

Anhui Rural Road Resilience Program for Result (PforR)
Environment and Social Systems Assessment (ESSA)

FINAL

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ACRONYMS

ADT	Anhui Department of Transport
AHAB	Anhui Highway Administration Bureau
CRMB	County Road Management Bureau
CTB	County Transport Bureau
DLI	Disbursement-linked Indicator
EIA	Environmental Impact Assessment
EPB	Environmental Protection Bureau
EPL	Environmental Protection Law
ERAC	Ethnic and Religious Affairs
ESSA	Environmental and Social System Assessment
MEP	Ministry of Environmental Protection
MTB	Municipal Transport Bureau
NDRC	National Development and Reform Commission
NPC	National People's Congress
PDO	Program Development Objective
PforR	Program for Result
PLG	Program Leading Group
PMO	Program Management Office
RAP	Resettlement Action Plan
SA	Social Assessment
SAWS	State Administration of Work Safety
SC	State Council
TB	Transport Bureau
WB	World Bank
WRB	Water Resources Bureau
WSB	Work Safety Bureau

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EXECUTIVE SUMMARY

This report summarizes the key findings and recommendations of the Environmental and Social System Assessment (ESSA) for the proposed PforR lending of Anhui Rural Road Resilience Program for Result (the Program). The Program will support the rehabilitation and upgrading of existing rural roads in ten counties¹ in Anhui Province. Implementation of activities under the Program will rely on the existing national and provincial legal framework and institutional system for managing environmental and social safeguards issues. The purpose of this ESSA is to provide a comprehensive review of relevant environmental and social safeguards systems and procedures in China and Anhui, identify the extent to which the national and provincial systems are consistent with the PforR Bank Policy and the PforR Bank Directive, and recommend necessary actions to address eventual gaps as well as opportunities to enhance performance during implementation.

The assessment concluded that national and provincial rules and regulations for addressing environmental and social impacts are principally consistent with the Bank's policy and directive, while, certain aspects of implementation would need capacity building to strengthen the program implementation efficiency and effectiveness. Based on the assessment, a number of recommendations are proposed to the Program Action Plan or disbursement linked indicators (DLI).

The overall environmental and social risk rating of this Program is considered moderate.

Environmental and Social Effects

Environmental Benefits and Risks

The proposed Program is expected to have significant benefits of improving the rural transport connectivity and safety in ten project counties in Anhui, contributing to the poverty alleviation in the project counties which are national and provincial level poverty counties in Anhui province, and supporting the achievement of national target for a moderately well-off society by 2020.

The rural roads under the Program are a pool of roads selected from the existing government programs for ten project counties. The Program is designed to only include rehabilitation and upgrading existing low-class rural roads, and all these roads meet the PforR environmental and social screening criteria. The anticipated adverse environmental effects of the Program are not expected to be significant considering the nature of the program activities (i.e. rehabilitation and upgrading of existing low-class rural roads which have limited geographic footprint of civil works where the incremental effects are likely to be small) and non-sensitive environmental and social context.

Based on initial environmental screening, the potential environmental impacts of the Program will likely include: loss of surface vegetation and soil erosion; impact on ecological system and

¹ Ten counties include: Yuexi, Shucheng, Funan, Linquan, Lixin, Sixian, Shouxian, Xiaoxian, Dingyuan and Hanshan.

wildlife; drainage and hydrological impact of rivers; impacts on water quality and aquatic life; nuisance of dust and noise; disposal of waste materials; traffic disturbance; labor influx and community disturbance; potential impacts on chance-find physical cultural resources; road safety etc. Such potential impacts are considered as insignificant and well known for such rural road rehabilitation and upgrading projects, and can be adequately managed with known mitigation measures and proper management practice during construction.

Social Benefits and Risks

The proposed Program will improve thousands kilometers of rural roads in ten counties in Anhui Province, which will have significant social benefits to many rural communities by providing them with better and safer connectivity to urban areas and services, such as markets, hospitals, schools, and banks. These roads are an integral part of local development and will therefore provide local communities with more resources and work opportunities, thereby breaking their isolation and contributing toward their socioeconomic growth. A total of 1661 villages and over 2 million population will directly benefit from these road improvements.

After careful assessment of a) local policy framework, b) operational systems managing social impacts from development projects, and overseeing well-being of vulnerable groups, and c) capacity and experience of local institutions in dealing with the above aspects, and after extensive consultations with key stakeholders, it is concluded that the PforR activities will not result in substantive negative impacts and social risks. This is because all selected rural roads under the PforR are upgrading and rehabilitation of existing low class rural roads, and most of improvements will be carried out within the existing rights-of-way. Only small amounts of land acquisition might be needed for limited widening or alignment improvement. For such impact, there is well established system to manage the impacts. Having involved in selecting rural roads for improvement, local communities expressed strong support for the Program, and view it as a means to improve their access to markets and the world outside. As a result, potential social conflicts are not expected from PforR activities. The assessment found that issues of proper compensation and rehabilitation for limited scale land acquisition, equal benefit for concerned minority communities, special assistance for vulnerable groups, and potential influx of labor have all been well managed by local systems with appropriate measures and competent local agencies. Local practices in the project counties in Anhui Province are in line with the World Bank policy on Program-for-Results Financing (OPCS5.04-POL.01) and the related social safeguard policies. Areas for improvement are presented as recommendations, documented in this report.

