Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

Date Prepared/Updated: 11/28/2022 | Report No: ESRSA02442

BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
China	EAST ASIA AND PACIFIC	P176989	
Project Name	China Plastic Waste Reduction Project (Shaanxi)		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Environment, Natural Resources & the Blue Economy	Investment Project Financing	11/28/2022	3/28/2023
Borrower(s)	Implementing Agency(ies)		
People's Republic of China	Provincial level Development and Reform Commission Foreign Capital Financed Project Management Offic		

Proposed Development Objective

To reduce plastic pollution from municipal solid waste in selected under-served rural areas of Shaanxi Province, improve provincial plastic waste management, and draw lessons on plastic waste management relevant at the national level.

Financing (in USD Million)	Amount
Total Project Cost	340.00

B. Is the project being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

No

C. Summary Description of Proposed Project [including overview of Country, Sectoral & Institutional Contexts and Relationship to CPF]

The project is the second one in a program of World Bank lending to reduce plastic waste leakage in China, with an expansion of engagement to the under-served rural areas compared with the urban focus of phase one. The project will inform plastic waste management at the national level, strengthen subnational MSW institution towards better

integrated rural-urban MSW management and service provision, through policy, technical, and knowledge assistance. The project will also invest in the improvements to below county-level MSW management systems (collection, transfer, sorting, recycling, treatment) in under-served rural areas, to enhance waste service delivery, plastic pollution control, and waste diversion from landfilling. Given the long-term demand and significant disparities in the China's vast rural areas, the success of the project will rely on the cross-departmental coordination by the provincial government, and the policy/technical dialogue between the national and subnational authorities to create an enabling and corrective environment for reform, experiment, and innovation.

D. Environmental and Social Overview

D.1. Detailed project location(s) and salient physical characteristics relevant to the E&S assessment [geographic, environmental, social]

Nearly half of the MSW in China is estimated to originate in rural areas. Rural waste management remains underdeveloped in terms of service coverage, infrastructure and systems, and performance. Shaanxi Province has been selected by the government of China to benefit under this project. The project focus within Shaanxi is the under-served rural areas.

At the stage of Appraisal, most of the specific locations where the physical investments will take place are not yet confirmed. The first batch of activities to be implemented in the first 18 months however, have been confirmed and designed at the Appraisal stage. Based on the information available, the environmental and social (E&S) due diligence provides a broad overview of the environmental and socio-economic situations in the Province of Shaanxi.

Shaanxi Province is in the middle of China, and on the middle of Yellow River and Yangtze River. It has a land area of 205,600 km2. The topography slopes from south and north to the middle, and the landforms are distinctly composed of the Loess Plateau in the north, plains in the middle, and mountains in the south. Its southern part is located within the catchment area of the Yangtze River, while its northern part within the catchment area of the Yellow River. It covers three climatic zones: temperate monsoon climate in the north, warm temperate monsoon climate in the middle, and subtropical monsoon climate in the south. Generally, the climate is featured with distinct seasons with dry and warm spring, wet and hot summer, cool and moist autumn, and dry and cold winter. The annual temperature is 9OC-16OC, and the annual precipitation varies largely from south to north, ranging from 340 mm in the north to 1,240 mm in the south. The Qin Mountains are a major east-west mountain range in southern Shaanxi Province. The mountains mark the divide between the drainage basins of the Yangtze and Yellow River systems, providing a natural boundary between North and South China, and support a huge and unique biodiversity of plant and wildlife., some of which is found nowhere else on earth. In 2020, Shaanxi Provincial Government approved a comprehensive protection plan for the Qinling Mountains and defined protection areas of three categories, i.e. core area, key area and general area. The plan further highlights that the townships and villages within the general protection areas should establish MSW facilities. Among the project counties/districts, three districts of Chengcang, Linwei and Hanbin are partially located in the general area and key area, and Weibin District is in general area, key area and core area. The ESMF has established an exclusion criteria to exclude activities from the core area and key area of Qinling Mountains Protection Area. The Project will mainly be located in developed areas or areas heavily disturbed by human activities, without likelihood of involving natural habitats and critical habitats, and core/key areas of Qinling Mountains Protection Area. In addition, Shaanxi Province is renowned for its brilliant ancient history and varied cultural heritage.

Shaanxi Province has 10 cities, 69 counites and 7 county-level cities. The total population of the province is 39.52 million. The project will finance activities in 11 counties and districts under 5 cities in Shaanxi Province, with 2 counties/districts in the southern part and 9 in the middle part of Shaanxi.

The social impact assessment and social baseline included in the ESMF include details of the salient social characteristics of the wide geographic area where project activities will take place. Overall, Shaanxi Province is less economically developed than the east coastal provinces and cities. In 2021, the per capita GDP of Shaanxi was RMB 75,360, ranking 12th of the 31 provinces/municipalities/autonomous regions in mainland China. The average dispensable disposable income for urban residents (RMB 40,713 per capita) ranked 18th in 2021, but while the average income for rural residents (RMB 14,745 per person) was lagging, ranking 27th across the nation. The low-income people with a low income accounted for around 3.67% of Shaanxi's total population, slightly higher than the national average (3.18%). The vast majority of the population in Shaanxi are Han Chinese, comprising over 99% of the total population. There are around 28,000 ethnic minority people in the 11 project participating counties or districts, roughly 0.5% of the total population. According to the analysis of the social baseline in the ESMF, 90% of the population that are considered as belonging to an ethnic minority group in the 11 project counties are ethnic Hui and mainly live in urban areas. The SIA concludes that there are no ethnic minority communities or villages in project areas of the first batch counties, such as Linwei District, Chengcheng County, and Chencang District. The ESMF includes an ethnic minority development framework (EMDF) to inform the screening and assessment of potential risks and impacts on ethnic minorities for the subsequent batches of subprojects. The baseline studies will also examine the existing solid waste services of relevant counties/districts and types of workers and their labor and working conditions.

The first batch activities are to be implemented in the counties of Linwei and Chengcheng under Weinan Municipality, and districts of Jintai and Chencang under Baoji Municipality. Among the investment activities, the PMOs proposed eight existing landfills for closure. In the Batch 1 investments, four existing landfills will be closed with the World Bank financing, including Changshougou Landfill (in Jintai District), Majiagou Landfill (in Linwei District), Yaotou Landfill (in Chengcheng County), and Chengcheng Landfill (in Chengcheng County). The other four landfills in four counties/districts are included in the Batch 2 investments. The two municipalities of both Weinan and Baoji are located in the middle part of Shaanxi Province. The first batch activities are limited to physical investments in both rural and urban areas. In addition, part of Chencang and Linwei is within the general protection area and key protection area of Qinling Mountains.

D. 2. Borrower's Institutional Capacity

Shaanxi has established a Steering Committee (PSC) at the provincial level, chaired by the Director General of the Shaanxi Provincial Development and Reform Commission (PDRC). The PSC comprises senior officials from the provincial departments and their local subsidiaries, including the provincial Department of Finance (PF), Housing and Urban and Rural Development (PHURD), and Agricultural and Rural Affairs (PARA), Ecology and Environment, Commerce, Bureau of Rural Revitalization, Supply and Marketing Cooperative, and Baoji Municipality, Xianyang Municipality, Weinan Municipality, Hanzhong Municipality and Ankang Municipality. The PSC will provide overall policy and strategic guidance on the implementation of the project. It is also responsible for facilitating the coordination and discussions with central ministries on the policy aspects of integrated urban-rural MSWM, agricultural plastic waste management, and knowledge sharing.

Shaanxi Province has designated the existing provincial PMO housed in PDRC (Shaanxi PMO) to prepare and implement the project. Shaanxi PMO has rich experience in the coordination and implementation of World Bank and Asian Development Bank loan financed projects. Shaanxi PMO comprises competent staff specialized in engineering, procurement, financial management, and ES. Its major responsibilities are: (a) overall project coordination and management, including fiduciary functions as well E&S risk assessment and management; (b) annual budget preparation; (c) project-wide quality assurance; (d) progress monitoring and regular reporting to the Bank and the PSC; (e) inter-departmental coordination; and (f) training and guidance to local PMOs/PIUs.

Project Leading Groups (PLGs) mirroring the composition of provincial PSC are established at city and district/county levels, to provide policy guidance for project implementation. The PLG in Baoji city will be chaired by a vice mayor, and all PLGs at district/county level will be headed by a designated local governor.

