



Program Information Document (PID)

Concept Stage | Date Prepared/Updated: 07-Apr-2020 | Report No: PIDC199138



BASIC INFORMATION

A. Basic Program Data

Country China	Project ID P171644	Parent Project ID (if any)	Program Name Yangtze River Revitalization Program
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date 30-Sep-2020	Estimated Board Date 03-Dec-2020	Does this operation have an IPF component? No
Financing Instrument Program-for-Results Financing	Borrower(s) Ministry of Finance	Implementing Agency National Development and Reform Commission	Practice Area (Lead) Water

Proposed Program Development Objective(s)

To improve institutional arrangements for ecological protection, water pollution abatement and green development in select regions of the Yangtze River Basin

COST & FINANCING

SUMMARY (USD Millions)

Government program Cost	800.00
Total Operation Cost	400.00
Total Program Cost	400.00
Total Financing	400.00
Financing Gap	0.00

FINANCING (USD Millions)

Total World Bank Group Financing	400.00
World Bank Lending	400.00

Concept Review Decision

The review did authorize the preparation to continue



B. Introduction and Context

Country Context

1. **China has embraced rapid and sustained economic growth and social development over the last four decades.** Since the introduction of reforms that shifted the country to a market-based economy, GDP growth has averaged almost 10 percent a year and China has emerged as the world's second largest economy, with its share in the world economy having increased from 1.5 percent in 1978 to 15 percent today. During this same period, income per capita has increased 25-fold, from US\$300 in 1978 to US\$9,770 in 2018, the extreme poverty rate, based on the (2011 PPP) US\$1.90 per day poverty line, fell from 88.3 percent in 1981 to 0.7 percent in 2015, and more than 850 million people were lifted out of poverty. Today, over 59 percent of the population lives in cities compared to less than 20 percent in the 1970s.
2. **However, China's rapid economic ascendance has had severe consequences for environmental sustainability.** China was ranked 120th out of 180 countries for environmental performance across 24 environmental indicators in ten categories¹, including: air quality, water and sanitation, heavy metals, biodiversity and habitat, forests, fisheries, climate and energy, air pollution, water resources and agriculture. This is below that of other upper middle incomes countries such as Turkey, Brazil, Mexico and Russia, among others. Furthermore, expectations of improved environmental quality has also increased alongside people's improved living standards. Reflecting these challenges, the total number of official citizen petitions related to environmental problems between 1995 and 2010 increased 11-fold.²
3. **Recognizing the emergent challenges, China is embarking upon a transition to a more balanced and sustainable economic growth model.** China's national 12th Five Year Plan (FYP, 2011-2015) highlighted the need for 'green development' and committed to establish a resource-saving and environmental-friendly society. The 13th FYP (2016-2020) and the 19th Party Congress Report (October 2017) called for a "beautiful China" founded in a new era of "ecological civilization" by pursuing productivity and innovation-driven development; improving equitable access to basic public services; and reversing environmental degradation. The 2015 Resolution of the State Council for *Acceleration of Ecological Civilization Progress* set goals for water quality and resource management improvements. The 13th Ecological and Environmental Protection FYP (2016-2020) reiterated these goals, setting additional goals for soil pollution control, main water pollutants reduction, water management, and the safety of water for human consumption.
4. **China is now an upper middle-income country with complex development challenges and realizing such transition will require a new set of institutional reforms.** While China has made impressive economic and social development gains, its per capita income and other indicators remain below the average of OECD countries. The next generation of reforms will not only need to sustain the hard-won gains but increasingly focus on productivity increases and innovation, coupled with institutional improvements that can respond to new challenges. Among others, these reforms will need to respond to the changing nature of society and meet increasing demands for improved environmental quality, which emphasizes sustainable resource management, environmental protection and ecological conservation. Addressing these challenges will require improvements in inter-sectoral coordination and

¹ United Nations Environmental Performance Index (<https://epi.envirocenter.yale.edu/>)

² China Environmental Statistics Annual Report, cited in: Lingling, Y, et al. (2013). National capacity, civic organizations and environmental letters from contemporary China. Chinese Public Administration.



inter-jurisdictional cooperation, particularly around natural resources and common pool resources, to avoid competing interests resulting in a tragedy of the commons.

