



Combined Project Information Documents / Integrated Safeguards Datasheet (PID/ISDS)

Appraisal Stage | Date Prepared/Updated: 14-Feb-2018 | Report No: PIDISDSA20582



BASIC INFORMATION

A. Basic Project Data

Country China	Project ID P158622	Project Name Hezhou Urban Water Infrastructure and Environment Improvement Project	Parent Project ID (if any)
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date 06-Nov-2017	Estimated Board Date 15-May-2018	Practice Area (Lead) Water
Financing Instrument Investment Project Financing	Borrower(s) People's Republic of China	Implementing Agency Hezhou Project Management Office	

Proposed Development Objective(s)

The objectives of the Project are to improve flood risk management and reduce discharge of water pollutants in Hezhou Municipality.

Components

- Component 1: Improving He River Flood Risk Resilience
- Component 2: Improving Urban Drainage and Wastewater Management
- Component 3: Institutional Strengthening, Capacity Building and Project Management

Financing (in USD Million)

Financing Source	Amount
Borrower	209.40
International Bank for Reconstruction and Development	150.00
Total Project Cost	359.40

Environmental Assessment Category

A - Full Assessment

Decision

The review did authorize the preparation to continue



B. Introduction and Context

Country Context

China has been urbanizing at a very fast rate over the past three decades, bringing with it significant reduction in poverty, and considerable improvement in living standards. However, for many medium- and small-sized cities¹, investments in urban infrastructure, especially in urban water-related assets, have not kept pace. Lack of proper wastewater collection and treatment and inadequate urban flood protection infrastructure have led to serious water pollution of rivers and waterways in many medium and small cities in China. Improving urban water infrastructure and environmental management for medium- and small-sized cities is therefore an important national development goal.

The National 12th and 13th Five-Year Plans for Social and Economic Development (FYP, 2011-2015/2016-2020) prioritize the need to protect environmental and ecological systems as well as improve infrastructure to address urban floods. The plans also highlight the needs to allocate more resources to support the less-developed western provinces in order to improve their infrastructure, strengthen environmental protection, and promote green growth to balance regional economic development in China.

Sectoral and Institutional Context

Hezhou Municipality (Hezhou) is located in northeastern Guangxi Province – bordering Hunan Province to the north, and Guangdong Province to the east. Based on 2012 census data, the city has a total population of 2.32 million, of which one million is urban. The Municipality is comprised of two districts (Babu District and Pinggui District), and three counties (Zhaoping County, Zhongshan County, and Fuchuan Yao Minority Autonomous County). The central urban area of Hezhou is located in Babu District, with a population of 350,000 inhabitants.

Hezhou is one of the poorest cities in Guangxi, with a total GDP of US\$770 million in 2015, and a per-capita GDP of US\$3,264². Hezhou's GDP value is 14% that of in Nanning City, the provincial capital; and the GDP per-capita value is 47% of Nanning City's.

Hezhou has abundant surface water resources, and a complex water system that accounts for nine percent of the city surface area (total city surface area is 11,854 square kilometers). The mainstream He River is the dominant water body – running from the northwest, through the center of the city, and to the southeast in direction. The city also has seven lakes in or around the central urbanized area. Hezhou receives an average annual rainfall depth of about 1,500 to 2,000 mm per year. The He River itself is a major upstream tributary of the Pearl River. Two flood regulation dams are located on the He River, just upstream and downstream of Hezhou municipality.

Hezhou municipality has experienced severe recurrent flooding, and the combination of insufficient urban flood control facilities and improper operation of the river system have left the city vulnerable to severe losses. A total of 32 floods have been recorded since 1950, with the frequency of flooding increasing in more recent years (largely driven by changes in land use due to urbanization, where harder paved surfaces lead to

¹ According to the State Council's Notice [2014] on "Adjustment of City Size Standards", cities with population under 500,000 are categorized as small-sized cities, and cities with population between 500,000 to 1 million are categorized as medium-sized.

² China's per capita GDP is US\$8,280.



more runoff and larger flood levels).

This project will support Hezhou Municipality with integrated water management actions that reduce flood risks and reduce water pollutants discharge. This project takes a holistic, systems view of “flood management” and urban infrastructure upgrading for Hezhou. This is an innovative approach for China, taking lessons from some of the best international practices to incorporate “green and blue infrastructure” into holistic planning and management to improve flood risk reduction, improve urban water quality, and be consistent with China’s goal to promote water-sensitive “sponge cities”.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

The objectives of the Project are to improve flood risk management and reduce discharge of water pollutants in Hezhou Municipality.