This project and the China Plastic Waste Reduction Project (P174267) will be implemented nearly in parallel and are expected to inform and leverage their respective activities. Policy work led by National Development and Reform Commission (NDRC) will be informed by experiences and lessons under the proposed project. The sub-component 1B will support Shaanxi to facilitate knowledge exchanges and bring together Shaanxi and relevant national agencies (NDRC, MOHURD, MARA), as well as, on an as needed basis - Ningbo and Chongqing for technical consultation, demonstration and two-way feedback, and replication in China to address plastic waste pollution from rural waste flows.

Shaanxi Province has acquired extensive experience with the World Bank's safeguards policies through the implementation of World Bank projects, such as Shaanxi Sustainable Towns Development Project. Shaanxi has strong technical capacity including the preparation of EIA, Social Assessment, Resettlement Planning, and detailed designs They also have experience in the construction and operation of the types of investments proposed, and have developed a series of technical guidance and specifications relevant to the solid waste infrastructure investments such as landfill, incineration, clean up or remediation of legacy sites etc. Shaanxi has sufficient technical capacity to implement the project in a manner that would meet the objectives of the Environmental and Social Standards (ESSs), including good international industry practice (GIIP). As agreed upon in the Environmental and Social Commitment Plan (ESCP), the Provincial PMO and local PMOs/PIUs will have dedicated environmental and social staff. Although the World Bank's Environmental and Social Framework (ESF) is new to Shaanxi, it will be possible to build on the previous experience and skillsets developed when applying the World Bank's Environmental and Social safeguards as the basis for implementing the requirements of the ESF. The capacity of Shaanxi and local PIUs will be strengthened through the Component 1 (Activity 1C for stakeholder coordination and engagement) and Component 3 which is designed to support the technical and institutional development and capacity building.

The PMOs' demand for capacity enhancement has been identified and a comprehensive capacity enhancement plan with estimated budget has been developed in the ESMF and the site-specific E&S documents for Batch 1. The capacity enhancement plan includes measures to enhance awareness and capacity of relevant PIUs on the ground for implementing the ESF. Shaanxi PMOs will engage external E&S experts with particular professionalism on labor, occupational health and safety (OHS), resettlement, community health and safety, and stakeholder engagement as the extended team to strengthen in-house E&S capacity. The PMO/PIUs have committed in the ESCP to allocate adequate resources and ensure sufficient E&S expertise is at hand to support the compliance with the relevant Environmental and Social Standards for the project. The ESCP also sets out follow-up training plans to improve

awareness and bridge capacity gaps for in-house E&S staff and external experts. Shaanxi PMO will engage professional external E&S institutes to monitor the E&S management performance of all project activities.

II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC) High

Environmental Risk Rating Substantial

Although most of the specific locations for the Project are not confirmed, based on available information, type of investments, institutional capacities and experience with similar work and general implementation challenges, the environmental risk is assessed as Substantial. The proposed project consists of three components. Component 1 and 3 are centered on Technical Assistance, and Component 2 involves physical works intended to improve municipal solid waste and agricultural plastic waste management in underserviced areas in the province of Shaanxi. The physical works include: (i) upgrading/construction of waste collection, sorting, transfer, recycling and treatment facilities; (ii) closure of eight landfills; (iii) support systems for agricultural plastic mulch/nurseries collection, storage, recycling, treatment/alternatives. The physical works may generate adverse risks and impacts on human populations and the environment, largely related to operation of the facilities: 1) bad odor and wastewater from transfer stations; 2) risk of fire and explosion from landfills closure; 3) fire risk from recyclables storage and recycling facilities; 4) community health and safety due to increased transportation of wastes; 4) health and safety risk to communities if the landfill is not properly closed; 5) strong bad odor, fire and explosion risk from kitchen waste treatment facilities; 6)risk of alien species invasion by landfill closure; 7) landfills are in or near modified habitats with high biodiversity value; 8) challenge in land use change as a result of landfill closure; 9) proximity to legally protected heritages; 10) OHS risk; 11) geo-disaster risk. In construction stage, the environmental impacts are dust, noise, wastewater, solid waste, traffic safety, and occupational health and safety. These potential environmental impacts are moderate or substantial, and can be avoided, minimized or mitigated in the context that Shaanxi has strong capacity with good engineering design/technical solutions available. In addition, the capacity of Shaanxi will be further strengthened through Component 3. In addition, the Project does not support construction, rehabilitation and expansion of solid waste disposal facilities with significant environmental and social impacts, e.g. incinerators and landfills. A preliminary screening on the downstream facilities of the Project is conducted in the ESMF, and it is concluded that the associated facilities of the project are highly unlikely to be large incinerators and landfills. The physical works will be located in developed areas or areas heavily disturbed by human activities, without likelihood of involving natural habitats and critical habitats. The potential impact on modified habitats with high biodiversity value will be screened and avoided in the subproject EIA process once the location of the subproject is confirmed. Component 1 supports the studies to make recommendations for policies, strategies, plans and guidelines at provincial or municipal levels. Implementation of these outcomes on ground will have long-term downstream impacts. However, the project does not support the implementation of these outcomes. The potential environmental risk and impacts associated with this component will be addressed through developing appropriate instruments per the Bank relevant guidance and ESF. The ESMF includes a screening for instruments for this component to provide guidance on the preparation of EA instruments once the TA activities are detailed. Component 3 is to support TA on project management and capacity building, including consultancy service, training and knowledge exchange, etc. The adverse environmental risks and impacts are deemed negligible.

Social Risk Rating High

The high social risk rating assigned to this operation is due to the uncertainty regarding the location and impacts of the Batch 2 investments, and that the fact that establishing a sustainable urban-rural integrated SWM system would entail diverse significant adverse social risks including labor and occupational health and safety (ESS1), community health and safety (ESS2), land acquisition and resettlement (ESS5), complex landfill legacy issues (on noncompliance in land permitting, resettlement, community health, OHS management, etc.), and potential social conflict and engagement challenges related to not-in-my-backyard objections (ESS10)s. The Technical Assistance studies planned under Component 1 may also have region-wide downstream social implications (e.g., in terms of labor, OHS, resettlement, community health and safety, etc.). While the footprint of the planned SWM facilities themselves will not be large or require significant land acquisition or house demolition (implying only minor economic impacts), there is the potential for additional economic or household dislocation due to the impacts of storage sites and safety butter zones. Three of the landfills identified for closure under Batch 1 have legacy issues, including two (Majiagou and Yaotou landfills) are not conforming with land zoning plan and have not obtained land approvals; while one (Chengcheng landfill) has community health concerns (i.e., there are people living in the safety exclusion zone). Potentially three out of four landfills in Batch 2 may have legacy issues. Some counties are proposing to re-use the landfill land to site new facilities, where the legacy issues need to be appropriately fixed first. In terms of labor and working conditions risks, the project would engage direct workers, contracted workers, and community workers as defined by ESS2. The social audit identified that the labor law and relevant OHS requirements are not strictly enforced in rural SWM systems due to budget constraints and low awareness. Gaps exist in working conditions for certain aspects for sanitation workers. Workers are usually exposed to significant OHS risks due to the nature and poor site management of SWM facilities. The social surveys identify that very few people are engaged in waste picking at the township waste dump sites (1-2 per dumpsite), and for those who do it contributes to a small portion of their gross income. The social assessment conducted did not identify concerns related to child labor or forced labor. Also, the risk of workplace (or worker-community) SEA/SH incidents was considered low risk (see below). Risks related to Community health and safety would be primarily related to transfer stations, waste transportation and various waste treatment facilities. Addressing the legacy issues on community health and safety requires systematic planning of landfill closure to minimize long-lasting risks and avoid community conflicts. The perceptions of community endangerment and non-receipt of benefits, along with potential objections would create challenges in locating the sites for SWM infrastructure and acquiring the land. It is considered unlikely that the physical investments will adversely impact ethnic minority communities or land. The TA studies to be financed (which would apply beyond the project area where there are ethnic minorities-dominated communities or villages) may directly benefit/impact ethnic minority households or communities. There may be broader stakeholder engagement risks associated with performance-based incentive financing mechanism (PBIFM) for agricultural plastic mulch pollution reduction in seven counties. The project shall promote proactive engagement with farmers to promote their behavior changes, transparency, and sustainability. Tackling rural SWM issues also requires a fundamental overhaul of cross-coordination among many line departments and proactive stakeholder engagement to manage social conflicts and exclusion risks.

B. Environment and Social Standards (ESSs) that Apply to the Activities Being Considered

B.1. General Assessment

ESS1 Assessment and Management of Environmental and Social Risks and Impacts

Overview of the relevance of the Standard for the Project:

E&S due diligence was conducted based on the review of the E&S documents for the project, PAD, project design reports, and field visits to the project counties or districts.

