosphere Corporation, a China-based environmental consulting company, engaging in one of China's first corporate social responsibility efforts centered on supply-chain management.⁹⁹ In this work he noticed that suppliers tended to shrug at environmental fines but turned to action when they faced the possibility of losing contracts with large international companies.¹⁰⁰ These experiences convinced him that commercial incentives and reputational pressure could, in some cases, drive faster environmental improvements than government enforcement alone.¹⁰¹

This insight became the foundation of the GSCI, as the initiative is built on two ideas:

1. Multinational corporations are highly sensitive to reputational pressure from consumers, investors, and NGOs.
2. Suppliers are more likely to address environmental violations when they risk losing business from these multinational companies than when they face regulatory fines alone.

Even though participation is voluntary, the GSCI relies on these incentives to encourage multinationals to join by providing them with a tool to identify environmental problems within their Chinese supply chains. The program does not address factory pollution directly. Instead, it links polluting factories to the

⁹⁷ QIMA, 'Institute of Public & Environmental Affairs (IPE)', <https://www.qima.com/ipe>

⁹⁸ *World Economic Forum*, 'Data Accountability and Growth: A Blue Map for Climate Action (2025); Institute of Public & Environmental Affairs (IPE), 'Why Green Supply Chains?', <https://www.ipe.org.cn/greensupplychain/GSC-Brand.Html>

⁹⁹ Haffner, 'Innovation: Ma Jun: Information Empowers', Carnegie Council for Ethics in International Affairs, 2013, <https://www.carnegiecouncil.org/media/series/policy-innovations/policy-innovations-digital-ma-gazine-2006-2016-innovations-ma-jun-information-empowers>

¹⁰⁰ K. Logan, 'Extending Enforcement: How the IPE Leverages Public Information to Strengthen Environmental Governance', in *Non-state Actors in China and Global Environmental Governance* (2021).

¹⁰¹ M. Wang, 'Data is Power: Tracking China's Progress Towards Its Green Targets', *Harvard Fairbank Center for Chinese Studies*, 6 March 2023

global brands that buy from them, encouraging these companies to monitor their suppliers and improve their environmental performance.¹⁰²

The scale of the initiative expanded significantly over time. By 2024, at least 780 companies across over 20 industries were participating, using IPE's environmental data to identify and address environmental risks within their supply chains.¹⁰³ Multinational companies like Apple, Walmart, Nike, Adidas and H&M are among the participants.¹⁰⁴

The Green Supply Chain Initiative targets all three environmental challenges discussed in this report. Water pollution, air pollution, and biodiversity loss are frequently linked to industrial production, particularly in sectors such as textiles, electronics, chemicals, and manufacturing. Ma Jun recognised that many local governments prioritised economic growth over environmental protection, resulting in weak enforcement of pollution laws for local factories.¹⁰⁵ The initiative, therefore, created an alternative mechanism for influencing polluters by introducing market-based consequences for environmental violations.

Corporate Information Transparency Index (CITI) and Pollution Information Transparency Index (PITI)

Ma Jun's third big environmental solution was the creation of the Corporate Information Transparency Index (CITI) in 2014 and the Pollution Information Transparency Index (PITI) in 2008. While the Blue Map opened up information to the public, and the Green Supply Chain Initiative pushed multinational companies to leverage that information, CITI and PITI launched a standardised framework for ranking environmental practices of companies and Chinese cities, respectively.

CITI builds directly on the Green Supply Chain Initiative. While the GSCI encourages multinational corporations to use their purchasing power to improve the environmental performance of their Chinese suppliers, CITI measures how

¹⁰² I. Alkandi, 'Green Supply Chain Management and Sustainable Performance: The Mediating Roles of Corporate Social Responsibility and Intellectual Capital in Saudi Arabia's Drilling Sector—A Resource-Based View and Stakeholder Theory Perspective', *Sustainability* 17, no. 24 (2025): 11015, <https://doi.org/10.3390/su172411015>.

¹⁰³ Media OutReach Newswire, '2024 CITI & CATI Index Results Announced: Luxshare Precision Continues to Lead in Green Supply Chain' (23 January 2025) <https://www.media-outreach.com/news/hong-kong/2025/01/23/357758/2024-citi-cati-index-results-announced-luxshare-precision-continues-to-lead-in-green-supply-chain/>

¹⁰⁴ Institute of Public and Environmental Affairs (IPE), *Information Transparency Drives Supply Chain Green Shift: CITI Index Ten Year Review (2014–2023)* (Beijing: Institute of Public and Environmental Affairs, 2024), <https://oaallfile.oss-cn-qingdao.aliyuncs.com/20250327/202503270436454524efedb78f28f346668a0afea0e8802868.pdf>.

¹⁰⁵ Ibrahim Alkandi, 'Green Supply Chain Management and Sustainable Performance: The Mediating Roles of Corporate Social Responsibility and Intellectual Capital in Saudi Arabia's Drilling Sector—A Resource-Based View and Stakeholder Theory Perspective', *Sustainability* 17, no. 24 (2025): 11015, <https://doi.org/10.3390/su172411015>.

effectively those multinationals have carried out this commitment in practice. It publicly ranks domestic and international brands based on how effectively they identify supplier violations, engage with suppliers, and improve environmental performance across their supply chains. PITI performs a similar role for local governments, assessing how openly they disclose environmental information. Together, the CITI and PITI transform transparency into a measurable form of environmental governance by converting both corporate and local government performance into comparable public rankings.¹⁰⁶

PITI was developed jointly by the IPE and the Natural Resources Defense Council (NRDC), a US-based international environmental NGO, to measure the transparency of environmental information from China's local governments. The index tracks how open and transparent cities are when disclosing pollution data. Cities are scored on common metrics: pollution monitoring data, emissions information, environmental law enforcement records, and the timeliness, completeness, and accuracy of what they disclose.¹⁰⁷ Each city receives a score, published annually. This allows local governments to compare their performance and creates an incentive to improve transparency.