D. Project Description

This project includes three components, aiming to improve flood risk management and reduce water pollution through an innovative, integrated systems view of urban water and flood management.

Component 1: Improving Flood Risk Resilience of the He River (US\$137.55 million, of which IBRD loan is US\$49.35 million). The objective of this component is to reduce flood risks along the mainstream He River. This will be accomplished by providing new connections between the mainstream river and its tributaries, thereby allowing flood waters to be diverted through different pathways, dissipating floods, reducing peak flows, and storing water through different parts of the system. At the same time, the flood drainage capacity of the mainstream He River will be enhanced by improving the river banks, restoring flood protection zones, removing flow obstructions, and removing silt buildup.

Component 2: Improving Urban Drainage and Wastewater Management (US\$189.1 million, of which IBRD loan is US\$74.79 million). The objectives of this component are to reduce urban waterlogging, and to reduce water pollution loading into local waterways from urban sewage discharges. Waterlogging will be reduced by providing additional connections among tributaries and lakes (allowing diversion of flood waters away from the urban area), enhancing the flood drainage capacity of tributary rivers and canals, and providing increased system storage in lakes, improved canals, and green infrastructure. Water pollution will be reduced by separating stormwater and sewer drainage systems, and ensuring collection and treatment of all wastewater from old and new urban development areas.

Component 3: Institutional Strengthening, Capacity Building and Project Management (US\$15.82 million, of which IBRD loan is US\$11.32 million). The objective of this component is to improve the capabilities and coordination of water management agencies in Hezhou to manage flood risks and improve urban water quality. This component is comprised of two subcomponents, which are described with their sub-activities below.

Subcomponent 3.1: Institutional Strengthening and Capacity Building (US\$11.32 million, of which IBRD loan



is US\$6.82 million). This subcomponent will support i) Smart Information Systems for Hydrologic, Hydraulic, Environmental, and Ecological Monitoring; ii) Integrated Water Management; iii) Training and Study Tours, and iv) Dam Safety Panel:

Subcomponent 3.2: Project Management and Supervision (US\$4.5 million, fully financed by IBRD loan). This subcomponent will provide institutional support to the PMO by: i) engaging a consulting firm to assist in finalizing the preliminary design, bidding documents, and final engineering designs; ii) advising construction supervisors in contract management; and iii) preparing semi-annual project progress reports, mid-term review, and implementation completion report. The PMO will also engage with third-party consultants to conduct the external Environmental Assessment (EA) and Resettlement Action Plan (RAP) reporting.

E. Implementation

Institutional and Implementation Arrangements

A Project Leading Group (PLG) has been established at the municipality level. The PLG is chaired by the Mayor of Hezhou, and its key members include: Hezhou Development and Reform Commission (DRC), Hezhou Municipal Finance Bureau (HFB), Hezhou Water Resource Bureau (HWRB), Hezhou Municipal Engineering Administration Bureau (HMEAB), and Hezhou Environment Protection Bureau (EPB), as well as other agencies involved in the project preparation and implementation. The PLG will be responsible for strategic project oversight, and providing guidance to the PMO and PIUs throughout the project preparation and implementation.

The Hezhou Project Management Office (PMO) has also been established as a director-level institution affiliated to the Hezhou Development and Reform Commission (DRC). The three Project Implementing Units (PIUs) are: Hezhou Water Resource Bureau (HWRB), Hezhou Municipal Engineering Administration Bureau (HMEAB) and Hezhou Environment Protection Bureau (HEPB).

To ensure the sustainability of investments under the project, the PMO will be responsible for overall project coordination, preparation, management, and supervision; while the HWRB, HMEAB, and HEPB as the PIUs, will be managing and operating the facilities that will be constructed under this project. Below are the roles and responsibilities of each PIU:

- **Hezhou Water Resource Bureau:** to plan and implement the subprojects, and to operate the assets for flood risk resilience and urban drainage improvement under components 1 and 2; and the associated TAs under component 3;
 - **Hezhou Municipal Engineering Administration Bureau:** to plan and implement the subprojects, and to operate the assets for sewerage collection and treatment under component 2; and the associated TAs under component 3;
 - **Hezhou Environment Protection Bureau:** to plan and implement the subprojects, and to operate the asset for environment and ecological monitoring under component 3.
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F. Project location and Salient physical characteristics relevant to the safeguard analysis (if known)