Physical works are envisaged under Component 2. Under the Component 2A, the project will finance the construction, renovation/rehabilitation of the collection points, sorting centers, transfer stations, organic waste treatment facilities, buildings debris and bulk waste treatment facilities, and closure of landfills. In addition, it will pilot small composting devices for degradable wastes at selected villages. The Component 2B supports the design and construction of agricultural plastic collection and handling system, which includes construction of collection, transfer and transportation facilities and a PBIFM.

The project does not support disposal facilities with significant E&S impacts, e.g., landfills and large incinerators. Screening of associated facilities is conducted in the ESMF per the ESF, and it is concluded that the associated facilities do not involve large incinerators and landfills. The project is in developed areas and unlikely to involve critical/natural habitats. This project will neither introduce alien species nor purchase and use natural products.

The physical works may generate adverse risks and impacts on human populations and the environment, largely related to landfill closure 1) leakage of leachate and biogas, causing pollution and explosion risk respectively; 2) impact on modified habitats with significant biodiversity value in or near the landfills; 3) legacy issue due to polluted groundwater and soil around the landfills; 4) soil erosion; 5) soil borrowing for capping work with risk on nature habitats or modified habitats; 6) risk on ecosystem service for community health and safety; 7) challenge in land use change as a result of landfill closure; 8) risk of alien species invasion.

Other environmental risks are mostly related to facility operation: 1) risk of fire in sorting facilities; 2) community health and safety due to increased transportation of wastes; 3) strong bad odor, fire and explosion risk in kitchen waste treatment facilities; 4) occupational health and safety. In addition, construction of buildings debris and bulk waste treatment facilities may involve modified habitats, and some project areas may be prone to geo-disasters. The environmental risk and impacts at the construction stage include dust, wastewater, solid waste, soil erosion, noise, traffic safety, odor, community and occupational health and safety. However, these environmental impacts can be avoided or mitigated in the context that Shaanxi Province has strong capacity and rich experience in EIA, design, construction, operation and supervision of such facilities, and the good engineering design/technical solutions are available. In addition, the project is not expected to use large quantity of water and energy and lead to high water demand. The direct gross GHG emission will be estimated using the methodology agreed by the Bank.

Component 1 supports studies to make recommendations for policies, strategies, plans and guidelines at provincial or municipal levels. Implementation of the recommendations on ground, if adopted, will have downstream impacts. However, the project will not finance the development and implementation of the policies, plans and guidelines. In the ESMF, the TAs have been categorized per the guidance note of the Bank, and the potential downstream impacts are discussed, and instruments with specific requirements are proposed, such as for Class II TA alternative analysis and elements of CIA are highlighted. Component 3 would have negligible risks.

The project would have diverse significant adverse social risks. The downstream social impacts of TA studies may be broader. Significant social risks and impacts anticipated for the project are: (a) landfill legacy issues, (b) land acquisition and resettlement; (c) labor and working conditions and OHS risks; (d) community exposure to safety and

health risks (both real and perceived); (e) risks of exclusion; (f) potential social conflicts that would be comingled with legacy issues, resettlement, and the objection of communities to the siting of SWM facilities. The project faces challenges for smooth cross-coordination among many government agencies and relatively limited capacity for stakeholder engagement. Potential adverse impacts on ethnic minority communities is largely due to the downstream implications of provincial level TA studies. Child labor and forced labor, and SEA/SH risks are considered to be low risks based on the preliminary screening provided in the ESMF. Consistently implementing the actions in the SIA and SEP will enhance designs and promote the sustainable operation of SWM systems.

The project adopts a combination of framework and site-specific plan approaches. The framework approach is adopted for the overall project, while a site-specific plan approach is for project activities confirmed before appraisal. The Shaanxi PMO prepared an ESMF, a SEF, and an ESCP. The ESMF includes an analysis of the E&S baselines, an assessment of potential E&S impacts and also covers procedures for excluding physical activities involving natural habitats and critical habitats and legally protected physical cultural heritages and introduction of alien species, screening, categorization, E&S document preparation including TORs for the E&S documents, stakeholder engagement, and review and approval. The EMSF comprises several useful framework planning tools, e.g., resettlement framework, labor management procedure framework, and templates for applicable ES assessment instruments. The ESMF also includes a consistent due diligence review approach for eight landfills for closure. Three of the four landfills identified for closure under Batch 1 have legacy issues, while three of the remaining four in Batch 2 may have legacy issues. As in the case of Batch 1, investments under Batch 2 will follow a process that allows to identify issues, analyze legacy circumstances, agree on, and implement appropriate corrective actions prior to any direct on-the-ground investment activities.

Shaanxi PMO has developed the first batch activities to be implemented in the first 18 months. During implementation, the specific locations for the remaining activities will be determined. Thus, a subproject EIA, SIA, and ESMP, SEP, and LMP will be prepared per the ESMF. The E&S documents will be disclosed locally and on the World Bank website before the approval of specific subprojects.

The first batch activities are to be implemented in the counties of Linwei and Chengcheng in Weinan Municipality and Chencang District in Baoji Municipality. The first batch is limited to physical works, including construction of small collection points at villages and communities, construction/rehabilitation of small-medium size transfer stations, construction of 1 vehicle parking and maintenance facility, rehabilitation of 1 recyclable sorting center and closure of 4 sanitary landfills.

For Batch 1, the EIA with integration of EMP, SEP, SIA, and LMP have been prepared by Shaanxi PMO. The EIA for the first batch was prepared by Shaanxi PMO per the ESF, including application of EHSGs and GIIP. The first batch does not involve natural habitats and critical habitats, and are not located in the key and core protection areas of Qinling Mountain Protection Area, legally protected cultural heritages and heritages at local level, and areas with risk of geo-disasters. The first batch do not involve associated facilities, but some supporting facilities. Due diligence review has been done for the supporting facilities, and the environmental performance of the supporting facilities are satisfactory. During the EA process, the environmental risks and impacts have been identified, assessed and avoided/mitigated. Alternative analysis is done and the options with the least ES impacts are selected. Mitigation measures including Environmental Codes of Practice (ECOP) and site-specific measures, and OHS measures, emergency preparedness plan, and monitoring plan, as well as the institutional arrangement and capacity building

plan have been designed and incorporated into the ESMP. Specific management plans, e.g. traffic management plan have been developed under the ESMP to deal with influx of workers and traffic safety risk. SEP has been developed at the early stage of the EA. For more information of the EIA, please see ESS2, ESS3, ESS4, ESS6 and ESS8 under B2.

By Appraisal, the project completed the social audit and social assessment for Batch 1. The assessment concludes that the closure of landfills would entail significant community health and safety risks and OHS risks and have legacy issues on land and resettlement. Constructing new SMW activities will involve a minor land acquisition but will not induce physical displacement. Gaps are observed against laws and ESS2 in terms of labor conditions (e.g., contract conditions, wages, working hours) and OHS management for certain types of workers engaged or involved in existing facilities and waste collection services in relevant project areas. Under Batch 1, Majiagou and Yaotou landfills are not conforming with land zoning plan and have not obtained land approvals (see ESS5 section); while Chengcheng landfill has community health concerns (see ESS4 section). PMO/PIUs endorsed measures to avoid, minimize, remedy, or compensate for the identified social risks and impacts and to strengthen inclusions. The ESCP includes material social measures and actions (including those for remedying landfill legacy issues).

For TA activities, the PMOs will hire E&S experts to support the development of the TAs to ensure the consideration of the relevant ESSs in the TA. The project lawyer and/or LEGEN should be consulted when advising government in developing regulatory instruments.

ESS10 Stakeholder Engagement and Information Disclosure

The project requires proactive and meaningful stakeholder engagement to succeed. More significantly, NIMBY (not-in-my-backyard) objections can be a frequent response by the local community regarding the siting of a SWM facility. In addition, communities could object by blocking project vehicles from passing through the community roads. It will pose consequent challenges for project site selection and land acquisition and require appropriate engagement strategies to obtain the “social license” for SWM facilities.