Consultations and Information Disclosure

During the ESSA preparation stage, the Bank team has conducted a number of consultations with relevant stakeholders including government departments and local communities in the project counties during field visits. Consultation workshops for the draft ESSA was organized during Jan 11-12, 2018, including one in provincial capital city of Hefei and two in two project counties with participation of multi-stakeholders to solicit comments and feedbacks on the findings and recommendations of the draft ESSA (minutes of meetings are included in Annex 1). The draft

ESSA in Chinese was locally disclosed on November 15, 2017, and disclosed in InfoShop on January 16, 2018.

Recommendations for Environmental and Social Actions

With general consistency of the environmental and social systems with the Bank's policy, the following recommendations are proposed to enhance the capacity and implementation effectiveness of the existing system, which are proposed to the Program Action Plan or DLI.

- (1) Strengthening the performance of supervision consultant: During construction, the role of project supervision consultant needs to be fully utilized in terms of environmental supervision. Through review of existing reports from supervision consultants, it is observed that environmental performance is not adequately reflected in the supervision reports, and sometimes even absent. Therefore, it is recommended that environmental supervision shall be explicitly incorporated into the bidding documents and contracts of supervision consultant. The on-site supervision of environmental performance of contractors shall be adequately reflected in the regular supervision reports from the consultants to the project implementation units.
- (2) Capacity training: This assessment concludes that CTBs management staff have rich experience in transport construction projects, while may not have adequate and systematic knowledge of environmental and social safeguards. The Village Supervision Council members who play an important role in village roads supervision also has limited knowledge and experience in environmental and social safeguards supervision. Therefore, it is recommended to strengthen the capacity building efforts for the CTB staff (CRMB, QSS), VSCs, as well as contractors and supervision consultants to enhance the effective management and supervision of environmental performance of rural road construction projects under the Program.
- (3) Land acquisition and compensation policy: Local systems and practices are in line with the World Bank policies on involuntary resettlement, except that under current practice, decisions on village-level land use change for construction activities are made through consultation meetings by village committees. However, as a best practice, it is agreed that the PMO will support normalization of the village consultation and compensation mechanism, to ensure equitable and transparent outcomes. In cases where land is voluntarily donated, the process should be clearly documented in writing. In cases where compensation (in kind or in cash) is given to affected families by village committees, clear records of such provisions will be documented to improve transparency.
- (4) Monitoring and evaluation: The PMO, in collaboration with the participating counties, has agreed to establish a third party monitoring mechanism, which will work directly with county implementation agencies and concerned township governments, to document the process and outcomes of land acquisition in project counties, if such activities take place, and submit them to PMO and the Bank semiannually.

CHAPTER I: INTRODUCTION

1.1 Background

A. Country Context

For the past thirty years, the Chinese economy has grown at a remarkable pace. However, this growth has not been spread evenly throughout the country. There are growing wealth disparities between coastal and inland regions, as well as between urban and rural areas, and today, more than 150 million Chinese people live below the USD 1.90 per day international poverty line. In support of shared prosperity for all Chinese people, the Government of China has given priority to economic development in the lagging western and central regions through the draft 13th Five-Year Plan (March 2016), which aims to eliminate extreme poverty by 2020. One tenet of the 13th Five-Year Plan is the improvement of rural road networks. According to a recent study, for every CNY10,000 invested in rural roads, approximately 3.7 villagers may be lifted from poverty, and for every CNY invested, an approximately six-fold increase in rural GDP may be achieved.^{2,3}

B. Provincial Context

Anhui Province is located in the middle and lower reach of the Yangtze River, with the land area amounting to 139,400 square kilometers. While located in eastern China, Anhui Province has not been an equal beneficiary in the growth of the last three decades. Compared to its neighbors to the east, Zhejiang and Jiangsu Provinces, Anhui has lagged behind in economic development. Anhui's Gross Domestic Product (GDP) reached US\$5,633 per capita in 2016⁴, which was about 47 percent (US\$11,600) and 42 percent (US\$13,000) of the levels of the more prosperous Zhejiang and Jiangsu provinces respectively. There is significant disparity within the Province as well, with most of the wealth concentrated in industrial regions close to the Yangtze River Delta, such as Hefei, Wuhu, and Ma'anshan.