PITI is a measure of how transparent local governments are, while CITI uses a similar evaluation system to measure transparency amongst domestic and international brands. Rather than engaging directly with suppliers, CITI evaluates each company's own environmental management, disclosure practices, and oversight of its supply chain, then publishes the results as a public ranking. The assessment is based on information from the Blue Map, official government environmental records, companies' environmental disclosures, documented pollution violations, pollution violation responses, supplier management, environmental compliance, and corrective actions. Because these rankings are based on standardised criteria, they let regulators, investors, consumers and NGOs directly compare companies' environmental performance against one another.¹⁰⁸

¹⁰⁶ J. Landreth, 'A Rare Environmental Success Story: The Blue Map App and Its 3.8 Million Chinese Users — Q&A with Ma Jun', *The China Project*, 2 May 2023, <https://thechinaproject.com/2023/05/02/a-rare-environmental-success-story-the-blue-map-app-and-its-3-8-million-chinese-users-qa-with-ma-jun/>

¹⁰⁷ A. Patel, 'Ma Jun: "No Business Interest" in Chinese Coal Power Due to Cheaper Renewables', *Carbon Brief*, 19 February 2026, <https://www.carbonbrief.org/ma-jun-no-business-interest-in-chinese-coal-power-due-to-cheaper-renewables/>

¹⁰⁸ Institute of Public & Environmental Affairs (IPE), *Corporate Information Transparency Index (CITI)*, <https://www.ipe.org.cn/greensupplychain/CITI.html>

No.	LOGO	Brand	Industry	CITI Score
1		Adidas	Textile, Leather & PU	92.79
2		Foxconn	IT/ ICT	88.53
3		Puma	Textile, Leather & PU	87.39
4		Nike	Textile, Leather & PU	85.64
5		Primark	Textile, Leather & PU	85.56
6		Dell	IT/ ICT	85.13
7		M&S	Retailers, Textile	84.32
8		Inditex	Textile, Leather & PU	84.27
9		LUXSHARE-ICT	IT/ ICT	81.48
10		Cisco	IT/ ICT	81.37
11		Levi Strauss & Co.	Textile	81.31
12		New Balance	Textile, Leather & PU	78.47
13		Kao	Household and Personal Care	75.16

Figure 5. Corporate Information Transparency Index (CITI) rankings.

A total of 10 results

Report Types: [dropdown] Report Year: [dropdown]

2020
A Decade of Achievements – 2018-2019 PITI (Public-Private Partnerships in 120 Cities) Report
 Since the first PITI index was released in 2009, we have been evaluating China's disclosure of pollution source information for ten years. China's environmental information disclosure has made historic progress and has begun to be widely used in many areas such as supply chain management, green finance, and social supervision.
 Published: 2020-01-03

2018
Becoming the Norm – 2017-2018 PITI Report for 120 Cities Released
 On December 25, 2018, the PITI Index Report on the Disclosure of Pollution Source Information in 120 Cities was released in Beijing. The report showed that the disclosure of environmental regulatory information in China continued to expand in 2017-2018, and the daily regulatory information disclosure of a number of leading cities is becoming more normalized. However, achieving the goal of pollution control requires more regions to follow suit.
 Published: 2018-12-26

2017
Cleaning up long-standing problems – 2016-2017 PITI Report for 120 cities released.
 On September 7, 2017, the Pollution Source Environmental Disclosure Index (PITI) evaluation report of 120 cities was released in Beijing. The evaluation results showed that China's environmental

Figure 6. Pollution Information Transparency Index (PITI) reports and rankings

PITI and CITI form an integrated environmental accountability system. As environmental governance researcher Kate Logan has argued, the two indices work together: PITI pushes governments to disclose more, and that disclosure feeds better data into CITI's corporate ratings, which in turn strengthens corporate environmental governance.¹⁰⁹ In theory, this creates a cycle where

¹⁰⁹ K. Logan, 'Extending Enforcement: How the IPE Leverages Public Information to Strengthen Environmental Governance', in *Non-state Actors in China and Global Environmental Governance*

transparency keeps improving on both sides, government and corporate, driven by public demand for trustworthy environmental information.

Together, the Blue Map, GSCI, CITI and PITI form a complementary transparency framework. The Blue Map provides the informational foundation by collecting and centralizing official government environmental data and making it publicly accessible. Building on this, the GSCI uses that data to identify suppliers with environmental violations and encourages multinational corporations to work with those suppliers to improve compliance. The CITI then evaluates how effectively those brands have responded to supplier issues and managed the environmental performance of their supply chains. Finally, the PITI assesses how transparently local governments are disclosing environmental information in the first place—that underpins the entire system. Through this layered structure, Ma Jun created a framework in which official environmental data is first made accessible, then used to drive corporate behavior change, and finally used to evaluate both government and corporate performance.

Ma Jun's Impact

Ma Jun's initiatives have been successful in making environmental information more accessible and using it to support action against pollution.

The Blue Map

The Blue Map was designed to make government environmental information not only publicly available but also genuinely usable. By giving citizens the tools to identify polluters, it aimed to generate public pressure on companies to reduce their emissions and on local governmental authorities to enforce environmental regulations.

Judged against this goal, the initiative can be considered partially successful for two main reasons. First, it managed to centralize official environmental data into a single platform, which made pollution information easier to access and use. Citizens have used this in practice: they have monitored local environmental conditions, identified specific polluters, and then reported their suspected violations through the platform. Secondly, it created the data infrastructure that has been used as the foundation for IPE's later initiatives, including the Green Supply Chain Initiative, the Corporate Information Transparency Index (CITI), and the Pollution Information Transparency Index (PITI).

However, there is limited evidence that the Blue Map itself has directly reduced corporate pollution. While later IPE initiatives built on Blue Map data provide evidence that public data encouraged companies to improve their environmental performance and governments to strengthen enforcement, there is no evidence to show that the Blue Map alone caused these changes.

Even without clear evidence of this direct impact, IPE's ability to operate and expand the Blue Map was an achievement in itself, due to the context it operates in—China's highly regulated NGO environment. Organisations that rely on foreign funding, cooperate with certain overseas organisations, openly challenge government policies, or organize public opposition can face restrictions.¹¹⁰

Ma Jun was able to avoid government interference due to his approach of positioning IPE as a government partner rather than a challenger. IPE chose to work with the information the government was willing to let people see, rather than challenging these limits.¹¹¹ IPE did not criticize the government or carry out its own investigations; instead, it relied on already published government data. This differed from other Chinese NGOs such as Friends of Nature, Green Earth Volunteers and Green Watershed, which relied on advocacy and public criticism and therefore faced a more restricted space for their work.¹¹²

By working within the existing system instead, IPE was able to benefit from China's growing focus on environmental transparency after 2008. As more data became public, IPE turned it into useful tools for citizens, companies, investors and regulators. This approach helped IPE gain government trust and become one of the few environmental NGOs able to influence environmental governance in China. In 2019, Ma Jun was appointed a Special Observer by the Ministry of Ecology and Environment (MEE), which reflects the trust the IPE had built through this cooperative approach.¹¹³

By relying on digital technology, the Blue Map also succeeded in giving many citizens a more active role in environmental governance. China's rapid growth in internet use, smartphone ownership and digital infrastructure during the 2010s enabled millions of people to access the Blue Map and engage with environmental information in ways that had not previously been possible.¹¹⁴ Citizens could monitor local environmental conditions, identify polluting companies and report environmental violations directly through the platform. As of 2025, more than 10 million users have downloaded Blue Map and over 13,000