Project components will be located in Hezhou Municipality, a city in the northeast of Guangxi Zhuang Autonomous Region neighboring Hunan Province to the north and Guangdong Province to the east. The project area is subject to subtropical monsoon climate with an average annual rainfall of about 1,500-2,000mm (69.2% during the raining season from April to August). Hezhou is featured by abundant surface water resources and a complex water system which accounts for 9% of the city surface area of 11,854 square kilometers. Among others, He River is the major river running through the city center from north to south. The river section within Hezhou Municipality has a total length of 239km with the catchment area of 7029km². As a municipality upgraded from county level in 2002, Hezhou is still weak in basic infrastructure, in particular, on flood control, drainage and wastewater management. Without a complete flood control system, the city has suffered from frequent floods in the past decades with a total of 31 recorded since 1950. This situation was exacerbated by new development along the banks of He River. Hezhou also lacks a separate storm water drainage system, and the existing combined sewerage-storm collection system is only partially completed. The tributaries of the He River and irrigation canals are used to transfer wastewater to the He River which also serves as drinking water source for the downstream Fengkai County of Guangdong Province and it has thus created environmental concerns.

G. Environmental and Social Safeguards Specialists on the Team

Zhefu Liu, Social Safeguards Specialist
Yiren Feng, Environmental Safeguards Specialist
Xiaodan Huang, Environmental Safeguards Specialist

SAFEGUARD POLICIES THAT MIGHT APPLY

Safeguard Policies	Triggered?	Explanation (Optional)
Environmental Assessment OP/BP 4.01	Yes	The project is designed to assist Hezhou Municipality to address its existing environmental challenges on flood control and water environment improvement. The proposed investments include river rehabilitation, improvement of drainage system (pumping stations and drainage channels/pipes), implementation of sewage collection and treatment system, and strengthening of water and ecological environment monitoring capacity. The project is anticipated with diverse and significant environmental and social impacts. OP4.01 is



therefore triggered and Category A is assigned. Full impact assessment was conducted during the project preparation following domestic EIA law and Bank safeguard policy requirements. The safeguard instruments have been developed to cover the whole project, including the TA activities under component 3, which consist of: (a) Environmental Impact Assessment (EIA) report; (b) Environmental and Social Management Plan (ESMP), including PCR management plan and the ECOPs for different types of subprojects (embankment, small-scale water conservancy works, roads & pipeline network construction).

The policy is triggered because the proposed Bank-financed investments will have impacts on natural habitats along the He River and its tributaries. Per the requirements of OP4.04, survey on aquatic and terrestrial ecosystem were conducted in the project-affected area and no critical/sensitive natural habitat has been identified. The project-related ecological impacts will be generally positive, and the anticipated adverse impacts are short-term, temporary and site-specific. The project has been developed in an environmentally sustainable way considering the protection of local species and biodiversity, and adequate mitigation measures have been incorporated into the ESMP and ECOPs to ensure the potential adverse ecological impacts will be sufficiently addressed during construction and operation.

The project will not finance activities that involve significant conversion or degradation of natural forest or plantations defined under the policy.

The proposed project will neither procure pesticides nor result in the increased use of pesticides. This policy will not be triggered.

The EA process has identified some historical buildings adjacent to the proposed site of river rehabilitation works, which will require special attention and protection during construction. A PCR management plan has been developed as part of the ESMP to specify mitigation measures to avoid, minimize and compensate the project-related impacts. In addition, the RAP survey also found that the subproject of central green corridor will affect 53

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Natural Habitats OP/BP 4.04	Yes		The policy is triggered because the proposed Bank-financed investments will have impacts on natural habitats along the He River and its tributaries. Per the requirements of OP4.04, survey on aquatic and terrestrial ecosystem were conducted in the project-affected area and no critical/sensitive natural habitat has been identified. The project-related ecological impacts will be generally positive, and the anticipated adverse impacts are short-term, temporary and site-specific. The project has been developed in an environmentally sustainable way considering the protection of local species and biodiversity, and adequate mitigation measures have been incorporated into the ESMP and ECOPs to ensure the potential adverse ecological impacts will be sufficiently addressed during construction and operation.
Forests OP/BP 4.36	No		The project will not finance activities that involve significant conversion or degradation of natural forest or plantations defined under the policy.
Pest Management OP 4.09	No		The proposed project will neither procure pesticides nor result in the increased use of pesticides. This policy will not be triggered.
Physical Cultural Resources OP/BP 4.11	Yes		The EA process has identified some historical buildings adjacent to the proposed site of river rehabilitation works, which will require special attention and protection during construction. A PCR management plan has been developed as part of the ESMP to specify mitigation measures to avoid, minimize and compensate the project-related impacts. In addition, the RAP survey also found that the subproject of central green corridor will affect 53