In 2016, the total provincial population was 61.96 million, with natural growth being 6.19%. The total GDP was CNY2411.8 billion, averaging CNY39,092 per capita. The urban per capita income was CNY29,156 and rural per capita income was CNY11,720. There are 16 municipalities in Anhui Province, including 62 counties (cities) and 43 county level districts. Anhui ranked the eighth poorest provinces in the country. In 2011, the poverty incidence rate was 14.7% with 7.9 million of poverty persons. After serious efforts made in 12th Five Year Plan with allocation of CNY900 million of poverty alleviation funds, the poverty incidence was reduced to 5.72% in 2015 with 3.09 million of poverty population in the province. Most these poverty are located in northern and western mountainous areas with 20 national poverty counties

² Shenggen Fan, Linxiu Zhang and Xiaobo Zhang, Reforms, Investment, and Poverty in Rural China, *Economic Development and Cultural Change*, pp 395-421, 2002; 2002, data has been converted to value in 2014 based on Fixed Assets Investment Price Index and Consumer Price Index published by National Statistics Bureau of People's Republic of China.

³ Wei Zou, Fen Zhang, Ziyin Zhuang, and Hairong Song, Transport Infrastructure, Growth, and Poverty Alleviation: Empirical Analysis of China, *ANNALS OF ECONOMICS AND INANCE* 9-2, 345-371 (2008)

⁴ National Statistics Bureau

and 11 provincial poverty counties. Along with reduction of poverty incidence, the infrastructure conditions in rural areas had also been improved in the 12th Five Year Plan period, with road access to natural villages risen from 77% to 90%, villages with drinking water difficulties reduced from 30% to 4%, and access to electricity from 98% to 100%.

In spite of such improvement, rural accessibility in Anhui Province is still at relatively poor state. By the end of 2015, there were 172,109 km of rural roads in Anhui, including 24,253 km of county roads, 36,498 km of township roads, and 111,358 km of village roads. Village roads account for 65% of total. In terms of technical classification, 5103 km are Class II road, 18,164 km as Class III roads, 144,790 km as Class IV roads, and 4052 km as no class roads. Over 87% of rural roads are either Class IV or under.

C. Sector Context

China has built a massive transport infrastructure, including rural roads, over the past three decades, and added over one million kilometer (km) of rural roads to its road network between 2001 and 2010⁵, responding to mobility needs emerging from the surge in motorization. By the end of 2015, the total length of rural roads had reached about 3.98 million km⁶, enabling paved road access to 98.6 percent of towns/townships and 94.5 percent of administrative villages in China. While the paved roads have greatly facilitated mobility in rural areas, many of the rural roads were built with low technical and safety standards. In addition, many ‘natural’ villages⁷ are not yet accessible by all-weather paved roads. To address these challenges, the national 13th FYP calls for the construction, upgrading and maintenance of millions of kilometers of rural roads, strengthening of road safety infrastructure, and improvement of rural bridges. The policy framework and technical guidance is provided by the national Ministry of Transport, in the form of policies, directives and technical standards such as the ‘13th Five Year Transport Plan for Poverty Reduction’, ‘Guidance on Rural Roads Development’, ‘Safe Road Program’, ‘Technical Standards for Class I to IV roads’.

Following the national trends, Anhui Province increased its stock of rural roads (comprising county, township and village roads) from 34,000 km in 2000 to 172,109 km in 2015. About 168,057 km have a Class IV or above technical standard and another 4,052 km are sub-standard roads (mostly earth roads with a few drainage structures). Of these, village roads comprise some 11,000 km. About 68.2 percent of the rural road network is paved⁸. Except for the roads constructed or improved within the last 5 years, Anhui’s rural road network is mostly in fair to poor condition owing to the uneven quality of maintenance and perennial damage from flooding and landslides. The expansion in rural road connectivity, while critical for the poverty alleviation, has not been matched with a commensurate improvement in asset quality and maintenance, safety, and climate resilience. Meanwhile, reliable road access to poor and disaster-

⁵ US expanded its road network by over a million kilometers during 1911-1920.

www.trb.org/Publications/Blurbs/167787.aspx

⁶ www.jttj.gov.cn/shownews.asp?id=3021. By classification, rural roads in China include county-level, township-level, and village-level roads.

⁷ Natural village means a small village formed naturally with time, which is classified as administration village

⁸ Source: Anhui Department of Transportation

prone areas remain a challenge. As a result, some 75,000 km of rural roads require rehabilitation, upgrading and safety improvements, which will be implemented under 13th five year plan with a total investment about CNY40 billion. The program builds on the achievements of the past two Five-Year Plans and specifically targets the remaining pockets of rural poverty in the province. The program aims at improving maintenance, all-weather mobility, safety and climate resilience of rural roads in the province, especially in the most poor and vulnerable counties, while providing engineered road access to hundreds of poor and isolated villages.