¹¹⁰ K. Mao, Z. Zhao and Y. Xu, "The Blueway and the Red Line Spiderweb: Assessing the Impact of Repressive and Ideological State Apparatuses on Environmental Protests in China," *Asian Politics & Policy*, 17(2) (2025), e70018, <https://onlinelibrary.wiley.com/doi/10.1111/aspp.70018>

¹¹¹ D. Han and X. Fan, "The Power of Data From the Global South: Environmental Civic Tech and Data Activism in China," ResearchGate, https://www.researchgate.net/publication/341104182_The_Power_of_Data_From_the_Global_South_Environmental_Civic_Tech_and_Data_Activism_in_China

¹¹² CECC (Congressional-Executive Commission on China), "Environmental NGOs in China: Encouraging Action and Addressing Public Grievances," testimony transcript, <https://www.cecc.gov/sites/evo-subsites/cecc.house.gov/files/documents/roundtables/2005/CECC%20Roundtable%20Testimony%20-%20Elizabeth%20Economy%20-%202.7.05.pdf>

¹¹³ World Resources Forum, "Ma Jun," World Resources Forum, <https://www.wrforum.org/people/ma-jun>

¹¹⁴ The Earthshot Prize, 'The Blue Map App', *The Earthshot Prize*, <https://earthshotprize.org/winners-finalists/the-blue-map-app/>

suspected environmental violations have been reported via the platform.¹¹⁵ These reports were then sent to local environmental authorities, where as of 2025, 80% received a government response.¹¹⁶ This has strengthened public control on both corporations and local authorities and brought the citizens into the environmental governance process as active agents instead of passive information recipients.

The Blue Map's impact has also extended beyond China. IPE has been invited to share its experience with countries including Vietnam, Indonesia, Thailand and the Philippines.¹¹⁷ Environmental NGOs in Africa have also shown interest in developing similar platforms to the Blue Map.¹¹⁸ This international interest shows that the Blue Map created an appealing model for using public environmental data that could be adapted beyond China.

However, as discussed, there is limited evidence on whether the Blue Map itself has directly reduced corporate pollution through its engagement of the public. Despite this, IPE's later initiatives—the GSCI, CITI, and PITI—which use the data collected through the Blue Map, provide evidence of this impact. These results are explored in the following sections.

Beyond the limited evidence of its direct impact on corporate pollution and changing the enforcement practices of local governments, the Blue Map also faces limitations in both the information it can provide and who it can reach. Firstly, the initiative is dependent on official government information. Due to this, the platform is only as effective as the quality, completeness and timeliness of government reporting and can only show information local governments made available. As mentioned before, China's disclosure framework expanded significantly from 2008 onward, requiring local authorities to publish environmental monitoring, enforcement, and pollution data. Implementation, however, has been uneven. Some provinces disclosed records fully and on time; others released partial or delayed data or revised records sporadically.¹¹⁹ Local governments have also sometimes prioritised economic growth over

¹¹⁵ J. Zhang, "China's Journey from Tackling Water Pollution to Restoring Ecosystems," *Eco-Business*, 5 June 2025, <https://www.eco-business.com/news/chinas-journey-from-tackling-water-pollution-to-restoring-ecosystems/>

The Earthshot Prize, "The Blue Map App," *The Earthshot Prize*, <https://earthshotprize.org/winners-finalists/the-blue-map-app/>

¹¹⁶ J. Zhang, "China's Journey from Tackling Water Pollution to Restoring Ecosystems," *Eco-Business*, 5 June 2025, <https://www.eco-business.com/news/chinas-journey-from-tackling-water-pollution-to-restoring-ecosystems/>

¹¹⁷ *Khabar Asia*, 'From Smog to Sustainability: How Open Data is Fueling China's Green Revolution', 4 December 2023

¹¹⁸ *Ibid.*

¹¹⁹ Jean-François Tremblay, 'Pollution Data Uneven Across China', *Chemical & Engineering News* 90, no. 10 (5 March 2012), <https://cen.acs.org/articles/90/i10/Pollution-Data-Uneven-Across-China.html>

enforcement, in some cases reportedly tipping off factories ahead of inspections.¹²⁰ As a result, the quality and reliability of the data on the Blue Map vary by region. This means that the platform is unable to give a fully consistent national picture of environmental performance.

Second, the platform's reach may be limited by uneven digital access across China. Blue Map has been downloaded more than 10 million times nationwide, but regional download data is not public, so there is no way to confirm how much of that reach extends to rural areas versus major cities. What can be said is that internet and smartphone use tends to be higher in urban areas than in less developed and rural regions, where weaker digital infrastructure could make accessing the platform harder.¹²¹

Lastly, the Blue Map creates pressure for environmental action, but it cannot force companies or governments to act. Its impact, therefore, depends on what happens after pollution is exposed—on whether authorities enforce environmental rules and whether companies respond to public pressure.

Green Supply Chain Initiative

The GSCI's ultimate goal was to reduce pollution by Chinese manufacturers through encouraging multinational companies to use their commercial influence to improve the performance of their suppliers. The initiative can be considered successful in achieving this objective with regard to many foreign multinational companies with Chinese supply chains.

First, it persuaded a large number of multinational companies to join the initiative. Second, participating companies actively used the GSCI to identify suppliers with environmental violations and encourage them to take corrective action. As a result, thousands of suppliers rectified environmental violations, disclosed emissions data, and improved their environmental performance. In addition, the initiative laid the foundation for several later IPE initiatives, including the Corporate Information Transparency Index (CITI), the Corporate Climate Action Transparency Index (CATI),¹²² and the Global Business Accountability Map, which highlights CATI scores and company locations.

¹²⁰ Xinlu Liang, 'China's Local Governments Must Now Justify Big Jumps in Fines, Charges on Private Firms', *South China Morning Post*, 23 May 2025, [South China Morning Post article](#)

¹²¹ China Internet Network Information Center (CNNIC), "The 54th Statistical Report on China's Internet Development," CNNIC, 2024, <https://www.cnnic.com.cn/IDR/ReportDownloads/202411/P020241101318428715781.pdf>

¹²² The CATI is an index that evaluates corporate climate action to accelerate decarbonization and advance net-zero goals in comparison to the CITI, which evaluates corporate environmental and carbon management of company supply chains.

Its key innovation was connecting individual factories to the multinational brands that bought from them. By that connection, the GSCI extended environmental responsibility across entire supply chains rather than looking at each factory in isolation. In the past, there were also initiatives that aimed to improve corporate environmental transparency but they did not go beyond assessing the performance of individual factories. For example, the GreenWatch Program, introduced in 1999, rated firms' environmental performance using a color-coded rating system.¹²³ However, it took a factory-by-factory approach and failed to connect the factories to the multinationals buying from them. Therefore, the initiative could not use the pressure from multinationals to incentivize the local manufacturers. GSCI closed that gap.