Sectoral (or multi-sectoral) and Institutional Context of the Program

5. **Balanced and sustainable economic growth will require urgently addressing water and environment issues relating to challenges of integrated development and pollution control.** Water security remains a potential constraint on economic growth, with physical water scarcity accentuated by water pollution and water resource degradation. While considerable improvements have been made in land management³ and air pollution reduction⁴ (among others), challenges of water security and quality remain acute. About 86 percent of monitored groundwater sites are polluted and 29 percent of major rivers fail to meet basic quality standards required for sources of drinking water supply⁵. Globally, ten rivers are reported to contribute 90 percent of all marine plastics transported by rivers, with eight found in Asia and many of these originating in China⁶.
6. **These challenges are particularly pronounced in the Yangtze River.** The Yangtze River plays a major role in the historical, cultural and political identity of China. It is the country's social and economic powerhouse and one of the world's most important economic arteries. Home to globally integrated manufacturing supply chains, the Basin contains the majority of the nation's water-polluting industrial activity. Pollution levels have reportedly increased more than 70 percent over the last 50 years, with 42 percent of the country's total sewage discharge and 45 percent of its total industrial discharge. Investing in efforts to reduce the discharge into and the transmission of plastic waste through the Yangtze River has significant returns and important global implications.⁷ The water quality of the Yangtze River is a critical issue given that the river provides drinking water for almost 500 million people, increasing to over 600 million following completion of the South-to-North Water Transfer Project⁸. Many of the relatively easy returns have been realized with improvements in water quality, meaning the control of water pollution is becoming increasingly more complex. Without major policy interventions, water pollution will continue to impose significant economic as well as health-related burdens.
7. **The Government of China (GoC) has announced its national strategy to build Yangtze River Economic Belt (YREB).** The National Development and Reform Commission (NDRC) issuing a 'YREB Development Plan' in 2016 aimed at promoting well-coordinated environmental protection and prioritizing ecological conservation through enhanced green development in the YREB. The nine provinces and two municipalities⁹ of the YREB are home to 599 million people (43 percent of the population) and account for 45 percent of the national GDP. In 2018, the GDP generated in

³ Around US\$ 380 billion spent on soil conservation and reforestation programs has lifted agricultural productivity, and reduced desertification, erosion, and flooding. See Bryan, B. et al. (2018). China's Response to a National Land-System Sustainability Emergency. *Nature*, 559 (7713): 193–204.

⁴ Zheng, S. and Kahn, M. (2017). A New Era of Pollution Progress in Urban China. *J. Econ. Perspectives*, 31(1): 71-92.

⁵ 29 percent of major rivers fail to meet basic quality standards (grades I-III) required for sources of drinking water supply. Source: MEE (2018) Bulletin of Ecology and Environment in China. Ministry of Ecology and Environment, Beijing (Chinese) ([link](#))

⁶ Schmidt, Krauth and Wagner (2017) Export of Plastic Debris by Rivers into the Sea. *Environmental Science and Technology*, 51, 21, 12246-12253. ([link](#)). The eight in Asia include: the Yangtze; Indus; Yellow; Hai He; Ganges; Pearl; Amur; Mekong; with two in Africa – the Nile and the Niger.

⁷ Lebreton et al. 2017, River plastic emissions to the world's oceans, *Nat. Commun.* 8, 15611 doi: 10.1038/ncomms15611

⁸ The direct beneficiaries of the South-to-North Water Transfer have reached over 120 million with the water transfer from the first phase projects of middle and east lines. Source: CCTV news, Dec. 05, 2019, (Chinese) ([link](#))

⁹ Yunnan, Sichuan, Chongqing, Guizhou, Hubei, Hunan, Jiangxi, Anhui, Jiangsu, Zhejiang and Shanghai from west to east



the region was estimated to be USD 5.7 trillion (RMB 40.3 trillion)¹⁰ – placing it as the third largest economy in the world. The region is also important for national food and energy security, producing almost two-thirds of China’s rice, around 50 percent of grain production, more than 70 percent of fishery production and over three-quarters of the nation’s hydropower generation.