There are two government programs from which the PforR Program will be drawn from. The first is **Anhui Province 13th FYP (APFYP)** for Rural Road Development, which aims to address these challenges through (i) climate resilient rehabilitation and upgrading of county and township roads; (ii) road safety improvements; (iii) a comprehensive road maintenance program; (iv) overhaul of unsafe bridges; (iv) improved protection and control of road assets; and (v) training of technical staff. Under APFYP, the subprojects under the smooth traffic program and road safety improvement program will be included as potential candidates to be financed for PforR operation. The second government program is **County Five Year Plan** of rural road improvement by local county governments (CFYP). Besides the rural roads construction program imbedded into the Provincial FYP, each county has their county Five-Year Programs focusing on rural roads construction and rehabilitation to respond to development needs, such as unsafe bridge improvement and rural road maintenance activities. County governments are responsible for rural roads construction and maintenance with policies, financial support and technical oversight rendered by the central and provincial governments.

D. Scope of PforR Program

Based on the two government programs above, the provincial PMO proposed 10 counties in Anhui Province for participating in the proposed PforR, which will support the implementation of the following sub-programs: i) smooth traffic program (under APFYP); ii) safe road program (under APFYP); iii) unsafe bridge improvement and rural road maintenance program (under CFYP); iv) capacity building program (under APFYP). Tentative details of the programs are provided in Chapter II.

The selected ten counties belong to eight municipalities in the province, and most of them are located in northern part of the province and in Dabie Mountain where remaining rural poverty is concentrated. Among ten project counties, eight of them are national poverty counties, and one is provincial poverty county. The total population of ten project counties amount to 12.21 million, ranging from only 400,000 in Yuexi County to 2.27 million in Linquan County. Among project counties, by the end of 2015, there are 905,000 rural poverty population, ranging from 14,000 in Hanshan County to 146,000 in Linquan County. They account for about 30% of total poverty population in Anhui Province. As many as 9% of rural population in the project counties are under the poverty line, which is significantly higher than provincial average or 5%. There are 730 poverty villages in 10 project counties, which account for 24% of total number of poverty villages in Anhui Province. The average rural per capita income among project counties was only CNY8,221 (2014), which was only 66% of provincial average. Table 1 provides a basic information of project counties. The implementation of proposed Project will result in alleviation

of poverty and improvement of rural transport condition for large number of rural population in the project areas.

Table 1: Basic Information of Project Counties

City	County	Total Populations (1000)	Total Rural Population (1000)	Rural Poverty People (1000)	Percent of Rural Poverty	Total Land Area (km2)	Rural Per Capita Income (2014)	Number of Poverty Village
Bozhou	Lixin	1,687.0	1368.0	137.0	10%	2,005	8,340	90
Suzhou	Xiaoxian	1,440.0	1214.8	140.0	12%	1,853	8,290	87
	Sixian	944.0	790.3	51.0	6%	1,787	7,949	65
Fuyang	Lingquan	2,269.0	2035.6	146.0	7%	1,839	7,826	96
	Funan	1,673.0	1426.3	134.0	9%	1,698	7,843	90
Huainan	Shouxian	1,372.0	1314.6	90.0	7%	2986	7,812	72
Chuzhou	Dingyuan	962.0	804.5	73.0	9%	2,998	8,342	70
LuAn	Shucheng	995.0	882.3	72.0	8%	2100	8,410	80
Ma'anshan	Hanshan	470.0	353.1	14.0	4%	1,047	12,954	15
Anqing	Yuexi	400.0	372.1	48.0	13%	2,398	8,001	65
	Total	12,212.0	10561.5	905.0	9%	20,711	8,221	730

Sources: Provincial PMO and county PMOs.

1.2 Objectives and Scope of the ESSA

As a PforR lending operation, implementation will rely on the existing country and local legal framework and institutional system for managing environmental and social safeguards issues. The purpose of this ESSA is to provide a comprehensive review of relevant national and local environmental and social safeguards systems and procedures in China and Anhui Province; identify the extent to which the country/local systems are consistent with the core principles and elements of World Bank Policy for PforR; and recommend necessary actions to address gaps, as well as opportunities to enhance performance during implementation. Specifically, the main tasks of ESSA are to:

- Review the national and provincial legal policy framework related to environmental and social safeguards applicable for the program;
- Review management and implementation procedures of environmental and social safeguards systems in Anhui province, especially with regards to the activities supported under the PforR;
- Review and assess the institutional capacity of various relevant agencies involved in the environmental and social impacts management during implementation; and
- Recommend actions to improve the performance of existing systems in line with country system requirements as well as the core principles of PforR instrument.