GSCI was successful in building widespread corporate participation. By 2024, more than 700 brands across over 20 industries, including Apple, Walmart, Nike, Adidas, H&M, and Huawei, had voluntarily joined the initiative.¹²⁴ This demonstrates that the GSCI's first underlying assumption—that multinational companies would be willing to participate because of the commercial and reputational benefits of improving supply-chain management—proved correct.

Huawei, for example, states on its website that it has been a GSCI participant since 2011 and uses the Blue Map's environmental data during supplier audits to identify environmental violations and monitor supplier compliance.¹²⁵

Apple's joining of GSCI shows a different path to the same result. In 2010, Apple was named alongside 29 other companies in a report on heavy metal pollution linked to IT supply chains in China, published by IPE and its coalition partners.¹²⁶ Apple was the only company that did not respond, citing a policy against disclosing supplier information. In response, IPE and partner NGOs launched a public campaign called "Poisoned Apple" to pressure the company over this lack of transparency. Apple faced public criticism as a result, which made it reverse course in 2011.¹²⁷ It approached Chinese environmental groups and began

¹²³ B. Liu, Q. Yu, J. Bi, B. Chang, J. Ge, and M. Bu, 'A study on the short-term and long-term corporate responses to the GreenWatch Program: evidence from Jiangsu, China', March 2012, <https://www.sciencedirect.com/science/article/abs/pii/S0959652611004768>

¹²⁴ Media OutReach Newswire, '2024 CITI & CATI Index Results Announced: Luxshare Precision Continues to Lead in Green Supply Chain' (23 January 2025) <https://www.media-outreach.com/news/hong-kong/2025/01/23/357758/2024-citi-cati-index-results-announced-luxshare-precision-continues-to-lead-in-green-supply-chain/>

¹²⁵ Huawei, 'IPE "Green Choice" Initiative: Building a Competitive and Green Supply Chain', Huawei, <https://www.huawei.com/en/sustainability/the-latest/stories/ipe-green-choice-initiative>

¹²⁶ Business & Human Rights Resource Centre, 'Chinese NGOs Say Apple Failed to Address Concerns over Pollution, Health & Safety at Supplier Factories in China', 6 October 2010, <https://www.business-humanrights.org/en/latest-news/chinese-ngos-say-apple-failed-to-address-concerns-over-pollution-health-safety-at-supplier-factories-in-china/>

¹²⁷ Business & Human Rights Resource Centre, 'Chinese NGOs Say Apple Failed to Address Concerns over Pollution, Health & Safety at Supplier Factories in China', 6 October 2010, [Business & Human Rights Resource Centre](https://www.business-humanrights.org/en/latest-news/chinese-ngos-say-apple-failed-to-address-concerns-over-pollution-health-safety-at-supplier-factories-in-china/)

pushing its suppliers to clean up their practices.¹²⁸ Later, Apple also joined GSCI and has since ranked at or near the top of IPE's CITI index. Apple itself announced in 2019 that it was the first company to receive the CITI Master designation after ranking first in CITI for the previous five years.¹²⁹

The initiative itself did not cause Apple's initial change: that came from the reputational damage of the public campaign in 2010. What GSCI provided came afterward. It gave Apple, and later many other companies, a structure through which reputational commitments could be turned into action. This illustrates a division of labor: public pressure is what motivates companies to act in the first place, while GSCI is what allows that motivation to turn into an action that can be tracked over time.

Due to the participation of these companies and their pressure on manufacturers, over 37,000 suppliers have improved their environmental performance and transparency.¹³⁰ This demonstrates that the initiative's second underlying assumption also proved correct: suppliers were willing to improve their environmental performance when faced with the commercial risk of losing business from multinational customers.

The initiative addressed one of the major challenges in China's environmental system: the difficulty of holding domestic suppliers accountable when they operate far from public view. By exploiting the reputational vulnerability of multinational corporations, Ma Jun created a mechanism capable of influencing factories that would otherwise remain difficult to monitor. This strategy allowed environmental standards to reach thousands of manufacturing facilities without requiring political or regulatory reforms.

Ultimately, the Green Supply Chain Initiative illustrates Ma Jun's broader approach to environmental governance. Rather than viewing environmental protection solely as a regulatory issue, he treated it as a problem of incentives, information, and accountability.¹³¹ By connecting environmental performance to commercial relationships, the initiative transformed environmental compliance into a business concern and extended environmental accountability throughout global supply chains. In doing so, it provided an innovative alternative to

¹²⁸ Goldman Environmental Foundation, '2012 Goldman Prize Winner - Ma Jun'

¹²⁹ Newsroom, 'Apple was awarded the CITI Outstanding Brand for its Green Supply Chain in China for its environmental impact', 24 October 2019, <https://www.apple.com.cn/newsroom/2019/10/apple-named-green-supply-chain-citi-master-for-environmental-impact-in-china/>

¹³⁰ World Economic Forum, "Ma Jun," *World Economic Forum*, <https://www.weforum.org/stories/authors/ma-jun-6e1f944068/>

¹³¹ X. Lan, U. E. Simonis and D. J. Dudek, 'Environmental Governance for China: Major Recommendations of a Task Force', *Environmental Politics* 16, no. 4 (2007): 669–676, <https://doi.org/10.1080/09644010701419196>

traditional regulatory approaches and became one of the most influential supply-chain sustainability initiatives operating in China today.

When it comes to domestic companies with low integration into global value chains, however, the initiative has been relatively less successful. Multinational corporations are more exposed to reputational risks from foreign consumers, investors, NGOs and sustainability standards and, as such, have greater incentives to enhance their supplier management practices compared to domestic companies. This difference is visible in the current CITI rankings, where many of the highest-performing brands are multinational companies.¹³²

Thus, while the initiative has proven effective at incorporating environmental factors into the management of global supply chains, it alone will not be sufficient to achieve meaningful long-term emissions reductions unless there are complementary government measures, effective enforcement, and increased corporate commitments relating to climate change. Its most important legacy is that it shows how transparency and market-based incentives can be used to hold certain companies accountable for their environmental footprints.

Corporate Information Transparency Index (CITI) and Pollution Information Transparency Index (PITI)

While the GSCI encourages global brands to improve the environmental performance of their supply chains, CITI publicly evaluates their efforts. PITI applies a similar transparency approach to local governments by assessing cities on their environmental information disclosure.