8. **An Ecological and Environmental Protection Plan for the YREB was jointly issued by the NDRC, the Ministry of Environmental Protection¹¹, and the Ministry of Water Resources in 2017¹².** The government program for protection and restoration of the Yangtze River is focused on pollution control and ecological conservation (two handholds), promoting the integrated management of water pollution control, water ecosystem restoration, and water resources conservation (three water concerns), addressing pollution from industrial, agricultural, domestic and inland water transport sectors (four pollution source controls), and aims to develop a harmonious, healthy, clean, safe, and beautiful Yangtze River (five goals). These measures have been accompanied by a legislative plan for the Yangtze River Protection Law which is currently under review by the National People’s Congress (NPC).
9. **The GoC also has developed a number of innovative financing programs to support the YREB Development Plan.** In 2018 the Ministry of Finance (MOF) issued the *‘Guiding Opinions on Establishing Eco-compensation and Long-term Protection Mechanism in the YREB’*¹³ indicating that the central government will establish incentive mechanisms and increase fiscal support towards eco-compensation and protection in the YREB. These are accompanied by *‘Management Methods for YREB Green Development Special Investments within the Central Budget’* established by the NDRC in 2019 to support efforts to balance ecological environment protection and economic development.¹⁴ These are intended to further standardize the management of projects and support the green development of the YREB with central budget investment, improve the capital use efficiency, and encourage the mobilization of local and social capital. The MOF has reportedly set aside RMB 18 billion (~US\$2.6 billion) to incentivize and promote eco-compensation in YREB over 2018 to 2020¹⁵.
10. **Revitalization of the Yangtze will build on, and complement, institutional reforms already underway.** The Government has already established a system of river and lake chiefs that creates a network of individuals at local, county, and provincial levels responsible for each section of every major waterway¹⁶. This system creates a platform for collaboration under the lead of the government that has proven useful in coordinating trans-jurisdiction and cross-sector issues and enhancing citizen engagement in basin management. According to a report on the enforcement of the water pollution prevention and control law submitted in August 2019 to the Standing Committee of NPC, China now has over 1.2 million river and lake chiefs with more than 200,000 in the Yangtze River Basin. However, women

¹⁰ China Statistical Yearbook, 2019

¹¹ The Ministry of Environmental Protection is replaced by The Ministry of Ecology and Environment after the 2018 institutional reform.

¹² Ministry of Environmental Protection, National Development and Reform Commission, and Ministry of Water Resources, Yangtze River Economic Belt Ecological Environmental Protection Plan, Launched on July 17, 2017. ([link](#))

¹³ MOF, Guiding Opinions on Establishing Eco-compensation and long-term Protection Mechanism in the YREB. ([link](#))

¹⁴ NDRC, Management Methods for YREB Green Development Special Investments within the Central Budget. ([link](#))

¹⁵ The central government will reward RMB 18 billion to promote the establishment of an ecological protection and restoration mechanism in the Yangtze River Economic Belt ([link](#)).

¹⁶ The River and Lake Chief System is intended to strengthen enforcement and accountability regarding water use control, water quality protection, and restoration of degraded waterways. River chiefs at the village-level are required to patrol no less than once a week, while also promoting river protection and mobilizing the community to assist in the removal of waste.



are still underrepresented. For example, among Chongqing's over 17,000 official river and lake chiefs, only around 1,000 of them are women.

- 11. Future climate change uncertainty requires scientifically sound adaptive management mechanisms that can provide resilient development pathways.** The Yangtze River Basin is dominated by subtropical monsoon climates, with distinct spatial and temporal variation in precipitation resulting in frequent floods and droughts. The climate change forecasts for the Basin are highly uncertain making future predictions very uncertain¹⁷. The basin has a strong infrastructure platform to help address issues of variability, with more than 50,000 dams in the Basin and significant investments in flood protection measures to mitigate the impacts of floods and droughts. Further enhancing resilience in the face of this uncertainty requires more integrated disaster management approaches, such as applying natural-based solution and improving data monitoring and sharing. Unpredictable future climate conditions advocate for adaptive management measures founded in sound data and analytics and the implementation of robust decision-making under uncertainty principles.

Relationship to CAS/CPF

- 12. The proposed Program is aligned with the World Bank's Country Partnership Framework (FY2020-2025 Report No. 117875-CN) and the new phase of engagement.** As the China-World Bank Group (WBG) partnership embarks upon a new era after 40 years of collaboration, the CPF is focused on China's remaining institutional gaps and the country's contribution to global public goods. This shift is consistent with the country's own development strategy as an upper middle-income country in pursuit of a rebalanced growth model and focused on the construction of an ecological civilization. Recognizing the changing context, the CPF for fiscal years 2020-2025 reorients the WBGs engagement to remain strong yet increasingly selective with a focus on enhancing institutions.
- 13. The proposed Program is fully aligned with the selectivity criteria, focusing on measures to help address China's remaining gaps in policies and institutions.** The proposed Program will address global public goods and strategic piloting of approaches to balance ecological sustainability with economic productivity in one of the world's most important river basins. The proposed Program contributes to Engagement Area 2 of the CPF, promoting greener growth by reducing water and marine plastic pollution and strengthening sustainable management of natural resources. Many of the lessons are expected to be highly relevant for addressing sustainable river basin development and issues of water pollution in other developing countries.