1.3 Methodology

The ESSA is a World Bank document prepared by World Bank staff and consultants through a combination of reviews of existing program materials and available documents, interviews with government staff, and consultations with key stakeholders and experts. Consultations were carried out during preparation to better understand the environmental and social concerns of

stakeholders and to seek feedback on the findings and recommendations of the ESSA team. After completion of draft ESSA, a series of consultation workshops was organized during Jan 11-12, 2018, including one in provincial capital city of Hefei and two in two project counties with participation of multi-stakeholders to solicit comments and feedbacks on the findings and recommendations of the draft ESSA. The feedback of this consultation meeting is incorporated into the finalization of this ESSA.

The methodology involved: (i) identification of the potential impacts from the activities to be supported by the PforR; (ii) a desk review of the laws, regulations, requirements, and guidelines on the EHS and social management to prevent or mitigate the identified aspects; (iii) meetings and interviews with key stakeholders ranging from implementing agencies, local environment protection and land resources bureaus, as well as local government officials and representatives of local communities; and (iv) visits to a number of rural roads before and after upgrading in selected counties. The visited rural roads include county, township and village roads at different stages of improvement or upgrading. Observation and discussions during these visits provided a greater understanding of the potential environment and social impacts associated with these types of activities and capacity and procedure of government departments in dealing such impacts, including relevant measures currently adopted in accordance with relevant laws and regulations.

CHAPTER II: PROGRAM DESCRIPTION

2.1 Program Background

The proposed Program is aligned with the 2013-2016 World Bank Group Country Partnership Strategy (CPS) for China, which focused on three main pillars: support greener growth, promote more inclusive development, and advance mutually beneficial relations with the world. The proposed Program for Results directly supports the first two CPS pillars for green and inclusive development by reducing transport costs for rural road users and increasing accessibility for the rural people of Anhui Province.

As the Program supporting counties are among the poorest in Anhui Province, the Program supports the World Bank's twin development goals of shared prosperity and poverty alleviation by providing these low income populations with more efficient transport access to markets and public services and by strengthening the integration between rural and urban markets, creating growth opportunities for both populations.

The People's Republic of China has requested World Bank Program for Results (PforR) financing for improvement of the rural road network of selected counties in Anhui Province. Although this will be the first PforR Program in Anhui Province, the Bank and Anhui Province has a long record of corporation, and the Bank has financed several *transport projects* in Anhui, most recently: Anhui Road Maintenance Innovation and Demonstration Project (P153173), currently under preparation; Anhui Medium Cities Urban Transport Project (P111421), under implementation; and Anhui Highway Rehabilitation and Improvement Project (P099112), which closed in 2012.

The Bank has decades of experience in the Chinese rural roads sector and has been instrumental in introducing important technical and institutional innovations drawing upon its global knowledge and experience. For this Program, the Bank will focus on the following:

- **Rural Road Maintenance.** Anhui’s focus on maintenance is recent, and the capacity for road maintenance is much lower than for road development. Rural road maintenance is mostly reactive in response to emergencies and weather-related events, and a culture of regular, programmed routine and periodic maintenance is yet to be established. The Program aims to support a technical basis for maintenance planning and programming, institutional and technological modernization; a performance culture and accountability for results, and budgetary priority and adequate allocations for rural road maintenance.
- **Climate Resilience.** Aspects of climate change prevalent in Anhui include increasing seasonal temperatures and rainfall becoming more concentrated, with higher storm intensity and frequency, especially during winter months. It is estimated that return periods for extreme rainfall events could increase by a factor of four. To enable Anhui to meet the current and future challenges of climate change, the Program will adopt the concept of ‘build back better’, with focus on (i) raising the roadbed in floodplains; (ii) constructing /retrofitting drainage structures to handle more intense and frequent storms; (iii) protecting road cuts, embankments and drainage structures from erosion and scour with appropriate geotechnical and revegetation technologies; and (v) dust control on unpaved roads through built-up areas.

Choice of financing instrument. The PforR financing instrument is *applicable* for the proposed Program, because: (a) the Bank will finance components of a government program that are not anticipated to have substantive adverse environmental or social impacts; (b) the components of the Program are relatively uniform and interchangeable; (c) based upon preliminary discussions, the Program fiduciary, environment, and social safeguards systems is adequate to meet the requirements of a PforR; and (d) the results-based disbursement mechanism was deemed acceptable by the Government and project agencies.

2.2 Government Programs

There are two government programs from which the PforR Program will be drawn from. The first is Anhui Province 13th Five Year Plan (APFYP) for Rural Road Development, which aims to address these challenges through (i) climate resilient rehabilitation and upgrading of county and township roads; (ii) road safety improvements; (iii) a comprehensive road maintenance program; (iv) overhaul of unsafe bridges; (iv) improved protection and control of road assets; and (v) training of technical staff. ‘*The Anhui Provincial Road Smooth Traffic Program – Implementation Guide (March 2016)*’ provides a comprehensive planning and operational manual for program implementation. Under the rural road Smooth Traffic Program, between 2016 and 2018, all counties in the province will implement a range of county-township, and township-village rural road upgrading, and ensure each township will be connected with at least one good township road at Class III level, and ensure pavement made for all large natural villages particularly for 3000 poverty villages in the Province. This program will cover some 75,000 km of rural roads at a cost of RMB 40 billion.