PITI's impact has been pushing multiple local governments to become compliant with existing disclosure laws. The index tracks whether cities disclosed the information they were already legally required to release, such as pollution monitoring data, enterprise emissions, environmental enforcement records, environmental impact assessments, and public complaint mechanisms. Because these rankings are public, cities that scored poorly faced reputational pressure compared to their peers. This pressure translated into actual change, demonstrating that PITI had a real impact. The average PITI score across cities rose from 31 in 2008 to 57 in 2019, showing that cities steadily closed the gap between what the law required and what they actually disclosed.¹³³

¹³² Institute of Public & Environmental Affairs (IPE), "Green Supply Chain Corporate Information Transparency Index (CITI)," IPE, <https://www.ipe.org.cn/GreenSupplyChain/CITI.aspx>

¹³³ Mengdi Liu, Mark T. Buntaine, Sarah E. Anderson and Bing Zhang, 'Transparency by Chinese Cities Reduces Pollution Violations and Improves Air Quality', *Proceedings of the National Academy of Sciences of the United States of America* 122, no. 14 (2025): e2406761122, <https://doi.org/10.1073/pnas.2406761122>

PITI did not just have a "transparency" effect; it also had a measurable environmental impact. The results of a large-scale randomised controlled trial revealed that cities in the program saw about a 90% rise in environmental inspections and a 37% reduction in pollution violations.¹³⁴ Due to this strengthened enforcement, air quality also improved: PM_{2.5}, PM₁₀, and Air Quality Index levels each fell by around 8-10%.¹³⁵ Researchers estimated that an additional 2,008 premature deaths were prevented in participating cities, a figure that could be more than 24,000 if such changes were implemented across the country.¹³⁶

These results reveal PITI's mechanism: although it did not reduce pollution directly, it gave incentives to local governments to do so. By making environmental performance publicly comparable across cities, it gave officials a reason to enforce laws that were already on the books but poorly applied. So PITI's real contribution to cutting pollution was making information public in a way that motivated stronger enforcement. This shows that transparency alone can be enough to push governments to follow their own laws more strictly.

CITI extends this same logic to corporate environmental governance. CITI is the world's first quantitative system for assessing how companies manage environmental risk across their supply chains, drawing on public government records, supplier responses, corrective actions, and companies' own environmental disclosures.¹³⁷

CITI's impact is difficult to evaluate separately from the Green Supply Chain Initiative, because the two mechanisms work together. GSCI gives companies a way to identify environmental problems in their supply chains and push suppliers toward corrective action, while CITI publicly evaluates and ranks how effectively they do this.

Because of this, it is hard to say whether a company's behavior changed because it participated in GSCI, or because CITI made its performance visible to the public. What we do know is this: the number of brands evaluated by CITI grew from 147 to 167 between 2014 and 2015.¹³⁸ This growth means companies kept choosing to participate in GSCI, and therefore CITI, even knowing that doing so risked a poor public ranking. That itself is evidence CITI worked as an incentive: companies

¹³⁴ Mengdi Liu, Mark T. Buntaine, Sarah E. Anderson and Bing Zhang, 'Transparency by Chinese Cities Reduces Pollution Violations and Improves Air Quality', *Proceedings of the National Academy of Sciences of the United States of America* 122, no. 14 (2025): e2406761122, <https://doi.org/10.1073/pnas.2406761122>

¹³⁵ *Ibid.*

¹³⁶ *Ibid.*

¹³⁷ Institute of Public & Environmental Affairs (IPE) and Natural Resources Defense Council (NRDC), *Green Supply Chain CITI Index Evaluation Guidelines 8.0* (2021), p. 28, [IPE CITI Evaluation Guidelines](https://www.ipe.org.cn/greensupplychain/CITIDetailV2.aspx?id=46)

¹³⁸ Institute of Public and Environmental Affairs (IPE), 'Brand Details: Green Supply Chain CITI and Corporate Climate Action CATI', *Blue Map/IPE*, <https://www.ipe.org.cn/greensupplychain/CITIDetailV2.aspx?id=46>

judged that being ranked, risk of a bad score included, was still better than staying outside the system altogether.

Together, CITI and GSCI have caused real behavior change. The number of suppliers responding to environmental violations, remediation requests, or disclosure requirements grew from just over 500 in 2014 to more than 25,000 in 2023.¹³⁹

A limitation for both indices, however, is that neither can force real commitment. CITI depends on companies choosing to participate and respond to reputational pressure, since it is not a binding regulation. PITI works differently: cities are evaluated regardless of whether they want to be, but how much they actually care about their ranking and, therefore, how well they comply with disclosure laws can vary by region. As a result, CITI works better with multinationals exposed to international consumers and investors than with domestic firms, while PITI's impact depends on how seriously local governments take their ranking.

Recommendations for Ma Jun

Ma Jun's three initiatives, the Blue Map, GSCI, CITI and PITI, transformed how environmental data is disclosed, how the public engages with it, and how environmental protection is enforced in China. Together, they made environmental violation records publicly accessible across all Chinese provinces, tracked the environmental performance of 16 million companies, and brought more than 700 brands across over 20 industries into the GSCI.

That said, three specific limitations hold back further impact. Firstly, they lack the incorporation of all publicly available environmental data. Next, companies ranked poorly on CITI face no requirement besides potential public scrutiny to actually correct their practices, so a low score does not always translate into real improvement. Lastly, none of the initiatives make companies pay for the environmental damage they have caused, meaning transparency alone has not led to ecological recovery.

Therefore, the implementation of three policy recommendations would allow Ma Jun to scale the positive environmental effects of the current initiatives. These include: Centralised Environmental Disclosure, Mandatory Improvement Action Plans Under the Green Supply Chain Initiative, and Environmental Protection and Restoration Funds. These recommendations focus on strengthening the established systems of the Blue Map, CITI, and GSCI.

¹³⁹ Institute of Public & Environmental Affairs (IPE), "Information Transparency Drives Supply Chain Green Shift: CITI Index Ten Year Review (2014–2023)," *IPE*, 2024, <https://oaallfile.oss-cn-qingdao.aliyuncs.com/20250327/202503270436454524efedb78f28f346668a0afea0e8802868.pdf>

Centralised Environmental Disclosure

The Chinese government already requires companies to disclose a wide range of environmental information, but some of this data has not yet been integrated into the Blue Map. The platform currently shows company violations and pollution incidents but leaves out newer disclosure requirements, namely, mandatory environmental reports, pollutant discharge records, and emissions data from China's Emissions Trading System (ETS). This recommendation proposes expanding the Blue Map by integrating these existing datasets into the environmental profile of each company available on the platform.

Three sources of data would be added. First, under the Ministry of Ecology and Environment's (MEE) mandatory environmental disclosure requirements introduced in 2022, companies must submit annual environmental reports by 15 March, covering their environmental performance during the previous calendar year. This includes data on their generation and handling of air and water pollutants, environmental governance and risk prevention, and environmental credit rating, a government-assigned score reflecting compliance history.¹⁴⁰

Second, under the Regulation on the Administration of Pollutant Discharge Permits, introduced in 2021, companies engaged in polluting activities are required to obtain pollutant discharge permits and regularly report information to the National Pollutant Discharge Permit Management Platform.¹⁴¹ This regulation requires entities to obtain permits for each polluting activity prior to the launch of production facilities and report the actual discharge of pollutants. Entities with permits have various obligations, amongst these: carrying out self-monitoring, establishing a ledger record system, and periodically reporting permit implementation.