Rationale for Bank Engagement and Choice of Financing Instrument

- 14. The proposed Program has been requested to support the Government's efforts at improving institutional coordination and financing mechanisms for pollution control and ecological protection in the YREB.** The proposed thematic areas are intended to help respond to the new operating environment that promotes institutions for sustainable economic and equitable social development, along with maximizing financing for development, addressing global public goods and generating knowledge relevant to the Bank's goals. Activities will be developed in line with the Government's strategic vision (e.g. FYPs) and build on recent Bank analytical work, including the Country

¹⁷The studies of climate change impacts on floods and droughts in the Yangtze River have significant uncertainty. For example, the World Wide Fund for Nature (WWF, 2009) study indicated that climate change had little effect on the total amount of water resources in the Yangtze River Basin over the past 50 years and the Yangtze River precipitation will remain stable in the future. Cao et al. (2011) predicted the decreases in precipitation and streamflow in the Basin at the end of the 21st century, while Zhang et al. (2006) indicated that the middle and lower reaches of the Yangtze River basin are projected to experience more extreme precipitation. [WWF, 2019 ([link](#)), Cao et al. 2011 ([link](#)), Zhang et al. 2006 ([link](#))]



Water Resources Assistance Strategy¹⁸ and the Water Governance Strategy¹⁹ prepared with the Development Research Center of the State Council ("the DRC").

15. **The proposed program is envisaged as a series of linked operations that contribute to the broader goals in the Yangtze River.** Given the scale and complexity, as well as the administrative realities of China's fiscal responsibilities at the provincial level, it is proposed to use a results-based financing approach. This is currently proposed as a Program-for-Results (PforR) with the option of using the new provisions for Investment Project Financing with Performance-Based Conditions (IPF-PBC) to be explored further during preparation as a potential alternative. A series of individual loans to participating provinces are envisaged and proposed to be structured around a horizontal Multi-Phased Program (MPA). A central IPF component is proposed to finance technical assistance associated with the verification agents and support other cross-jurisdictional activities at the basin scale.
16. **The results based approach provides an opportunity to introduce performance-based incentives** that are intended to leverage Governments' own program and promote cross-sectoral and inter-jurisdictional initiatives aimed at addressing more sustainable management of shared, common pool resources in the Yangtze River basin. This will also provide incentives to take successful measures to scale and is expected to:
 - i. Incentivize cross-sectoral coordination and inter-jurisdictional cooperation
 - ii. Promote ecological protection and restoration through improved natural resource management
 - iii. Improve water quality and reduce pollution, including the transport of marine plastic debris
 - iv. Strengthen investment planning and efficiency, and leverage domestic / commercial financing
 - v. Enhance the management systems through knowledge generation, exchange and citizen engagement
17. **A detailed review of Government programs supporting the YREB will be carried out during project preparation.** The Government has a number of financing programs that reflect the spectrum of investments required to address the complex, multi-sectoral challenges around improving coordination and optimizing of investments in support of the objectives behind the YREB. These are not necessarily mutually exclusive and include: (i) public financial flows (such as eco-compensation mechanisms); (ii) public-private flows (such as creating incentives for improved deployment of capital under the various development funds); and (iii) private flows (through the enabling environment for the private sector and mobilization of social capital).

C. Program Development Objective(s) (PDO) and PDO Level Results Indicators

Program Development Objective(s)

18. **The proposed Program Development Objective** is to *improve institutional arrangements for ecological protection, water pollution abatement and green development in select regions of the Yangtze River Basin.*

PDO Level Results Indicators

19. **Indicators will be identified to measure achievements for each of the following five proposed results areas.** The final section of Disbursement-Linked Indicators (DLIs) will depend on the final selection of Provinces. These will be aligned with the Government's priorities in the YREB and expected to reflect and measure success in achieving the PDO.

¹⁸ World Bank (2002). China: Country Water Resources Assistance Strategy. Washington, D.C. ([link](#))

¹⁹ World Bank and Development Research Center (2019). Watershed: A new era of water governance in China (Policy Brief). Washington, D.C. and Beijing. ([link](#))



Results Area 1: Enhancing Institutional and Governance Mechanisms. The first results area aims to promote continued institutional improvement, improve inter-jurisdictional cooperation, and enhance cross-sectoral coordination. This will be facilitated through integrated water and environment management plans that will need to be developed and implemented through multi-sectoral process, and the operationalization of cross-jurisdictional trading platforms. These may include eco-compensation mechanisms, pollution emission and discharge rights trading, or land swaps to incentivize ecological protection and or address reductions in pollution.