Under the road safety improvement program, all rural township-village roads connecting administrative villages will eliminate potential unsafe spots. The Safe Road Program (SRP) was launched by national government on November 3, 2014, which aims to improve the safety of township and higher level roads substantially, complete the treatment of potential safety hazards, significantly increase the safety of road infrastructures, and comprehensively enhance the capacity of road safety governance by 2020. Provincial governments have the overall responsibility for SRP implementation in their jurisdictions. In addition to funding from the central and provincial governments, the county governments allocate funds to support SRP from their fiscal budgets.

The second government program is **Five Year Plan** of rural road improvement by participating county governments (CFYP). In addition to the rural roads construction imbedded into the Provincial FYP, all counties have their own county Five-Year Program focusing on those rural roads construction and rehabilitation not include under the APFYP to respond to development needs, such as unsafe bridge improvement and rural road maintenance activities. County governments are responsible for rural roads construction and maintenance under CFYP with policies, financial support and technical oversight rendered by the central and provincial governments. Anhui Provincial Government initiated the Unsafe Bridge Improvement Program as a public welfare program in 2011 that aimed to avoid bridge collapses caused by technical failures. During the 12th FYP, about 6,000 endangered bridges were reconstructed or retrofitted. The Provincial Government will continue the program in the 13th FYP to eliminate hazardous bridges.

Following the promulgation of ‘*Regulations of Anhui Province on Rural Highways*’ in March 2013, Anhui Provincial Government launched a three-year rural highway management program throughout the province with the intention of building up management and technical capacity for road maintenance at county government and village committee levels. This program has been mainstreamed as part of the APFYP and will complement the maintenance program for national and provincial highways under the proposed Anhui Road Maintenance Innovation and Demonstration Project (P153173). In parallel, APFYP places renewed emphasis on: institutional capacity building, encompassing technical inspection and audits, monitoring and evaluation systems; protection of road assets (especially vehicle overloading control, prevention of ROW encroachments, and application of environmental safeguards); and staff training, especially for front-line technicians in improved road and bridge construction and maintenance technologies, project management, and quality assurance and quality control (QA/QC).

2.3 The PforR Program

The Program Development Objective (PDO) is to improve the rural road network connectivity, safety and quality in selected counties in Anhui Province. The PforR operation is a result-based program to support the highest priority of road rehabilitation and upgrading activities in selected 10 counties by financing a sub-set of current provincial and county government programs. They include rehabilitation 2198 kilometers county-township and township-village roads under smooth traffic program, and improvement of 1786 km township village roads under safe road program as part of APFYP. While rehabilitation of 540 dangerous bridges with 11,500 meters,

and implementation of rural road maintenance program for 935 km are part of relevant county five year plans. The USD 200 million loan will alleviate local financing pressures for the implementation of the government program. In addition to the civil works, the PforR will also include institutional strengthening activities.

The PforR supports improving rural accessibility in terms of travel time. The PforR will increase the percentage of villagers that can access markets and critical services within a reasonable timeframe by road and mitigate road safety risks through targeted road safety infrastructure and facilities investments. Civil works include improvement and rehabilitation of different types of rural roads under smooth traffic program and road safety program, rehabilitation and upgrading of unsafe bridges, and maintenance work on existing rural roads.

Program for Results. The proposed PforR Program (“Program”) will finance a *geographical slice* (10 counties in eight municipalities)⁹ of *selected sub-components* of the government program described above over five years. Specifically, the Program will support the implementation of the following sub-programs:

- 1) Smooth traffic program under APFYP (Total length: 2,198 km, Total cost: US\$216 million)
- 2) Safe road program under APFYP (Total length: 1,786 km, Total cost: US\$46 million)
- 3) Bridge improvement program under CFYP (Total number: 540 and total length: 11,542 meters; Total cost: US\$60 million); and Rural roads maintenance program under CFYP (Total length: 935 km, Total cost: US\$92 million)
- 4) Capacity building program (Total cost: US\$0.50 million); and

2.4 Institutional Arrangement for Implementation

For the proposed program, Anhui Province has established a program leading group (PLG), whose members coming from Anhui Department of Transport (ADT), Anhui Provincial Financial Department, Anhui Provincial Development and Reform Commission, and governors of participating counties. The PLG is responsible for providing strategic guidance and ensuring political support for program initiatives, and is led by director of Anhui Provincial Transport Department. The deputy directors include directors from provincial highway bureau, program management office, and directors of county transport bureaus from participating counties