Third, under China's national ETS, introduced in 2021, companies covered by the scheme are required to submit monthly and annual reports on their greenhouse gas emissions. The ETS is a cap-and-trade carbon market that began trading in 2021 at 48 yuan (USD 7.09) per tonne of CO₂ for the power sector.¹⁴² By 2024, the

¹⁴⁰ The Business Reporting Standard, 'China introduces new rule on mandatory environmental disclosures', 21 January 2022, <https://www.xbrl.org/news/china-introduces-new-rule-on-mandatory-environmental-disclosure-s/>

¹⁴¹ State Council of the People's Republic of China, *Regulation on the Administration of Pollutant Discharge Permits* [排污许可管理条例], State Council Order No. 736, 24 January 2021, Ministry of Ecology and Environment, https://www.mee.gov.cn/zcwj/gwywj/202101/t20210129_819519.shtml

¹⁴² Carbon Brief, 'In-depth Q&A: Will China's emissions trading scheme help tackle climate change?', 24 June, 2021, <https://www.carbonbrief.org/in-depth-ga-will-chinas-emissions-trading-scheme-help-tackle-climate-change/#:~:text=Carbon%20Brief's%20analysis%20shows%20that.with%20gas%20fuelling%20the%20remainder.>

carbon price had exceeded 100 yuan (USD 14.77) per tonne, and in 2025, the scheme was expanded to include the steel, cement, and aluminum industries.¹⁴³ This system is divided into eight regional ETS and one national ETS which contains a National Carbon Trading Market Management Platform, registration system, and trading system.¹⁴⁴ Each company has a free allowance for CO₂ emissions, and if they have a surplus, they have the ability to sell, while if they exceed the allotted allowance, they must buy additional permits.¹⁴⁵ The Blue Map would integrate the verified monthly and annual emissions reports into each company's environmental profile, providing the public with a more complete picture of firms' carbon performance.

Integrating these three disclosure systems into a single company profile within the Blue Map would follow Ma Jun's approach of using already available environmental information. Since the development of the IPE, Ma Jun and his team have focused on empowering citizens through data transparency, launching the Blue Map to help Chinese people understand and visualize environmental data.¹⁴⁶ This recommendation follows this approach by taking these new datasets and making them digestible for the public by adding them into the existing profiles for individual companies.

The implementation of this recommendation would rely primarily on the MEE, its provincial subsidiaries (EEBs), and the China National Environmental Monitoring Centre (CNEMC), a public institution affiliated with the MEE that is responsible for national environmental monitoring. The MEE and its provincial subsidiaries would continue to oversee company reporting and compliance under the existing environmental disclosure systems.¹⁴⁷ The CNEMC would support the transfer of environmental data to the Blue Map, while the IPE would integrate these datasets into the existing Blue Map company profiles. The implementation of this recommendation would involve the following steps:

- 1) The **MEE and provincial-level EEBs** continue to oversee company reporting under existing disclosure systems.
- 2) The **CNEMC** would facilitate the connection between the reporting databases and the Blue Map, ensuring there is an automatic data transfer.
- 3) The **IPE** updates the Blue Map company profiles with the newly disclosed datasets.

¹⁴³ MEE, 'Progress Report of China's National Carbon Market (2024)', July 2024, <https://www.mee.gov.cn/ywdt/xwfb/202407/W020240722528850763859.pdf>

¹⁴⁴ Ibid

¹⁴⁵ R. Roldao, 'Carbon Trading the Chinese Way', 5 January, 2022, <https://www.energymonitor.ai/carbon-markets/carbon-trading-the-chinese-way/?cf-view>

¹⁴⁶ M. Wang, 'Data is Power: Tracking China's Progress Towards Its Green Targets', *Harvard Fairbank Center for Chinese Studies*, 6 March 2023

¹⁴⁷ ICAP, 'China National ETS', <https://icapcarbonaction.com/en/ets/china-national-ets#:~:text=Provincial%2Dlevel%20MEE,calculating%20allowance%2C>

Through the participation of the mentioned parties, this recommendation proves to be politically feasible. First, it builds on the existing environmental disclosure monitoring frameworks instead of introducing new reporting or monitoring obligations. Under these systems, companies already submit annual environmental disclosures and pollutant discharge permit reports and, when applicable, ETS compliance reports. This recommendation, instead of requiring additional reporting, focuses on improving the accessibility of the public to this information by making it easily digestible.

The integration of the ETS dataset into the Blue Map in particular would allow the public to track progress towards China's carbon goals. It would let citizens see how individual companies are performing on greenhouse gas emissions. This builds toward a clearer overall picture of China's progress on its climate pledges: cutting CO₂ intensity over 65% below 2005 levels by 2030 and reaching peak emissions before 2030 and carbon neutrality before 2060.¹⁴⁸

That said, it is important to note possible challenges. These include increased need for technical resources within the IPE and CNEMC. The IPE would require additional resources to analyse the data from these disclosure systems and to consolidate them into one profile. On the other hand, the CNEMC would require technical resources to develop a direct data transfer between the reporting databases and the Blue Map database. Another challenge includes resistance from companies to the addition of new data to these profiles due to concerns of reputational risks and public pressures as a result of the facilitation of data access to the public and stakeholders. Finally, the last challenge includes requirements for strong coordination between national and provincial authorities. Differences in the infrastructure of these digital systems across provincial governments could slow the implementation of data sharing into the Blue Map.

Mandatory Improvement Action Plans

CITI scores are used to measure how well companies have responded to GSCI incentives. However, currently, a poor score carries no consequence besides potential reputational damage to the company. This recommendation would introduce a three-tier ranking based on CITI scores: green, yellow, and red. Green would represent a score of 80 and above, yellow a score between 60 and 79, and red a score below 60.

Based on these rankings, each tier would face different consequences. Green companies would be highlighted in the CITI rankings as exceptional performers, giving them potential preference from stakeholders and investors. Yellow companies would be required to submit environmental improvement plans to the

¹⁴⁸ H. Liu, Z. Zhang, W. Song, and X. You, 'The Carbon Brief Profile: China', 29 November 2023, <https://interactive.carbonbrief.org/the-carbon-brief-profile-china/index.html>

IPE and MEE, addressing whatever shortfalls led to their score. Red companies would face the strictest consequence: exclusion from the GSCI until they submit and carry out a corrective improvement plan. Yellow and red companies required to submit these plans would have their progress tracked publicly through the IPE's website.