By Appraisal, Shaanxi PMO has prepared a Stakeholder Engagement Framework (SEF) for the overall project and a site-specific Stakeholder Engagement Plan (SEP) for Batch 1. The SEF preliminarily identifies and analyzes relevant stakeholders and sets out general principles and procedure requirements to plan for an effective, inclusive, and collaborative engagement process that will be implemented once relevant activity-specific information is known. Proportionate to the nature of different activities, the SEF differentiates the stakeholder engagement procedures for physical activities, TA activities, and performance-based incentive financing mechanism (PBIFM) for agricultural plastic mulch pollution reduction. The SEP documents the stakeholder engagement outcomes completed by Appraisal and sets out systematic arrangements throughout the life cycle of relevant subprojects in the 1st batch. Both the SEF and SEP include a comprehensive stakeholder analysis matrix based on available information on the project activities. The matrix identifies the main stakeholder groups by subproject typology and phases, assesses the project’s impacts on stakeholders, and the extent to which stakeholders (particularly the permit-issuance authorities) can influence specific sub-projects.

The SEF and SEP identified and analyzed the stakeholders, including all parties and individuals participating in or having an interest in the project. Consistent with ESS10, the SEF and SEP classify project stakeholders as project-

affected parties, other interested parties, and vulnerable groups. Project-affected parties would include various types of workers working on the SWM systems, people affected by land acquisition and resettlement, local communities located within the area of influence of SWM infrastructure (particularly existing landfills), solid waste handlers/ pickers (formal and informal), workers of existing market outlets, private recycling practitioners, farmers, and vulnerable groups. In this project, the vulnerable groups would refer to the direct workers and community workers without formal labor contracts, informal waste pickers at non-sanitary waste dumping sites, the poor households affected by resettlement, among others. Vulnerable groups are more vulnerable to or have different concerns about the project E&S risks and impacts and require special arrangements for engagement to capture their concerns and needs properly. Other interested parties would include the general public, the Shaanxi PMO and county level PIUs, contractors, NGOs, market outlets for agricultural mulch, farmers' cooperatives, stakeholders involved in PBIFM, owners/operators of associated facilities, etc.

Integrating solid waste management at the county and rural levels requires effective cross-department coordination among line departments at various jurisdictional levels (province, municipality, county, and township). The SEF and SEP also identify a set of responsible line government agencies in charge of planning, establishing, and morning SWM and supervising E&S management, analyze their influences, and tailor strategies and plans to facilitate proactive engagement with these agencies to strengthen E&S risks management and enable project sustainability. SWM in the county and rural areas is under the purview of the Urban Management Bureau, which is responsible for the planning, construction, operation and maintenance of waste facilities, service delivery, and data and information. The Commerce Bureau organizes and regulates the market-based resources recycling from urban wastes streams. The Market and Supply Cooperative handles resource recycling in rural areas. The Agricultural and Rural Affairs Bureau organizes the treatment of agricultural waste, including agri-mulch film and plastic packaging. The responsible E&S authorities include, but are not limited to, the Ecological and Environmental Bureau, Fire-fighting Brigade, Emergency Management Bureau (for work safety), Health Commission (for OHS management), Labor Bureau (for general labor and working conditions), Bureau of Natural Resources, and Ethnic Minority and Religious Bureau (for confirming the presence of ethnic minorities in subproject areas).

During the preparation, Shaanxi PMO and the E&S consultants carried out extensive engagement with relevant stakeholders (including vulnerable groups) to understand their concerns and seek advice to improve project design. The social consultant proactively engaged with influential authorities to understand procedural requirements and time implications to proceed with relevant E&S permits and supported the PMOs to improve the project implementation schedule making it more pragmatic. Per the early engagement, the PMOs also formulated a permitting roadmap, which will effectively guide the permit clearance process. Key milestones for obtaining regulatory clearance and approvals are documented in the ESMF, ESCP and site-specific EIA or SIA report. More meaningfully, stakeholder engagement identified critical E&S concerns with existing activities and relevant subprojects and subsequently narrowed down the assessment scope to focus on substantive E&S issues. With the stakeholders' meaningful inputs, the social audit and SIA strengthened risk mitigation measures. The stakeholders' concerns and viewpoints were adequately considered while conducting impact assessment and formulating mitigation measures, project designs, project implementation schedules, ESCP, and future engagement plans.

During the preparation, with the Bank Task Team's facilitation, Shaanxi PMO convened joint meetings among the design institutes and E&S consultants to ensure stakeholders' feedback were properly reflected in the project designs, site selection, and E&S risks assessment and mitigations. For example, several rounds of meetings were held

among design institutes, E&S consultants, and PMOs to explore and agree on pragmatic solutions and strengthen engineering and non-engineering measures to avoid, minimize and mitigate the legacy social issues with existing landfills. From September 14-15, 2022, the social consultant held a workshop with PMO/PIUs, the design institutes, and selective government agencies to introduce social assessment findings and proposed measures, procedures, and plans for social risk management. After confirmation and clarification by the social consultant, the PMO/PIUs endorsed the recommendations and action plans presented in a set of the framework and site-specific social documents. The social consultant also engaged with selective vulnerable groups to formulate differentiated measures so that adverse impacts do not fall disproportionately on them and explore opportunities to include them in sharing the project benefits.

For TA studies, SEF (in Section 4.2) sets out operational guidance, templates, and procedural provisions for stakeholder engagement. Depending on the nature of TA activities, the SEF identifies the TA TORs and the work plan as appropriate entry points for promoting stakeholder engagement during TA studies. The TA TORs will define the requirements for stakeholder engagement consistent with ESS10 and the Bank relevant guidance. The TA work plan, prepared by the TA contractors, will include explicit provisions on activity-specific stakeholder engagement arrangements. The TA work plan will mainstream the arrangement for information disclosure and meaningful consultation with relevant stakeholder representatives involved in the study itself and affected by potential downstream impacts through the potential application of the study's outputs.

The SEF highlights the importance of proactive and meaningful engagement with farmers, village committees, community sanitation workers, waste-pickers, and other relevant stakeholders in designing and implementing the PBIFM for agricultural plastic mulch pollution reduction toward promoting farmers' long-term behavioral changes. The SEF (in Section 4.3) identifies the responsible agencies and their corresponding roles and requires tailoring a village-specific participatory implementation manual. The first three typical village-specific PIMs are subject to the World Bank's review to seek no-objection.

During implementation, the SEF will guide the development of activity specific SEPs for preparing subsequent batches of subprojects. Shaanxi PMO and municipal/county PMOs will strengthen in-house capacity for managing public consultation and information disclosure through implementing a capacity-building program. Per the ESCP, SEF, and site-specific SEPs, the PMOs shall designate specific focal points to be responsible for the implementation and monitoring of stakeholder engagement activities, grievance redress, and compliance with ESS10. The SEF and site-specific SEP include the arrangements for project GRMs for the communities and workers. The PMOs/PIUs shall provide adequate resources to ensure the GRMs are functioning and SEPs are well enforced, monitored, and adjusted adaptively.

On September 23, 2022, Shaanxi PMO disclosed the E&S framework documents (i.e., ESMF, ESCP, SEF) and the site-specific E&S documents for the 1st batch subprojects (i.e., EIA, Social Audit Report, SIA, RP, LMP, SEP) on the PDRC's official website. After the World Bank cleared them, the final E&S documents were re-disclosed locally on November 23, 2022 and proceeded with the Bank disclosure on November 23, 2022.

B.2. Specific Risks and Impacts

A brief description of the potential environmental and social risks and impacts relevant to the Project.

ESS2 Labor and Working Conditions

ESS2 is relevant because the project will involve direct workers, contracted workers, and community workers. Primary supply workers are currently irrelevant but subject this will be confirmed during implementation. Both SIA and ESMF concluded that the project activities will not involve any of the suppliers that would, on an ongoing basis, provide directly to the project goods or material essential to SWM services (the project's core function). Direct workers are staff of PMOs/PIUs, and the workers directly employed or engaged by the PMOs/PIUs and county/township governments to work specifically in connection with the construction and operation of relevant SWM systems and facilities and the management of TA studies and PBIFM. The government civil servants involved will remain subject to the terms and conditions of their existing public sector employment agreements. The SIA concludes there are no concerns about child labor or forced labor risks with civil servants. Each subproject will strengthen site management per the LMP to avoid OHS risks to visitors (including civil servants). Contracted workers refer to people employed or engaged by contractors for constructing, maintaining, and operating the SWM systems and facilities. TA studies are normally carried out by contracted workers from consulting firms, research institutes, etc. Community workers are only involved on a voluntary basis through the village committees for the waste collection and transfer within the villages, which is deemed low-moderate social risks based on the due diligence. The PBIFM intends to share the established rural SWM systems to transfer the collected waste agricultural mulch and therefore also involves community workers.