Based on existing government program implementation arrangement, the PforR will be implemented by Anhui Highway Administration Bureau (AHAB), eight municipalities’ Transport Bureaus (MTB), 10 counties’ Transport Bureaus (CTBs) and related Township Governments. The Anhui Rural Road Administration Division (ARRAD) of AHAB will provide sectoral administration, instructions, and supervision of program activities. The eight municipalities’ Transport Bureaus will provide coordination and facilitation to the Program

⁹ The ten counties - Lixin (Bozhou Municipality); Xiaoxian, Sixian (Suzhou); Linquan, Funan (Fuyang); Shouxian (Huainan); Dingyuan (Chuzhou); Shucheng (Lu’an); Hanshan (Ma’anshan); and Yuexi (Anqing) - have been selected by Anhui Province based on levels of poverty, socio-economic development, past performance, and counties’ interest.

implementation, while the 10 CTBs will be responsible for day-to-day program implementation, including for project management, procurement, safeguards, monitoring and reporting.

All 10 county transport bureaus, county township highway administration bureaus as well as relevant 8 municipal transport bureaus have established PforR program coordinating teams, which are responsible for program coordination, implementation and management, as well as supervision and monitoring. In addition, all relevant municipalities and counties have established program leading groups in order to facilitate the program implementation. Among them, in Fuyang and Anqing Cities, PLG was set up in city transport bureau. In Huainan, Bozhou, and Shuzhou Cities, PLG was set up in city county township transport bureau; in Luan City, PLG was set up in city rural highway administration bureau. For all ten counties, PLG was set up in all county transport bureaus. Through discussions with officials from both provincial Transport department and relevant city and county agencies, there is strong commitment and support for the proposed PforR and high expectation for the successful completion of the program.

The existing Program Management Office (PMO)¹⁰ is housed at Anhui Foreign Investment Promotion Office (FIPO) under ADT to better support the Program. The PMO will provide overall coordination and communication with the Bank.

¹⁰ The PMO has been implementing other roads projects financed by IFIs (including the World Bank) in Anhui Province

CHAPTER III: POTENTIAL ENVIRONMENTAL AND SOCIAL EFFECTS

3.1 Environmental and Social Screening

The activities under the current Program are a portion of the existing government programs (i.e. APFYP, CFYP) in ten counties in Anhui, which include rehabilitation and upgrading of existing rural roads, renovation of unsafe bridges, road safety enhancement and road maintenance. During the formulation of the Program, environmental and social screening criteria were taken into account to define the eligibility for inclusion in the Program, including: (1) only rehabilitation and upgrading of existing rural roads are eligible, and no construction of new roads are included; (2) low class roads (Class III or below); (3) small scale bridge (i.e. less than 40m single span or less than 100m in total length); (3) no large scale land acquisition or resettlement; (4) no roads located in on sensitive environmental and social areas (e.g. protected areas, physical cultural resources), and no road to be rehabilitated or upgraded support resource extractive industries.

An initial environmental and social screening was undertaken at the Project Concept Note stage and ESSA preparation to: (i) identify program activities likely to have significant adverse impacts on the environment and/or affected people which are not eligible for financing and should not be included under the Program; and (ii) determine the priority areas for further attention during the environmental and social system assessment. Results of the initial screening are as follows:

- The physical activities under the Program are rehabilitation and upgrading of existing rural roads in non-sensitive environmental and social context. These include improvement of existing rural roads with new surface pavement, limited widening where condition allows, improvement of drainage ditch, reconstruction or retrofitting existing unsafe bridges, installation of road safety facilities and signage, and maintenance of existing rural roads. The activities limit works to the existing right-of-way or subgrade footprint, without creating new lanes or involving large amount of slope cutting/filling.
- The Program does not include new construction of rural roads, does not include any rehabilitation and upgrading of existing rural roads that may have significant direct or indirect adverse impacts on sensitive environmental and social areas (e.g. protected areas, physical cultural resources), and does not include improvement and upgrading of existing roads to support resource extractive industries.
- As designed, all the projects under the Program meet the environmental and social screening criteria of the World Bank PforR Policy and Directive, therefore, there is no exclusion needed.
- The Program is expected to have significant social benefits to rural communities (especially those living below poverty line) through restoring and improving the quality of existing rural road infrastructure, improving the accessibility of rural communities to healthcare, education and markets, and their living quality.
- Given the above conclusion, the Program is expected to have moderate or low environmental and social impacts, and thus is considered suitable for PforR approach.

3.2 Potential Environmental Benefits and Risks

The anticipated adverse environmental effects of the Program are not expected to be significant considering: (i) the Program supports rehabilitation and upgrading of existing rural roads which have limited geographic footprint of civil works where the incremental effects are likely to be small; (ii) mitigation measures for rural road rehabilitation and upgrading are known and effective with proper management practice during construction.