This new ranking system would support two of IPE's core goals: strengthening the enforcement of environmental compliance and giving companies a reason to adopt greener supply chains. The second goal matters in particular because a lack of incentive to do so has been identified as a major barrier to pollution control in China.¹⁴⁹

To ensure effectiveness, the implementation of this recommendation would require participation from the IPE, MEE, environmental experts, corporate sustainability specialists, participating brands, and environmental consultants. With the participation of these parties, the policy recommendations would continue to be implemented as the following steps:

- 1) Expansion of the CITI evaluation criteria by the **IPE** and **MEE** to include the newly selected categories: >80 (green), 60-79 (yellow), and <60 (red)
- 2) Assignment of category classifications by the **IPE** based on environmental performance.
- 3) Requirement for improvement plans by the **IPE** and **MEE** for yellow and red companies. This would include required pollution reduction measures, emission reduction targets, monitoring procedures, and expected timelines
- 4) Progress monitoring by the **IPE**, **investors**, and **business partners**.
- 5) Implementation of consequences by the **MEE** for companies that fail to submit or carry out their improvement plans, including fines and increased inspection frequency. In addition, the **IPE** would disclose noncompliance through the Blue Map.

This recommendation is feasible because it builds on frameworks already in place: the GSCI, CITI, and the Blue Map, rather than creating new ones. The GSCI already relies on brand participation, driven by reputational and commercial incentives for greener supply chains. This willingness to participate has been demonstrated through the GSCI itself and also in other similar projects. For example, the World Economic Forum's Tropical Forest Alliance launched a similar effort in 2023, the Taskforce on Green Value Chains for China, to combat commodity-driven deforestation.¹⁵⁰ Many brands, such as Bunge, Cargill, China

¹⁴⁹ QIMA, 'The Power of Information Disclosure in Greening China's Supply Chain' <https://www.qima.vn/sustainability-conference-2018/ipe>

¹⁵⁰ World Economic Forum, 'Businesses to Drive Green Transition of China's Beef, Paper, Palm Oil and Soy Supply Chains', 27 June, 2023, <https://www.weforum.org/press/2023/006/businesses-to-drive-green-transition-of-china-s-beef-paper-palm-oil-and-soy-supply-chains/>

Mengniu Dairy, L'Oréal, and Nestlé, willingly joined. This confirms that companies are willing to take on voluntary sustainability commitments in China when a clear reputational case exists—the same incentive this recommendation depends on.

However, it is important to note potential challenges regarding this policy recommendation. Firstly, companies dropping out of the GSCI would be a risk. Companies joined the GSCI, and therefore CITI, because participation was reputationally beneficial, not because it came with binding consequences. Introducing mandatory improvement plans for yellow and red-rated companies means that, for some companies, the cost of compliance may now outweigh the reputational benefit of participating at all. If so, rather than improving their practices, these companies may simply withdraw from the GSCI and CITI altogether. This reduces the very participation the recommendation depends on to work.

A second challenge is government unwillingness. This recommendation would require the development of new government frameworks around penalties. This would result in additional administrative tasks, such as the need for additional staff and funding to review submitted plans. It would also require the MEE to agree to take on a more active enforcement role, applying fines and inspections for non-compliance.

Environmental Protection and Restoration Funds

According to this recommendation, companies identified repeatedly as non-compliant in regard to pollution reduction and sustainable management under the Blue Map and CITI evaluations would be required by the MEE to contribute to a newly established Environmental Restoration Fund. The size of each contribution would be determined according to the severity and recurrence of the company's environmental impacts. The Fund would finance the restoration of degraded ecosystems such as grasslands, mudflats, mangroves, and deserts, which have been characterised as some of the most affected in China.¹⁵¹

Through the Environmental Restoration Fund, funds from polluting companies would be allocated to the development of nature-based solutions¹⁵² to increase natural protection in the face of climate change, such as increasing surface temperatures, sea level rise, flooding, and tropical cyclones.¹⁵³ The progress of this restoration would be monitored through the use of indicators, including species richness, vegetation biomass, carbon dynamics, soil development, and

¹⁵¹ *Convention on Biological Diversity*, 'China - Country Profile'

¹⁵² Nature based solutions are those which address challenges such as climate change and risk reduction through restoration and modification of ecosystems.

¹⁵³ H. Liu, Z. Zhang, W. Song, and X. You, 'The Carbon Brief Profile: China', 29 November 2023

nutrient cycling.¹⁵⁴ Ultimately this recommendation would ensure that the restoration of the affected ecosystems is supported by the causing companies and industries.

The implementation of this recommendation would require the participation of the MEE, China's National Development and Reform Commission (NDRC), the Ministry of Natural Resources (MNR), and local governments, building on responsibilities these institutions already hold. The NDRC and the MNR already participate in coordinating national ecosystem restoration planning and have jointly developed the Master Plan for National Key Ecosystem Protection and Restoration Major Projects (2021–2035), which established a framework for major restoration projects across the country.¹⁵⁵ The MEE, meanwhile, oversees pollution control and environmental compliance, supervises ecological protection, and contributes to decisions on environmental investments.¹⁵⁶ These existing responsibilities would provide the institutional basis for identifying polluting companies, determining where restoration is most needed, allocating funding, and overseeing restoration projects. The recommendation would build on this existing division of responsibilities through the following steps:

- 1) The **MEE** would identify companies required to contribute to the Fund, using repeated environmental violations recorded on the Blue Map and poor environmental management performance under CITI as supporting evidence. The MEE would then determine contributions according to the severity and recurrence of each company's environmental impacts.
- 2) The **MNR** would identify the priority ecosystems suffering from the greatest environmental degradation on which identified brands and their suppliers have the greatest impact.
- 3) The **NDRC** would coordinate national funding priorities and help implement restoration projects with aid of local governments and conservation organisations/specialists.
- 4) Monitoring of restoration outcomes through the use of selected indicators with the help of conservation organisations overseen by the **MEE** and local EEBs.
- 5) The **IPE** would integrate data regarding restoration commitments and project progress into the Blue Map, allowing for tracking of company contributions and transparency regarding fund allocations.

¹⁵⁴ GIZ, 'Tools and Applications for Ecosystem Restoration Monitoring', December 2023, https://www.international-climate-initiative.com/fileadmin/iki/Dokumente/Publikationen/Projekte/21_III_118/giz24_UN-Decade_Tools_and_Applications_for_Ecosystem_Restoration_Monitoring.pdf

¹⁵⁵ *Climate Cooperation China*, 'Policy Summary on the "Master Plan for National Key Ecosystem Protection and Restoration Major Projects (2021-2035)"', 16 July, 2020, <https://climatecooperation.cn/environment/policy-summary-on-the-master-plan-for-national-key-ecosystem-protection-and-restoration-major-projects-2021-2035/>

¹⁵⁶ MEE, 'Mandates', https://english.mee.gov.cn/About_MEE/Mandates/

Through the participation of the mentioned parties, this recommendation proves to be politically feasible, as China has previously implemented restoration efforts on a large scale. Since the late 1990s, restoration projects have been used for terrestrial and aquatic ecosystems, which have resulted in increased tree plantations of 900,000 km², restoration of 1,000 km of coastline, and 96 km² of coastal wetlands between 2011 and 2018.¹⁵⁷ The latest restoration efforts focus on increasing biodiversity and ecosystem integrity, which highlights China's increasing commitment to climate change action and biodiversity conservation.¹⁵⁸

Currently, China's ecosystem restoration efforts are financed through funding from the central government and local governments, alongside voluntary contributions from the private sector, international organisations, and non-profit organisations.¹⁵⁹ Rather than creating a separate system for restoration, the proposed Fund would build on this existing structure by introducing mandatory contributions from companies identified as repeated polluters. This allows companies to support environmental restoration without carrying it out themselves, as specialised government agencies and conservation organisations would oversee the scale and direction of investment to various projects.