		rural households' graves, which might be viewed connecting to local tradition. All the compensation and relocation measures for those graves have been formally developed in the RAP based on detailed survey and extensive consultation among the owners.
Indigenous Peoples OP/BP 4.10	No	The task team conducted interviews to the leaders of townships and desk reviews to the data information and discussions with the municipal agencies in charge of ethnic minority affairs. The task team concluded that there are no ethnic minorities are in or present in the project areas. The IPDP was not requested.
Involuntary Resettlement OP/BP 4.12	Yes	Collective land and private structures will be required by the project components in both peri-urban areas and rural areas. RAP was required. Social assessment as part of the RAP to analyze potential risks that might influence the project implementation and to approach more mitigation measures that could have better project design and scoping were prepared. Resettlement policy framework was requested to guide the project restructuring if there are new project components to be added into the project that cause involuntary resettlement.
Safety of Dams OP/BP 4.37	Yes	There are three small hydroelectric stations to be rehabilitated under the project and another eighteen existing dams upstream in the river basin were identified as relevant to the project. This policy is therefore triggered considering their potential impacts on the safety of proposed interventions. During project preparation, the dam safety assessment has been conducted for the twenty-one dams and necessary remedial work and safety-related measures have been recommended and included in the ESMP.
Projects on International Waterways OP/BP 7.50	No	No subproject will be located in any international waterways. The policy is not applicable and no action is required.
Projects in Disputed Areas OP/BP 7.60	No	No subproject will be located in any disputed areas. The policy is not applicable and no action is required.



KEY SAFEGUARD POLICY ISSUES AND THEIR MANAGEMENT

A. Summary of Key Safeguard Issues

1. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts:

Environment:

Environmental Assessment (OP4.01). In general, the implementation of proposed project is expected with significant environmental and social benefits, particularly on flood control and water environmental improvement; meanwhile, it is also anticipated that the project construction and operation will bring about diverse negative environmental and social impacts. The policy of OP4.01 is triggered and the project is assigned Category A. During project preparation, the full Environmental Impact Assessment (EIA) and a standalone Environmental and Social Management Plan (ESMP, including ECOPs and PCR management plan) were developed as the environmental safeguard instruments based on the Chinese legal and policy framework, the applicable World Bank's safeguard policies and Environmental, Health and Safety Guidelines. The developed safeguard instruments have covered the whole project, including the TA activities under component 3.

The environmental assessment concluded that the project implementation will not lead to irreversible impacts to the environment and local ecosystems. On the other hand, by adopting an integrated river rehabilitation approach, the following benefits are expected from the project implementation: After rehabilitation, the main stream section of the He River in the urban area of Hezhou will be able to resist the one-in-50years flood events and the annual flood loss for the city will be reduced by about RMB1.7billion (83.2%); the addition of 30,000m³/d wastewater collection and treatment (through the construction of wastewater interceptors and Jiangnan WWTP) will significantly reduce the pollutants discharge into the river every year, including 3148.13 tons of COD, 1505.63 tons of BOD₅, 2053.13 tons of SS, 547.50 tons of TN and 30.38 tons of TP; in addition, the proposed water system circulation and river dredging will further improve water quality, ecosystem and landscape of the involved rivers/lakes in Hezhou.

The project will involve extensive construction activities in the central urban areas of Hezhou Municipality, and there will be some temporary and site-specific environmental and social impacts during construction, including soil erosion, noise, dust, wastewater, solid waste, traffic disturbance and public health and safety risk.

As part of river rehabilitation works, the dredging of He River and its tributaries will lead to the generation of dredged material at a total amount of 184,590m³ (95% water content). The whole process of dredging, sediments dewatering, transportation and their final disposal has been carefully designed to minimize its potential adverse impacts on the environment and nearby communities, such as odor and noise nuisance, water pollution and solid waste pollution. During the EA process, two rounds of extensive monitoring of the dredged sediments have been conducted, and the analysis results confirmed that none of the tested river sediments from the project areas was classified as hazardous waste; however, the failure to comply with the Class III requirements of national soil quality standard made it impossible to apply the dewatered sediments for farming and greening as the final disposal.