LMPs will estimate the number of different types of project workers to be employed or engaged for a subproject. The project will not involve a significant labor influx, given most of the needed labor force could be hired locally. The LMP for the first batch shows that constructing transfer stations in the rural area for one county would involve dozens of workers (30-40), but the operation would require only a few workers (1-2). Usually, a country would have additional 35-50 drivers to transfer the rural solid wastes and each village group will provide one or two community workers to support the within-village transfer. Closing a landfill would involve dozens of workers (40-80), but only employ less than ten direct workers for post-closure maintenance. Landfill gas and leachate will be treated by a third-party contractor. Establishing a typical waste sorting facility in Linwei will require about 15 workers, while operating the facility will require 25 workers. Operating the municipal and rural SWM systems requires hundreds of sanitation workers and community workers in one county/district.

The ESMF and LMP conclude that China has comprehensive regulations on labor and working conditions, generally in alignment with ESS2. China's labor authorities at all levels are increasing supervision to ensure strict labor law enforcement, require fair treatment of all types of workers, and prevent child labor and forced labor. China Labor Law defines 16 years old as the minimum working age and sets out clear provisions to prevent harm and hazards to juvenile workers (16-18 years old). The social audit concludes that the concern of involving child labor, forced labor or juvenile workers (16-18 years old) will not be materialized in formal SWM facilities. In China, SWM facilities are usually fenced to prevent access by waste-pickers for safety considerations. However, most of the rural dumpsites are open. The social surveys identified that very few people pick recyclable wastes at township waste dump sites (1-2 per dumpsite), for whom waste-picking contributes to a small portion of their gross income. There are around 50 informal waste pickers for the first batch counties (Linwei, Chengcheng, and Chencang). The ESMF and site-specific SIA identify meaningful ways to provide opportunities to vulnerable groups. The project will create many new job positions and is unlikely to result in worker layoffs.

Labor regulations and relevant OHS requirements are not strictly enforced in rural SWM systems mainly due to budget constraints and low awareness. Gaps are observed in working conditions for certain types of sanitation workers, who are usually exposed to OHS risks due to poor site management of the SWM facilities. The PMOs/PIUs have endorsed the measures to improve the labor and workings and OHS to protect workers' rights related to wages, hours of work, overtime compensation, and benefits and promote health and safety at SWM facilities, consistent with China's regulations and ESS2.

The ESMF screens and analyzes the significant labor-related risks in connection with all types of project activities. The physical activities may cause risk on occupational health and safety as following: 1) operation of mechanical and electric equipment may cause mechanical and electric damage to workers; 2) biogas leakage in landfills and kitchen waste treatment facility may expose workers to risk of fires and explosions; 3) traffic safety risk; 4) health risk due to contact of solid waste and exposure to odor; 5) Covid-19 risk. The OHS management measures need to be developed per the ESS2 and considering relevant EHSGs and GIIPs and subject to the consultation with relevant experts and government agencies, such as the Health Commissions and Labor Bureaus. OHS risks screening is developed in the ESMF and will be further assessed for each subproject through the site-specific EIA and SIA.

The ESMF includes a screening checklist, covering potential E&S issues in ESS2, such as worker layoff, non-compliance with working conditions against China's labor law, severe OHS risks, forced labor and child labor, juvenile workers (above minimum age and under 18), etc. In the ESMF, Shaanxi PMO developed a sector-specific Labor Management Procedure Framework (LMPF) according to labor risk analysis. The LMPF could be fine-tuned to a site-specific LMP. Particularly, the LMPF highlights the importance of strengthening existing labor policies and procedures to align with China's regulations and ESS2, establishing in-house organizations, designating competent and responsible staff, and allocating an adequate budget. The LMPF consolidates typical informal and formal channels to address worker's concerns and complaints and sets out the provisions for an accessible and understandable GRM.

Before subproject appraisal, all subprojects should establish and maintain (through the project lifecycle) a site-specific LMP proportionate to the E&S risks and impacts and consistent with China's regulations and ESS2. The site-specific LMPs should streamline procedural arrangements for incident, accident or near miss reporting, investigation, and emergency preparedness, and include training programs to improve the workers' awareness. The subprojects will require that the selected contractors are obliged to perform OHS risk assessment for the defined scope of work and develop/implement/maintain OHS management plans consistent with the local legislation and ESF. Especially for major infrastructure activities, the LMPs will enhance the arrangement of contractor work camp management (including GBV remedy measures). Before subproject appraisal, it should put in place functioning GRMs for project workers.

For Batch 1, the PMOs prepared a consolidated LMP for Linwei, Chengcheng, Chencang and Baoji, integrating the actions and measures to manage the labor risks and impacts on direct workers, contacted workers, and community workers. The LMP includes measures endorsed by PMOs to improve the labor and workings and OHS, protect workers' rights related to wages, hours of work, overtime compensation, and benefits and promote health and safety at SWM facilities, consistent with China's regulations and ESS2. Shaanxi PMO will commission a professional social consultant to monitor the project labor management performance. OHS issues related to the operation of facilities will be tackled through various facilities operation plans and protocols, emergency plans, etc. The LMP defines different ways to collect workers' grievances, identify responsible agencies, and sets out the length of time to provide

feedback. The GRM is dynamic and can be enhanced when subproject specific information is available. The PMO/PIUs shall formally inform all workers of the GRMs as early as possible. The county/municipal PMO/PIUs have confirmed the measures in the LMP.

The TA studies could have potential downstream risks on labor and working conditions. For example, the downstream investment projects and civil works associated with a waste shed mode could have potential downstream risks and impacts on labor and working conditions. The ESMF preliminarily screened downstream labor-related risks by TA studies. The ESMF identifies that the TA TORs and the work plans (prepared by TA contractors) are proper entry points to manage the risks on workers of TA contractors and promote proactive consideration consistent with ESS2 to prevent and manage downstream labor risks. The TOR will set out provisions to require the TA contractor to protect workers' rights, health and safety and respond to their grievances. The TA TOR shall also include an explicit requirement for appropriate assessment of downstream labor-related risks and impacts and integrating proper measures and principles consistent with ESS2 into the design of advice to targeted actions and policy recommendations as part of the TA outputs.

The PBIFM for agricultural mulch pollution reduction also adopts a framework approach. The ESMF, LMPF, ESCP, and SEF promote a holistic approach to considering labor risk management from the TA activity to be implemented in year one to the village-specific participatory waste agricultural mulch waste collection plan.

ESS3 Resource Efficiency and Pollution Prevention and Management

Although some project activities will use energy and water, e.g., waste transfer stations and kitchen waste treatment facilities, etc., the project is not expected to use large quantity of water and energy. In addition, given that Shaanxi Province is not in an arid region, it is expected that the project will not lead to high water demand.

The project will reduce pollution loads, especially waste plastics, into the environment. At the same time, the project will produce pollution in both construction and operation stages: 1) the transfer stations will produce noise, wastewater, odor, and dust; 2) kitchen waste treatment facility will produce waste gas and wastewater, and solid waste; 7) leachate will pollute the groundwater if it is not properly collected and treated during and after the closure of the landfills; 8) GHG will emit from landfills and kitchen waste treatment facilities; 9) legacy issue if the soil and groundwater around the landfills are polluted; 10) bulk waste treatment facility will produce solid waste and dust; 11) composting devices will produce bad odor; 12) cumulative impacts, especially given that there are a large number of collection points and transfer stations which may produce minor environmental impact individually but collectively significant cumulative impacts. In addition, the project will not involve collection, storage, transportation, and disposal of industrial/agricultural hazardous wastes, but household hazardous solid wastes.

The project does not support construction, rehabilitation or expansion of municipal solid waste landfills and large incinerators. But the project will depend on some upstream and downstream facilities, such as incinerators and landfills. Screening of associated facilities is conducted in the ESMF against the three criteria in the ESF, and it is found that those incinerators and landfill are not associated facilities of the Project. Due diligence on the upstream and downstream facilities will be carried out in the subproject EIA.

The ESMF includes a study of E&S baselines, screening, categorization, assessment of potential E&S impacts including cumulative impact assessment procedure, E&S document preparation, TORs for the ES documents, stakeholder engagement, review, and approval. GHG estimation will be made per the ESS3.

The ESMF includes a set of ECOP for managing the environmental risks and impacts. The environmental risks and impacts of the activities will be further assessed in the subproject EIA per the ESMF. The mitigation measures, and emergency preparedness plan, will be developed with application of the EHSGs and GIIP under the ESMP.
The ESMF also contains a set of ECOP for energy and water use/efficiency in line with EHSGs and GIIP. Energy and water efficiency will be further evaluated in the subproject EIA and energy/water efficiency improvement measures will be developed and integrated into the ESMP.