Results Area 2: Advancing Ecological Protection and Restoration. The second results area aims to improve the ecosystem restoration and protection in the Yangtze River by supporting the development, adoption and implementation of a river integrity indexing system and establishing targets for selected sub-catchments, the determination of ecological flow requirements for sustaining the agreed desired future ecological state of the selected river reaches, followed by investments to ensure long term restoration and protection of the ecosystem services they provide.

Results Area 3: Abatement of Water Pollution and Transmission of Plastic Waste. The third results area aims to improve water quality by introducing international good practices for water pollution abatement, including pollutant audits and source analyses, studies on the transportation and fate of key pollutants, including plastic waste, development of water quality management plans, coupled with emission trading mechanisms.

Results Area 4: Promoting Green Development. The fourth results area aims to improve the capital use efficiency through targeted improvements in ecological compensation mechanisms, and encourage the mobilization of private and social capital in support of green development through innovative financing options that create and expand the market for “blue” investments, including development of blue financing policies, regulations, guidelines, standards and transparent monitoring, reporting and verification protocols.

Results Area 5: Strengthening Knowledge and Engagement. The fifth results area aims to enhance the generation, exchange and access to information, leverage the river chief system to provide a robust platform for data collection and information dissemination with increased citizen engagement, including opportunities to strengthening the capacity of provincial governments and regional organisations to engage stakeholders and influence behaviors around ecological protection, pollution control and green development.

D. Program Description

PforR Program Boundary

- 20. The proposed Bank-financed program is intended to support the Government’s priorities in the Yangtze River Economic Belt.** It is proposed to focus on improving institutional coordination and integrated development through investments in the proposed 14th Five Year Plan that contribute to water pollution control and ecological protection targets in the Yangtze River Basin. IBRD financing in the amount of US\$ 400 million will support loans to several selected provinces in the first phase engagement. This is expected to leverage significant Government financing as part of the commitments to the national strategy for the Yangtze River Economic Belt. Government investments include existing public transfers through eco-compensation as well as other investment vehicles. In addition, there are a number of provincial mechanisms. These will be confirmed during preparation. The activities to be supported would be mapped to the five main results areas to improve outcomes associated with the YREB Development Plan. The proposed Program will also include interventions aimed at strengthening program management, monitoring,



evaluation and verification, as well as knowledge generation, exchange, advocacy and replication. The implementation arrangements will be aligned with the Governments YREB Development Plan.

21. **Provinces will be selected based on a competitive call for proposals using an agreed set of criteria.** The criteria to be used to inform the selection of provinces have been discussed with NDRC and MOF. These are aligned with government priorities for the YREB and respond to the new operating environment outlined in the CPF. Pure infrastructure projects with no institutional or policy elements will not be supported. This reflects the shift toward results-based and policy programs which offer effective platforms for strengthening government programs and enhancing high quality development in response to China's development challenges in the new era. While the final selection criteria may evolve, and the relative weights afforded to the different elements are to be confirmed, they include the following:
- i. Improving sectoral coordination of spatial development and encouraging inter-jurisdictional cooperation of spatial development
 - ii. Prioritizing ecological conservation through enhanced green development and promoting well-coordinated environmental protection and sustainability
 - iii. Existence of 'Provincial YREB Development Implementation Plan' or equivalent, such as 'Provincial (Yangtze) River / Lake Protection Plan' and / or Eco-Compensation Programs planned or under implementation, supporting regulations in place or planned to be developed
 - iv. River Chief System in place and operational (or planned and under development) and or Redlines for 'Ecology' or 'Strict Water Resources Management ' delineated or planned to be
 - v. Strategic or innovate pilots that have the potential for replicability within China and or globally

E. Initial Environmental and Social Screening

22. **The Program's investments are not expected to induce any long term or irreversible environmental or social impacts.** The program outcomes are intended to improve ecological protection and water pollution abatement in the Yangtze River Basin and are not expected to induce any long term or irreversible environmental or social impacts. Any potential adverse environmental or social impacts are anticipated to be limited in scope and be site specific.
23. **An Environmental and Social System Assessment (ESSA) will be prepared, consulted upon, and disclosed prior to appraisal.** The ESSA will examine the scope, context and potential impacts of the Program from an environmental and social perspective. It will entail the review of environmental and social management systems and of the implementing capacities of the respective government agencies that will participate in the Program and evaluate their consistency with the core principles and attributes specified in OP 9.00.
24. **Program investments will be screened to assess if any Category A-type interventions are included.** Such investments will not be part of the program, as stipulated in OP/BP 9.0, and accordingly the team will make sure that planned investments do not cause any significant adverse environmental or social impacts that are sensitive, long-term or irreversible and that such impacts are site specific, mostly reversible and can be effectively mitigated with local resources.



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