The anticipated adverse impacts during project operation are mainly related the operation of Jiangnan WWTP and drainage pumping stations. Based on the EA, with the river's dilution capacity, the impacts of treated effluent from Jiangnan WWTP on the He River will be limited (2.8km downstream of the WWTP outfall for COD level, and 11km for NH₃-N), and its odor and noise impacts will be limited to the scope where there is no sensitive receptor identified. In



addition, the operation of Jiangnan WWTP will generate 0.1t/d of screenings and 3t/d of sewage sludge. During flooding season, the operation of drainage pumping stations will have short-term noise impacts on the nearby residents, which could be minimized to an acceptable level provided appropriate mitigation measures are taken as per project design.

Natural Habitat (OP4.04). During environmental assessment, the survey on local aquatic and terrestrial ecosystem were conducted in the project-affected area and no critical/sensitive natural habitat has been identified. The project-related ecological impacts will be generally positive, and the anticipated adverse impacts are short-term, site-specific and limited to the construction phase.

Physical Cultural Resources (OP4.11). The EA process confirmed that the river rehabilitation subprojects of He River main stream (from Guangming Bridge to Lingfeng Bridge) and Huang'ansi Flood Discharge Channel will have indirect impacts on some nearby ancient buildings on Xiyue Street during construction. Particularly, the 120m-long downstream section of Huang'ansi Channel is part of the provincial-level protected historic quarter, which will require special attention and protection during construction. In addition, the RAP survey also found that the subproject of central green corridor will affect 53 rural households' graves, which might be viewed connecting to local tradition.

Safety of Dams (OP4.37). The project investments will include the rehabilitation of three small hydroelectric stations on the He River and another eighteen existing dams upstream in the river basin were identified as relevant to the project per the policy of OP4.37 considering their potential impacts on the safety of proposed interventions.

Social:

Based on the careful reviews to the legal documentation, the scoping of project components, mitigation measures to be adopted, the negative impacts to the individuals in peri-urban areas and rural areas would be caused by the land acquisition and housing demolition.

The Bank Policy OP 4.12 Involuntary Resettlement is triggered. A Resettlement Action Plan (RAP) has been prepared for serving for the entire project. The RAP provides details on resettlement policy procedures and requirements that will have to be followed during project implementation, including compensation rates, mitigation measures to restore livelihoods, and institutional and monitoring arrangements.

The project will affect 21 villages/peri-urban communities in two municipal districts in rural and peri-urban in Hezhou city. The project will affect 1,880 families/units with 10,044 populations in total. The permanent land acquisition in villages will be about 251 hectares of collective land and the temporary land acquisition will be about 70 hectares. The structure demolitions will be 164,192 square meters, including 93,207 square meters of living housing spaces, 49,278 square meters of shelters, 14,249 square meters of municipal administrative units, and 7,458 square meters of state owned shops with 124 employees. The permanent land acquisition will affect 759 families with 4,563. The housing demolitions will affect 690 families with 3,105 populations, including 373 families with 1,837 populations in rural areas and 317 families with 1,268 populations in peri-urban areas.

The project cut-off-day for accounting on the resettlement impacts was set up as the day of the Bank task team arrival day of the project identification. The resettlement entitlement in the RAP are in consistence with the OP 4.12.

The locally contracted social safeguards consulting team identified the negative impacts to every affected family at village basis, adopted the resettlement policies properly, compensation to be paid at replacement cost and provided



mitigation measures in advance, gender impact analysis and development through public consultation and participatory process.

12 resettlement centralized sites, including 10 rural resettlement sites and two peri-urban resettlement sites, will be constructed to relocate those families who will be affected by housing demolitions. The designs of the resettlement sites will be reached national and provincial standards. The facilities of the resettlement sites will be paid by the project authority and be included into the project budget.

Levels of resettlement offices from municipality, district and township/village will be established under Hezhou PMO to supervise the resettlement implementation. The project city land and resources bureaus will be responsible for guiding the resettlement activities and release land approval for both the project and the resettlement sites. An experienced national consulting team will be contracted to serve as the independent monitoring agency of the resettlement program. The project will be monitored and the living standards of the project-affected people will be evaluated over the course of project implementation. The monitoring results will be regularly reported twice a year and, if needed, remedial actions will be devised.