During the subproject EIA process, the estimate on direct gross GHG emission (scope 1), including the biogas from landfills to be closed, and kitchen waste treatment facilities, for this project will be carried out using the methodology agreed by the Bank. In addition, this project will neither use nor procure pesticides. In the EIA for the first batch, the analysis of environmental baseline was conducted and found that the existing ambient environment is fairly good except ground-level ozone, PM10 and PM2.5 due to the emissions from vehicles and industries. Electric vehicles will be used to haul the solid waste to be best extent to reduce vehicular emission under the project. The activities are located far from areas of importance of biodiversity, and the cumulative impacts are centered on ambient air quality (VECs) to be impacted by H2S and NH3. The environmental risk rating for the first batch is Substantial.

The EIA covers a wide range of issues related to ESS3. The energy and water efficiency, and the pollution have been assessed. The use of energy and water is minor. Measures for energy and water efficiency have been developed and incorporated into the EMP. The testing results show that the groundwater and soil around the 4 landfills are not polluted. The leachate and biogas collection and treatment system has been designed in the design document for landfill closure, where the biogas will either go to the on-site flare system or the existing power generation facility using biogas Gross GHG emission has been estimated for the four landfills to be closed using the methodology agreed by the Bank; CIA has been made for collection points, transfer stations and landfill closure, and the cumulative impacts is minor; the modeling results show that the noise and bad odor at the boundary of facilities and sensitive receptors meet the respective standards; the wastewater produced during the operation of the transfer stations will be collected at site and transported to the leachate treatment facilities or wastewater treatment plants for treatment. In addition, the project will upgrade the leachate treatment facilities in the landfills to be closed by the project. The sludge to be generated in the leachate treatment facility will be transported to the incinerators for disposal. Cumulative impact assessment has been made using the six-step approach per the ESMF. The VECs are the ambient air quality at sensitive receptors to be affected by the air pollutants of H2S and NH3 which are the primary concern of the project. The results indicate that the cumulative impacts are minor.

Upstream and downstream facilities related to the first batch have been identified, and none of them are deemed to be associated facilities per the three criteria in the ESF. Thus, these facilities are generally supporting facilities that are necessary for the operation of the project facilities. Due diligence review is conducted for the supporting facilities, including incinerators, wastewater treatment plants, biogas-fired power generation facility, etc. It is found that the environmental performance of the supporting facilities meet the relevant Chinese standards, and the facilities can accommodate the solid waste and wastewater/leachate from the project. Alternative analysis is

conducted for With and Without Project, siting of transfer stations, solid waste transportation routes, and compaction technologies, to avoid/minimize the negative impacts on sensitive receptors.

The EMP provides mitigation measures including ECOP and site-specific measures, emergency preparedness plan, monitoring plan, the institutional arrangement and capacity building plan, and cost estimate. Comprehensive environmental monitoring programs for both construction and operation stages have been developed in the EMP. Particularly for landfills to be closed, the parameters and frequency of monitoring covering heavy metals, organic matters, odors and biogas are properly determined. After the landfills are closed, the monitoring of the landfill stability and soil erosion, groundwater, and biogas, have been incorporated into monitoring programs.

ESS4 Community Health and Safety

ESS4 is relevant because the project may result in adverse health and safety impacts for communities near the Project. The ESMF and social audit determined that there are residents living in the buffer zone of some landfills to be closed by the project. The construction and operation of SWM facilities, would introduce workers (direct workers, contracted workers, and community workers) to the project areas and consequently expose local communities to communicable diseases. Transporting construction material and equipment during construction, and solid wastes and products during operation would increase potential traffic volumes on the roads, causing safety risks to road users and local communities.

The project does not support construction of recycling parks. The construction and operation of SWM facilities under the project would not involve many new workers, given the size of SWM facilities would be small and medium, and machinery equipment will be used to replace manual labor. The newly introduced workers for the proposed SWM facilities and systems would mainly be sourced from local areas. Running the World Bank Sexual Exploitation and Abuse and Sexual Harassment Risk Assessment Tool shows GBV is of low risk in this project. The project will enhance rural SWMs and explore opportunities to provide jobs for informal waste pickers, which will bring health benefits to them.

In addition, the risk to the health and safety of communities might be caused by: 1) closure of landfill, if the landfill is not properly closed, the leachate and bio-gas may cause risk to community health and safety; 2) bio-gas storage and plastic waste storage, that could lead to fire or explosions threatening the safety of communities; 3) bad odor and noise produced by the operation of the facilities; 4) the eco-system provisioning and regulating service that are important to communities in rural setting may be affected; 5) the challenge in change of land use due to closure of landfills; and 6) community safety concerns induced by the collapse of unstable garbage piles. However, with good technical design and E&S mitigation measures, the risk on the community health and safety would be reduced significantly.

The project does not involve the production, use, collection, storage and transportation of industrial/agricultural hazardous materials and wastes, but the collection and transportation of household hazardous solid wastes. Running the World Bank Sexual Exploitation and Abuse and Sexual Harassment Risk Assessment Tool shows GBV is of low risk in this project. This is primarily due to the low rates of gender-based violence (GBV) in general, strict legal enforcement and protections, and low levels of worker influx/mobilization to be induced by the project.

The exclusion and screening checklists have been developed and included in the ESMF, which set up to cover the potential E&S issues for ESS4. The risk and impact on communities will be further assessed in the subproject EIA and SIA to avoid, minimize or mitigate the impacts on communities. A subproject ESMP will consist of the set of mitigation, monitoring, and institutional measures to be taken during project construction and operation. EIA for such activities as the closure of landfills will produce recommendations for land use planning, if necessary, to avoid risks to the public health and safety with considerations on potential leachate leakage, bio-gas migration, land uneven settlements. The social audit outline (Annex 9 of the ESMF) includes provisions to review the legacy circumstances of specific community safety and health issues in existing facilities (e.g., landfills) and consult the communities about concerns. The ESCP (under ESS4) explicitly requires relevant PMOs/PIUs to coordinate design institutes to include relevant measures in the design, construction, and operation (or closure) and post-closure maintenance plans to remedy legacy community health and safety issues, consistent with EIA, SIA, domestic regulations, ESS4 and GIIP. The ESCP (under ESS5) also prescribes that PMO/PIUs shall engage professional institutes to conduct appropriate technical, health and safety assessments to confirm the readiness and remedy measures (as necessary) for returning the land to the communities post the landfill closure.

The PMO has developed the first batch activities and prepared the EIA and EMP, and SEP. The potential risks and impact on community health and safety have been identified, assessed and mitigated in the EIA for the first batch per the ESF. The risk of fire and explosion on communities nearby due to leakage of biogas during and after the landfill closure is minor as the modeling results show that the concentration of CH4 at the communities is far below the threshold for fire and explosion of CH4; The closed landfills will be fenced to avoid access by the public, thus the risk to community health and safety due to uneven settlement, landslide, and leakage of biogas and leachate is minor; the fire risk from the sorting center on communities nearby is minor; increased transportation during construction and operation will pose risk on communities safety, a traffic management plan has been developed and incorporated into the EMP; the local communities near the landfills to be closed do not rely on provisioning and regulating service, although the landfills are in modified habitats without significant biodiversity value. The alternatives for location of transfer stations and routes of solid waste transportation have been developed and compared in the EIA, and the options with the least impact on communities have been selected.

In Linwei District, the transfer stations to be reconstructed are in the urban area surrounded by communities including schools. Among them, the Shengli Transfer Station to be reconstructed is just 17 m away from the boundary wall of Weinan Shiyan Middle School, but 100 m from the learning & teaching building of the school. Alternatives sites for the Shengli Transfer Station have been developed and compared, and the original site is preferred after consideration of environmental, social, financial and technical factors. The modeling results show that the noise and odor level at the school meet the respective standards. The local EPB and the school management were consulted with in the site selection process, and the proposal of reconstruction of the transfer station at its original sites was agreed. Specific measures, including buffer measures, and traffic management have been developed and incorporated into the EMP.

The EMP contains mitigation measures, emergency preparedness plan, monitoring plan, training plan and cost estimate for the community health and safety.