Potential challenges include a lack of support from local governments, which may pressure local EEBs to limit enforcement against economically important polluters due to concerns that additional financial obligations could cause companies to relocate, reduce investment, and therefore hinder local economic development. In addition, poor design and implementation could result in companies being more willing to make financial contributions to restoration rather than prevent pollution and reduce environmental harm. Lastly, weak coordination between national and local authorities could reduce the effectiveness of restoration efforts and delay project implementation.

Together, these three recommendations reinforce and extend the initiatives already in place. Centralised Environmental Disclosure expands what the Blue Map shows, giving the public a fuller picture of company performance and adding pressure for firms to meet sustainability goals. Mandatory Improvement Plans give CITI and GSCI real teeth, turning a reputational score into a requirement for actual corrective action. Finally, the Environmental Restoration Fund makes repeat polluters pay directly for the ecological damage they have caused, instead of leaving accountability at the level of disclosure alone.

All three recommendations ask the government for a degree of cooperation, but only to an extent China has already shown itself willing to provide. Beijing has

¹⁵⁷ B. Li, S. Wu, F. Hua, and X. Mi, 'The past and future of ecosystem restoration in China', 6 May, 2024, <https://doi.org/10.1016/j.cub.2024.03.057>

¹⁵⁸ Ibid

¹⁵⁹ B. Li, S. Wu, F. Hua, and X. Mi, 'The past and future of ecosystem restoration in China', 6 May, 2024

already mandated broader disclosure requirements, run large-scale ecosystem restoration efforts, and tightened enforcement of existing environmental laws. In addition, the government has already shown it sees Ma Jun and IPE as a partner rather than a threat, as seen in Ma's 2019 appointment as a Special Observer by the Ministry of Ecology and Environment. These recommendations extend that same kind of cooperation.

Conclusion

As Ma Jun shows, leading on climate change is not always about political power. His impact instead comes from strengthening environmental governance through transparency, public participation, and accountability. He has done this while working within China's political system rather than challenging it directly. Instead of relying on protests or political campaigns, Ma Jun built tools that citizens, companies, investors and governments could use to understand environmental problems and respond to them. Ma Jun is proof that effective non-state environmental leadership does not have to look like activism in the traditional sense.

This approach grew out of what Ma Jun saw during his years as a journalist in the 1990s. Traveling across China, he witnessed polluted rivers, degraded ecosystems and weak environmental enforcement. He also saw how difficult it was for people to know the extent of pollution around them or which companies were responsible. This convinced him that greater access to environmental information could create pressure for action. As he later put it: "When I look at China's environmental problems, the real barrier is not lack of technology or money. It's a lack of motivation."¹⁶⁰

Ma Jun put this idea into practice by founding IPE in 2006 and later developing the Blue Map, the Green Supply Chain Initiative, CITI and PITI. Although each initiative works differently, they are built around the same idea: environmental information should not simply be available but should be something people can use. Through his initiatives, citizens can identify polluters, companies can find environmental problems in their supply chains, investors and consumers can consider environmental performance in their decisions, and local governments can be compared on how well they disclose environmental information.

All these efforts have yielded tangible results. The Blue Map has grown into one of China's largest environmental information platforms, with millions of people using it to access pollution data and report environmental problems. Its data has also been used by major companies like Apple and Huawei to identify pollution violations in their supply chains and push suppliers to improve. IPE's later

¹⁶⁰ C. Larson, "01_MA JUN," *Fast Company*, 7 April 2012, <https://www.fastcompany.com/3017827/01ma-jun>

initiatives, which build on Blue Map data, have led to actual action by companies and local governments. GSCI and CITI have pushed companies and suppliers to address environmental problems, while PITI has been linked to fewer pollution violations and more environmental inspections in participating cities.

Ma Jun's approach has also gained attention outside China. IPE has been invited to share its experience with other countries, and environmental organisations abroad have shown interest in developing similar platforms. This shows that Ma Jun's approach has not only worked in China but has also attracted interest as a model that could be used elsewhere. These successes, therefore, not only helped shape the national agenda but also made Ma Jun one of the most visible and influential environmental leaders.

However, this report also shows transparency cannot be seen as a cure-all for environmental degradation or climate change. The data IPE uses can only reflect the environmental picture the Chinese government allows the public to see. If the government does not disclose certain information, IPE has no way of including it, leaving gaps in the picture the platform and initiatives provide.

Even when information is available, its impact still depends on what governments and companies do with it. Authorities need to enforce environmental rules, while companies need to respond to the pressure created by greater transparency. This is particularly clear in the GSCI, which has worked better with multinational companies that face stronger reputational and commercial pressure than domestic companies. This shows the limits of relying on public pressure and voluntary corporate action alone.

These limitations do not take away from Ma Jun's achievements. Without the political power to regulate companies or pass and enforce environmental laws himself, he used the tools available to him to create pressure for change. They do, however, show that transparency should be supported by strong environmental regulations and effective enforcement.

The recommendations in this report build on Ma Jun's initiatives and address the limits of transparency alone. They give Chinese government bodies a greater role in using the information made public to require action from companies that perform poorly based on that data. At the same time, they remain realistic within China's political system, as they largely build on responsibilities that government bodies already have or could realistically take on. In this way, they do not change Ma Jun's approach but add stronger requirements for action rather than relying on public pressure alone.

Overall, the findings of this report support its original argument. Ma Jun has treated access to environmental information as a way to give citizens a greater

role in protecting their environment while pursuing environmental reform from within China's political system rather than through direct confrontation.

The most important thing Ma Jun has done is not found in one platform, database or initiative. His legacy lies in the development of a new model of environmental governance that shifted transparency from a passive principle into an active mechanism. Through his efforts, Ma Jun has set a precedent for holding companies and local government institutions accountable for their environmental impacts. His work shows that meaningful climate leadership does not always depend on political power but can also come from building lasting institutions that help society understand, track and respond to environmental issues. He has shown that even without political power, transparency can create some level of accountability and lead to action in systems where broader change is difficult to achieve. His model may not solve all of China's environmental problems, but it shows that limited progress is still possible where the alternative may be no progress at all.

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