The task team conducted due diligence reviews to 6 local funded projects that were identified as linkage projects and concluded that there were no resettlement legacy issues remained and no further actions to be needed. Hezhou Wastewater Treatment Plant, Hezhou Solid Wastes Landfill, Jiangbei dike were completed and Hezhou Sludge Harmless Treatment Project were built up in Year 2010, 2007, 2008 and 2006. 19 hectares of collective land were required. Pinggui New City Dike and Jiangnan Dike were completed in 2017. 31 hectares of collective land were required. Due diligence review concluded that the resettlement implementation was carried out in compliance to national laws and provincial regulations and substantial compliance with OP 4.12. The primary design of the project as Hezhou Jintai Lake Water Ecological Integrated Rehabilitation Project and Yongfeng Lake Water Ecological Integrated Rehabilitation Project were expected to be approved by July 30, 2018 and the RAP for those two projects will be sent to the Bank for approval in October 30, 2018.

A resettlement policy framework was prepared to guide the project restructuring or project middle term of review if there are new project components to be added into the project that cause involuntary resettlement.

Social Assessment and Gender: A social assessment was carried out for the preparation of the RAP. It involved various stakeholders, such as government agencies in charge of rural and urban construction, water resources, agriculture, urban planning and land resources, village representatives, and project beneficiaries through public consultation meetings and focus-group discussions and in-depth interviews.

The task team had meetings and interviews in the engaged village communities and did not find out any Chinese ethnic minority in the engaged village communities. All villagers in the project areas are Han populations. Han is not considered as ethnic minority in China based on the Bank indigenous people policy and previous practice in China. The task team concluded that there were no ethnic minority communities under Bank Op 4.12 in or presented in the project areas and IPDP was not requested.

2. Describe any potential indirect and/or long term impacts due to anticipated future activities in the project area: Located in a populated region, the Hezhou River Basin has been long developed for irrigation, navigation, hydropower generation and urban development. The latest development plans for the He River Basin indicate that the future development in the region will focus on the improvements of flood control, water supply security, water resource



protection, ecological rehabilitation and integrated watershed management. The proposed project is in line with the river basin development plan. As part of the EA process, the analysis has been conducted to examine potential cumulative impacts of the project in association with other existing, planned and reasonably anticipated development activities identified in the river basin. The assessment concluded that the anticipated cumulative impacts were generally positive. By 2030, the proposed project, together with the implementation of reasonably anticipated development activities in the basin, will complete the flood control system for the main stream of He River against the one-in-50 years' floods, and the regional storm drainage capacity of Hezhou will be improved to cope with the 1-in-20 years' storm events. It is estimated that the consequent reduction of flood-resulting economic loss will accumulate to a total amount of RMB202.37million per year by 2030. In terms of wastewater management, the construction of wastewater interception and treatment facilities (including Jiangnan WWTP and wastewater interceptors under the project) in the basin will make significant contribution to the improvement of river water quality by reducing the pollutants discharge into the He River, respectively 45365kg/d of COD and 5325kg/d of NH₃-N by 2030. The negative cumulative impacts anticipated from the project in combination with other identified development activities will be limited to the construction period in relation to large-scale resettlement and traffic disturbance in the city, which could be mitigated to an acceptable level with the carefully designed implementation plan and effective project management by the municipal governmental agencies.

3. Describe any project alternatives (if relevant) considered to help avoid or minimize adverse impacts.

During project preparation, the EA team has worked with the project owners, the implementing agencies, the FSR team and the RAP/SA team to conduct a comprehensive alternative analysis, and the optimal design has been selected based on technical, economic, environmental and social considerations. The following were given attention during the process.

- (i) With/without project scenario: The project will bring significant improvements to the infrastructure and subsequently significant environmental and social benefits by improving the flood control and storm drainage capacity of Hezhou Municipality. It is expected that, with the project implementation, the reduction of flood-resulting economic loss will be about RMB 2billion every year. The project is also designed to reduce wastewater and consequently pollutant discharge into the He River to improve its water environment. Without the project, Hezhou will remain vulnerable to floods, and the direct discharge of domestic wastewater into the He River and its tributaries will probably further deteriorate the water quality of the river. Hence the "With Project" scenario was preferred.
- (ii) For river dredging, four types of dredging approaches have been considered and the selection was made in view of subproject scale and potential impacts on sensitive environmental receptors nearby.
- (iii) Instead of being simply demolished, three existing hydroelectric stations will be rehabilitated to reduce the project investment and to minimize the potential environmental and social impacts.
- (iv) For the proposed WWTP, the alternative analysis has been conducted in term of site location, treatment process, location of effluent outfall and pipeline material. The details are provided in the EA report.

4. Describe measures taken by the borrower to address safeguard policy issues. Provide an assessment of borrower capacity to plan and implement the measures described.