The Social Audit Report and the SIA for Batch 1 assessed the specific contexts in Chengcheng Landfill, Changshougou Landfill, and other subprojects that may induce particular community health and safety concerns. Around the Chengcheng landfill, local residents (around 400 households) constructed houses within the 500-meter buffer zone after the landfill was put into operation. The EIA for Batch 1 concludes that that the soil and groundwater is not polluted and the ambient air monitoring results for the landfill comply with relevant standards. The community health and safety risks for Chengcheng landfill is deemed Moderate. The north slope of Changshougou would be instable to some degree and entails moderate community safety risks. Corresponding social measures and actions were tailored per discussions with the design institutes, PPMO, PMO/PIUs and E&S consultants and in consultation with relevant government agencies. The Corrective Action Plan (in the Social Audit Report) and the Social Management Plan (in the SIA) set out relevant measures and actions to avoid, reduce and manage the community health and safety risks. PMOs will strengthen the engineering and non-engineering measures in the design for landfill closure and post-closure maintenance and monitoring, per the EIA/SIA/social audit, to minimize the community health and safety risks. The PMOs will establish and maintain a formal and functioning grievance redress mechanism to collect and address community concerns/complaints in a timely manner and timely disclose the environmental monitoring results to relevant households and provide necessary clarification. Shaanxi PMO will engage an experienced social institute as early as possible to follow up the process of E&S actions and confirm the gaps identified in the social audit has been filled in time. The material actions were included in the ESCP.

The subsequent batches of subprojects will adopt similar approaches and instruments to identify, assess, manage, and monitor the community health and safety risks for both relevant existing facilities (e.g., the other four landfills in Batch 2) and the new subprojects.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

ESS5 is considered relevant because of land acquisition, resettlement, and landfill legacy issues on land. Land acquisition and resettlement will mainly occur at sites of new construction of SWM infrastructure. The project focuses on the county and below county levels, and the footprint of most facilities, in general, would not be significant. It would range from several hundred square meters (for transfer stations) to a few hectares (for waste sorting facilities, kitchen waste treatment facilities, bulky waste treatment facilities, etc.). In some cases, household demolition and relocation may be necessary due to the impacts of safety butter zones. The construction of waste treatment facilities also needs to consider adequate space to store construction waste and the dumping of un-recyclable wastes. The location choice of SWM usually faces challenges from residents' due to concerns of about the potential health and overall quality of life impacts (NIMBY), which can in turn affect the pace of land acquisition. Some counties plan to reuse the landfill land to construct new facilities, which may lead to old community objections (including those relating to the original acquisition of the land) re-surfacing.

The project investment will also support the closure of existing landfills. The ESMF recommends a comprehensive E&S audit to learn the particular legacy circumstances and explore the feasibility of project design and mitigation measures. A resettlement audit (as part of the broader social audit applicable for existing facilities) shall be conducted to assess the compliance status of existing land and past resettlement and identify any complaints and outstanding issues to be remedied. According to the feasibility study reports, the PMOs proposed eight landfills for

closure. The significance of the landfill legacy issues depends on the legacy context, landfill scale, the specific claims of the local communities, and the specific land use plans after the landfills are closed.

By appraisal, the social consultant conducted a comprehensive audit of the four landfills included in Batch 1. Closing or improving the other four landfills are included in Batch 2, for which the social audit and social assessment will be conducted later when the design for landfill closure is known. The ESMF and the social audit identified two landfills (i.e., Majiagou and Yaotou landfills) in the Batch 1 have legacy land issues, whilst three out of four under Batch 2 would potentially have legacy issues on land and resettlement. Both Majiagou and Yaotou landfills leased land from the villages/villagers instead of permanently acquired it, which is what is needed to be compliant with then China's Land Management Law (LML) and both have not obtained the land certificate and are not conforming with official land use zoning and planning. Per the amended China's LML, Linwei and Chengcheng governments and PMOs shall coordinate with relevant authority to (a) align the landfill land use with the land zoning plan as set out by the land spatial planning ; (b) convert the farmland (occupied by Yaotou landfill) into construction land and reflect it in the up-to-date land spatial planning; and (c) seek land pre-examination with the Natural Resources Bureau; and (d) obtain the land use certificate. Compensation with villages/villagers is subject to the potential scenario after the landfill closure. If the land continues to be leased after landfill closure, the prorated land rental will be paid per the schedule in the land leasing agreements. Suppose the leased land is to be returned to the villages/farmers after landfill closure, the PMO will support preparation of a technical assessment to confirm the feasibility of return (including any risks/mitigation measures if needed). If the leased land is to be reused for other purposes after the landfill closure, the PMO and local government will support "good faith negotiations" to seek consent from the villages/villagers and adjust the provisions for compensation. In Batch 2, some PMOs proposed to construct waste treatment facilities on the remediated land with Bank financing (e.g., in the case of Zhangpo landfill). The PMOs agreed that the land shall be acquired and the population living within the specific exclusion zone shall be relocated per the RAP that is to be cleared by the Bank and before starting to build new facilities.

The ESCP includes provisions on legacy land issues to ensure legal compliance for landfill closure and protect the interests of relevant villages and villagers. Shaanxi PMO and relevant local PMOs endorsed relevant actions on remedying landfill legacy issues. Shaanxi PMO and the county/district PMOs have agreed to adopt a consistent due diligence review and remedy approach for the legacy issues for all supported landfill closures. As in the case of Batch 1, investments under Batch 2 will follow a process that allows to identify issues, analyze legacy circumstances, agree on, and implement appropriate corrective actions prior to any direct on-the-ground investment activities. Taking the opportunity of Batch 1 preparation, the Batch 2 counties/districts were also invited to join the session discussing landfill legacy issues. Batch 2 counties/districts also confirmed and endorsed the ESCP, particularly those actions related to landfill legacy issues. As part of the broader social external monitoring, Shaanxi PMO will hire a social institute to monitor and confirm the that identified issues are resolved per the agreed action plan and report the progress to the Bank on a timely basis.

Component 1 would have downstream resettlement implications, potentially associated with the recommended actions and strategies proposed by TA studies outputs. For example, a waste shed regional model, or a comprehensive regional urban-rural solid wastes management planning would propose to refine the distribution and development of a set of SWM infrastructure to bring economic viability for operation in a shared modality. The ESMF (in Section 6.1) tentatively screens the downstream risks by TA activities (in terms of land acquisition and resettlement, labor, OHS, community health and safety, etc.) during preparation. The ESMF (in Section 6) sets out a

specific procedure to analyze the downstream risks and impacts and integrate proper principles and measures into the TA outputs to proactively avoid, reduce, and manage the downstream risks, consistent with relevant ESSs.

The project adopts a combination of a framework and a site-specific risk mitigation approach. Most first batch subprojects will use existing state-owned land and not involve the new land acquisition or. Only minor land (2.02 ha) will be acquired to accommodate the sittings of transfer stations, with 4 households and 16 persons will experience minor economic impacts. Before Appraisal, Shaanxi PMO prepared an abbreviated resettlement plan (RP) for the first batch of subprojects. The Social Audit for the first batch of subprojects identified the outstanding land/resettlement issues in existing facilities (e.g., Majiagou and Yaotou landfills) and proposed time-bound remedial measures in consultation with the county governments and other stakeholders. The front-end collection points at the village/township levels will be built on the collectively-owned land, which will be provided by the local communities. The SIA has established a procedure to govern the land donation procedure to inform and consult relevant stakeholders and obtain their consent.

For the subsequent batches of investments, the ESMF (in Section 5) assesses the magnitude of resettlement in a quantifiable way according to the extent of information available in the project proposals. As part of the ESMF, the subproject screening checklist consists of elements to identify the application of a social audit for past resettlement or the resettlement planning for new land acquisition. A resettlement framework (RF) was prepared before Project Appraisal and included in the ESMF. The RF includes provisions on the social audit of existing land and past resettlement occurring prior to specific subprojects for both World Bank-financed activities and the associated facilities. The social audit should review prior resettlement within a timeframe of approximately three years of specific subprojects but will consider the context of specific subprojects and the significance of the prior resettlement case by case. The province ESMF (in Section 6) sets out governing principles and procedures and consultation strategies to consider downstream land acquisition and resettlement aspects as a genuine part of the TA studies.