Environment

During the project preparation, the project proponent engaged a qualified EIA consulting team to conduct a thorough environmental assessment following the national regulations and the Bank's safeguard policy requirements. EA



instruments prepared include: (i) an Environmental Impact Assessment (EIA); (ii) an Environmental and Social Management Plan (including three Environmental Code of Practice (ECOPs) and a Physical Cultural Resource Management Plan (PCR management plan)); and (iii) an Environmental and Social Assessment Executive Summary.

To enhance the anticipated environmental benefits and to properly address the adverse impacts, the project has developed and integrated the preventive and mitigation measures into the project design, construction and operation in the forms of EIA and ESMP. As part of the ESMP, a set of ECOPs were prepared to cope with various impacts resulting from the construction of three types of investments, including embankment, small-scale water conservancy works, roads and pipeline network.

As mentioned before, the whole process of dredging, sediments dewatering, transportation and their final disposal has been carefully designed to minimize its potential adverse impacts on the environment and nearby communities, such as odor and noise nuisance, water pollution and solid waste pollution. Two temporary drying sites have been proposed beside the He River to dewater the dredged sediments from the main stream, Huang'ansi and Shizigang to the water content of 50%; and the sediments from the other smaller tributaries will be directly collected and dewatered with the mobile dewatering system on the sites to the water content of 50% for transportation. Based on the results of sediments characterization, the dewatered sediments (with a total volume of 18,459m³, 50% water content) will be sent to the adjacent Hezhou Sanitary Landfill Site for final disposal as per the national standard requirements.

The project has been developed in an environmentally sustainable way considering the protection of local species and biodiversity, and adequate mitigation measures have been incorporated into the ESMP and ECOPs to ensure the potential adverse ecological impacts will be sufficiently addressed during construction and operation.

A PCR management plan has been developed as part of the ESMP to specify mitigation measures to avoid, minimize and compensate the project-related impacts on identified physical cultural resources. All the compensation and relocation measures for the affected rural households' graves have been formally developed in the RAP based on detailed survey and extensive consultation among the owners.

During the operation of Jiangnan WWTP, the sewage sludge will be dewatered at the Hezhou Sludge Treatment Centre to the water content of 60% and then be sent to the landfill site for final disposal.

Institutionally, the Hezhou Municipal Government has established a Project Leading Group (PLG, chaired by the Mayor) to provide the strategic project oversight and guidance to the Project Management Office (PMO) and Project Implementation Units (PIUs) throughout project preparation and implementation. The PMO and PIUs have no experience with Bank-financed project, and a comprehensive safeguard capacity building program has been developed as part of the project ESMP to ensure adequate and effective project management in accordance with the Bank safeguards policies and procedures. The ESMP also details the environmental monitoring program for construction and operational phases to track its effectiveness. The ESMP, including the ECOPs and the PCR management plan, will be included in the bidding documents and the corresponding contracts to ensure their implementation. In addition, an experienced project management consultant will be engaged during project implementation to support day-to-day project management and construction supervision to the PMO and PIUs, including the implementation of applicable safeguards policies.

Safety of Dams (OP4.37). During project preparation, the dam safety assessment has been conducted for all the twenty-one dams. and necessary remedial work and safety-related measures have been recommended and included



in the ESMP.

Social

The PMO contracted experienced institute to guide the social safeguards documentation and the staff in the engaged districts and townships were getting familiar to the Bank safeguards policies. The on-job safeguards training processes to the local officials contributed to the resettlement impact survey, understanding to the importance of the cut-off-day, resettlement impact analysis, mitigation measures to reduce impacts on land acquisition and housing demolition, and project potential risks, modification to the resettlement impacts available to this project, public consultations at stages of the RAP preparation, etc.

An experienced national consulting team will be contracted to serve as the independent monitoring agency of the resettlement program. The project will be monitored and the living standards of the project-affected people will be evaluated over the course of project implementation. The monitoring results will be regularly reported twice a year and, if needed, remedial actions will be devised. The staffs from the PMO and agencies are getting familiar to the Bank requirement, specific to the safeguards requirement.

Levels of GRM will established to deal with the concerns or complains from the displaced persons, such as; PIUs, Hezhou PMO, Hezhou municipal department in charge of citizens complains, court at the city and resettlement monitoring institute. Resettlement information booklets will be disseminated to the displaced families prior to the project implementation.

Local safeguards staff will be assigned at the PIUs and PMO to supervise the resettlement activities. Relevant social safeguards trainings were provided for those who will work on the resettlement and on-job training courses will be continued at the beginning of the project implementation by both the Bank team and independent resettlement monitoring institute.

5. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

During the preparation of EIA/ESMP, key stakeholders have been identified to ensure the implementation of well-targeted and meaningful public consultation for the project. Two rounds of public consultation were conducted with the participation of general public and identified key stakeholders. The first round took place in April 2016 and February 2017. The second round was carried out after the draft EA report was completed in September 2017. The project information was disclosed at project-affected communities and government websites before each round of consultation. These consultations took various forms including questionnaires, interviews and meeting with project-affected people and experts. The EA and ESMP incorporated countermeasures to address the concerns of consulted people. In addition, the public consultation mechanism for construction phase was also included into the ESMP. The EIA and ESMP were disclosed at the Bank's external website on Oct. 22, 2017 and Oct. 23 respectively.

The project has significant social benefits, as it supports the improvement to municipal infrastructure and village facilities, the enhancement of the flooding management in both peri-urban and urban areas, the improvement to living environment of citizens in the city, and the promotion to the development of tourism at village based and rural family based. Citizens in the city will be the project main beneficiaries.



During the project preparation process and the stages of the project design, public consultations were conducted and will be continuous by the resettlement offices and municipal land resources bureau in the engaged districts and townships and the independent monitoring agency. The project information was disseminated to the displaced families for refining the project design, selections of the subprojects and the locations of the subprojects.

The draft RAP and RPF were disclosed at the Bank’s external website on Oct. 24 and December 18, 2017 respectively.

B. Disclosure Requirements

Environmental Assessment/Audit/Management Plan/Other

Date of receipt by the Bank	Date of submission for disclosure	For category A projects, date of distributing the Executive Summary of the EA to the Executive Directors
22-Oct-2017	23-Oct-2017	01-Feb-2018

"In country" Disclosure

China
12-Oct-2017

Comments

Resettlement Action Plan/Framework/Policy Process

Date of receipt by the Bank	Date of submission for disclosure
20-Oct-2017	24-Oct-2017

"In country" Disclosure

China
20-Oct-2017

Comments

The Resettlement Action Plan was disclosed to public on October 20, 2017 while the Resettlement Policy Framework was disclosed to public on December 14, 2017.

C. Compliance Monitoring Indicators at the Corporate Level (to be filled in when the ISDS is finalized by the project decision meeting)

OP/BP/GP 4.01 - Environment Assessment



Does the project require a stand-alone EA (including EMP) report?

Yes

If yes, then did the Regional Environment Unit or Practice Manager (PM) review and approve the EA report?

Yes

Are the cost and the accountabilities for the EMP incorporated in the credit/loan?

Yes

OP/BP 4.04 - Natural Habitats

Would the project result in any significant conversion or degradation of critical natural habitats?

No

If the project would result in significant conversion or degradation of other (non-critical) natural habitats, does the project include mitigation measures acceptable to the Bank?

Yes

OP/BP 4.11 - Physical Cultural Resources

Does the EA include adequate measures related to cultural property?

Yes

Does the credit/loan incorporate mechanisms to mitigate the potential adverse impacts on cultural property?

Yes

OP/BP 4.12 - Involuntary Resettlement

Has a resettlement plan/abbreviated plan/policy framework/process framework (as appropriate) been prepared?

Yes

If yes, then did the Regional unit responsible for safeguards or Practice Manager review the plan?

Yes

OP/BP 4.37 - Safety of Dams

Have dam safety plans been prepared?

Yes

Have the TORs as well as composition for the independent Panel of Experts (POE) been reviewed and approved by the Bank?

Yes

Has an Emergency Preparedness Plan (EPP) been prepared and arrangements been made for public awareness and training?

Yes

The World Bank Policy on Disclosure of Information



Have relevant safeguard policies documents been sent to the World Bank for disclosure?

Yes

Have relevant documents been disclosed in-country in a public place in a form and language that are understandable and accessible to project-affected groups and local NGOs?

Yes

All Safeguard Policies

Have satisfactory calendar, budget and clear institutional responsibilities been prepared for the implementation of measures related to safeguard policies?

Yes

Have costs related to safeguard policy measures been included in the project cost?

Yes

Does the Monitoring and Evaluation system of the project include the monitoring of safeguard impacts and measures related to safeguard policies?

Yes

Have satisfactory implementation arrangements been agreed with the borrower and the same been adequately reflected in the project legal documents?

Yes

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APPROVAL

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