During project implementation, Shaanxi PMO will coordinate the county/district PMOs to prepare RPs in a way consistent with ESS5 and RF for site-specific activities with land acquisition, restrictions on land use or involuntary resettlement. The project entities and the relevant government shall implement the land acquisition and resettlement per the Bank cleared RPs and the ESCP with internal and external monitoring and evaluation. In the ESCP, the PMO/PIU committed to (a) obtaining land permits in alignment with the subproject implementation plan; (b) allocating adequate resettlement funding in advance of land acquisition and resettlement; (c) taking possession of acquired land and related assets only after compensation in accordance with ESS5 has been made available; (d) assisting displaced persons in their efforts to restore livelihoods; (e) monitoring and evaluating the implementation of RPs and remedial actions in the social audit reports (as part of the broader external and internal social monitoring), among others. Following the ESMF, the TA ToRs shall include appropriate E&S provisions to screen and assess downstream resettlement risks as defined under ESS1. The TA outputs shall consist of proper advice for addressing downstream social risks consistent with ESS5.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

At stage of Appraisal, the specific locations of most project activities are not identified except for the first batch activities. Given that the project is designed to collect and treat/recycle the plastic waste from urban and rural areas,

the facilities would be located in developed areas and unlikely to involve critical habitats. However, given the environmental context that the Qin Mountains extends in the southern part of Shaanxi, some activities may involve natural habitats and modified habitats with significant biodiversity value, e.g. landfill closure, borrow/deposit pits, and buildings debris treatment facilities, but the first batch activities do not involve these sensitive areas. In 2020, Shaanxi Provincial Government approved a comprehensive protection plan for the Qinling Mountains and defined protection areas of three categories, i.e., core area, key area and general area. Through preliminary screening in the ESMF, it is identified that three districts of Chengcang, Linwei and Hanbin are partially located in the general area and key area, and Weibin District involves all three category areas of Qinling Mountains Protection Area. Exclusion and screening procedure for critical, natural habitats and modified habitats with significant biodiversity value, and key/core areas of Qinling Mountains Protection Area has been established in the ESMF. The geographical scope of ecologically protected areas in Qinling Mountains have been provided in the ESMF to exclude the project activities from such areas (key and core conservation areas). In addition, this project may have the risk of introducing alien species by the replanting of landfills after closure, but the project will not purchase and use natural products. An exclusion criteria to exclude alien species has been established in the ESMF, and a list of local species to be used for planting has been determined and recommended in the ESMF after consultation with experts.

This project will not purchase and use natural products.

In the EA process for the first batch, it is confirmed that all facilities to be supported under the first batch are neither in the key/core area of Qinling Mountains, nor involve critical and natural habitats. In addition, the landfills are in areas substantially disturbed by human activities and involve modified habitats. The baseline study indicates that the modified habitats do not have significant biodiversity value. The capping work of the landfill requires a large amount of soil to be borrowed. At the stage of appraisal, the location of borrow pits cannot be identified. A set of criteria for siting to avoid natural habitats and modified habitats with significant biodiversity value have been developed and incorporated into the ESMP. After consultation with local plant experts and EPB, the local plant species have been selected and listed in the EMP for replating in the landfills to be closed.

ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

ESS7 is relevant. Shaanxi is a traditionally Han Chinese-dominated province, and ethnic people comprised 0.56% of the province's population in 2020. Shaanxi has a number of ethnic minority autonomous sub-divisions (e.g., cities, counties, or townships). During the preparation, the World Bank Task Team, Shaanxi PMO, and the social consultant collectively screened the relevance of ESS7 when the project counties were determined. According to Shaanxi's feasibility study report and the ESMF, none of the participating counties is an ethnic minority autonomous jurisdiction. The SIA concludes that there are no ethnic minority communities or villages in project areas of Batch 1, such as Linwei District, Chengcheng County, and Chencang District. Therefore, the Ethnic Minority Development Plan (EMDP) was not developed for the 1st batch at the time of Appraisal. The ESMF confirms that no ethnic minorities have a collective attachment to the footprints of the proposed SWM infrastructures. The SIA for the subsequent batch of subprojects will further confirm whether there are ethnic minority villages or communities in the areas where the rural SWM systems will be improved with the Bank financing. It is considered unlikely that the physical investments will adversely impact ethnic minority communities or land. Hence, the project physical investment activities will not trigger any of the three circumstances (defined in Paragraph 24 of ESS7) requiring free, prior and

informed consent (FPIC). However, the TA studies to be financed (which would apply beyond the project area where there are ethnic minorities-dominated communities or villages) may directly benefit/impact ethnic minority households or communities.

Due to the downstream impacts of the TA activities, ethnic minorities, if impact, could be exposed to the typical types of social risks and impacts as identified for this project (land acquisition and resettlement, community health and safety, stakeholder engagement). If ethnic minorities are relevant to a specific activity, the TA outputs will further assess the vulnerabilities of relevant ethnic minority groups, identify the potential of disproportionate risks and impacts to ethnic minorities, and incorporate mitigation recommendations consistent with ESS7. Ethnic minorities will be consulted during the process of TA studies. Component 3 (project management, and monitoring and evaluation) would be unlikely to cause relevant social risks and impacts on ethnic minorities.

The ESMF summarizes the demographic profiles of ethnic minorities in the project counties. The ESMF consists of related elements on ethnic minorities in the E&S screening checklist. The ESMF also establishes procedural guidance and tools (e.g., TOR template) to ensure that the TA studies will assess the downstream social risks and impacts to ethnic minorities (if relevant) and advise on appropriate mitigation measures in the TA outputs, consistent with ESS7. The SEF includes culturally appropriate methods and strategies to assure meaningful consultation with the ethnic minorities (as relevant) throughout the project lifecycle to contribute to the project design and facilitate the E&S risks assessment and mitigation. The SEF also defines entry points (e.g., TA TORs, work plans, or village-specific participatory waste agriculture mulch collection plans) and sets out appropriate approaches and provisions to engage with ethnic minorities to inform the TA studies and promote the sustainability of PBIFM.

During implementation, the PMOs/PIUs will embrace a proactive and inclusive approach to screen the relevance of ESS7 and potential risks and impacts to ethnic minorities when more information is available on subsequent subprojects, TA activities, or PBIFM. The screening results will be documented in the relevant SIA report of SEPs. In case ESS7 applies to physical activities, an EMDP will be developed to elaborate engagement processes and mitigate adverse risks and impacts. The EMDP will take into account of ethnic minorities' cultural identities, practices, and institutional arrangements and explore opportunities to provide equal services for ethnic minorities. The EMDP should be disclosed locally and on the Bank's website after the World Bank clears it.

ESS8 Cultural Heritage

Given the environmental context that there are numerous cultural heritages, identified or not identified, in Shaanxi, and the nature and type of the project, this ESS is relevant. Construction of solid (plastic) waste infrastructure would potentially affect some movable or immovable objects, sites, or structures that may have cultural, religious, historical significance recognized and valued in urban and rural settings. The project is not likely to be in or in the vicinity of legally protected tangible cultural heritages, and it will not use cultural heritages for commercial purposes, and the material impact on cultural heritages will be avoided.

In the ESMF, the legally protected cultural heritage have been identified for each project district/county, and a checklist for such heritages has been established. An exclusion criteria has been established in the ESMF that any project activities in or near the heritages in the checklist should be excluded from the project. The ESMF also set out

the steps to be taken by the borrower, and other stakeholders in case of potential chance-find associated with civil works.

All subprojects will be screened for impacts on cultural heritage during the EIA and SIA process when specific locations are known. If this is the case, site-specific EIA and SIA will assess any potential risks the proposed subproject might have on cultural heritages, and tailor a site-specific cultural heritage management plan or measures. In any case, the subproject ESMP will include a chance-find procedure.

It is confirmed in the EA process that the first batch activities do not involve legally protected cultural heritages or heritages important to local communities. A chance find procedure has been incorporated into the EMP.

ESS9 Financial Intermediaries

This project will not involve financial intermediation, and the ESS9 is therefore not relevant.

B.3 Other Relevant Project Risks

No other specific E&S risks were identified.

C. Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways	No
OP 7.60 Projects in Disputed Areas	No

B.3. Reliance on Borrower's policy, legal and institutional framework, relevant to the Project risks and impacts

Is this project being prepared for use of Borrower Framework?	No

Areas where "Use of Borrower Framework" is being considered:

The use of Borrower environmental and social framework as defined in ESF has not been considered.

IV. CONTACT POINTS

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Borrower: People's Republic of China

Implementing Agency(ies)

Implementing Agency: Provincial level Development and Reform Commission Foreign Capital Financed Project Management Offic

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VI. APPROVAL

Task Team Leader(s):	Katelijn Van den Berg, Guangming Yan, Kremena M. Ionkova
Practice Manager (ENR/Social)	Ingo Wiederhofer Cleared on 24-Nov-2022 at 00:19:37 GMT-05:00
Safeguards Advisor ESSA	Nina Chee (SAESSA) Concurred on 28-Nov-2022 at 12:11:33 GMT-05:00