Based on initial environmental screening, the program will have moderate or low impacts in the following aspects:

- ***Loss of surface vegetation and soil erosion:*** The rehabilitation and upgrading of existing rural roads will need to clear surface vegetation for construction sites, road widening and curve straightening improvement. This may include loss of standing trees, bushes and farmland crops. Clearing surface vegetation and excavation of soil/stone will disturb land surface that is prone to soil erosion. Since the program only includes rehabilitation and upgrading of existing rural roads, most construction activities are in the existing road alignments with limited widening where appropriate, there is little or very limited geographic footprint expected, therefore, the loss of surface vegetation and soil erosion is expected to be small and can be effectively mitigated through well-known measures such as minimize land disturbance, timely revegetation, properly disposal of spoil wastes in disposal sites with erosion control and reclamation measures..
- ***Impacts on ecological system and wildlife:*** Road construction may have adverse impacts on ecological system (loss or conversion of natural habitat, disturbance of wildlife). Construction material (e.g. sand and aggregate) directly excavated from river bed or quarry may have impacts on natural habitat or sensitive ecosystem. There is also potential risk of illegal hunting of wildlife by laborers. The road improvement may also have the induced impacts of improved accessibility to natural habitats, forests or other sensitive ecological systems otherwise inaccessible, thus facilitate natural resources exploitation. This Program does not include any road that is within environmental sensitive areas and any road that is to be improved for natural resource exploitation purpose. Only existing rural roads are included in the Program, therefore, no induced impact of opening new access to previously inaccessible environmentally sensitive areas is expected.
- ***Drainage and hydrological character of river:*** Rural road construction may alter the rainwater drainage pattern in the project area, and bridge construction may have impacts on the hydrological character of a river. This type of impact is expected to be little or very limited as the program only includes rehabilitation and improvement of existing rural roads, without opening new road alignment and significant change of topography. It will not change the drainage pattern in the project area. The improvement of bridges on these existing roads will not involve alteration of river channels, and is subject to established procedures of flood control assessment and design review.
- ***Impacts on river water quality and aquatic life:*** Construction near water body may cause soil erosion and sediment pollution that will have adverse impacts on aquatic life in river or reservoir. This Program only supports the rehabilitation and upgrading of existing rural roads, and the scale of the civil works is limited. With sound construction management practice (e.g. wastewater water management, adoption of sedimentation tanks, erosion

control measures etc.), the soil erosion and sediment pollution to water body can be effectively mitigated. Therefore, no major impact in this regards is expected.

- ***Nuisance of dust and noise:*** Construction of road will generate dust from soil and stone excavation, bulk material handling, material transportation etc. Exhaust from construction vehicles may also cause certain air pollution in the construction sites. Operation of construction equipment will generate noise nuisance during construction stage. These are typical construction nuisance for communities along the project roads. As this program only supports rehabilitation and upgrading of existing rural roads, no significant amount of civil works is expected, and no high noise construction method (e.g. blasting) is involved. With good construction management practice (such as water-spraying on construction sites, covering of bulk materials and transportation trucks, use of low noise equipment/method, no nighttime construction etc.), the dust and noise impacts of rural road renovation can be effectively mitigated.
- ***Disposal of waste materials:*** Construction of road will generate certain amount of waste material which, if not well managed, will have adverse impacts on ecological environment and generate soil erosion. The renovation of existing rural roads under this program will have limited amount of soil and stone excavation works, and is not expected to generate large amount of spoil material for each individual project road. Therefore, there will be small amount of waste material expected for each project road. This can be effectively management through mitigation measures such as timely removal of spoil material and disposal of the spoil wastes in designated disposal sites.
- ***Traffic disturbance impact:*** Renovation of existing rural road will certainly disturb the current traffic of local communities served by the road. As rural roads are important for connectivity/accessibility of rural communities, disturbance of traffic on these roads may have major social impacts. Such impacts can be mitigated with measures such as properly scheduling of construction scheme, provision of temporary accessibility, adoption of traffic safety warning signs and facilities etc.
- ***Community and occupational health and safety:*** Occupational health and safety of workers could be a potential issue for rural road construction. Incoming labors may also pose potential impacts on community health and safety (more discussed in social section). These adverse impacts will require adequate public consultation, proper labor training, enforcement of relevant health and safety regulations and good labor behavior management practice.
- ***Implications for physical cultural resources:*** The program is designed to exclude any rural road that runs through environmentally and socially sensitive areas/sites, including physical cultural resources. Initial screening and field visits did not identify any issue in this regards. Direct encroachment or damage of existing physical cultural resources is not expected under the roads of this program. However, the possibility of “chance-finds” cannot be ruled out. Potential adverse effects on physical cultural property will be accounted for and adequate chance-find measures will be taken.
- ***Road safety during operation:*** Improved rural roads may induce the increase of private cars in rural communities and increase speed on the road, therefore, road safety issue is a major concern during the operational stage. In this regards, road safety is designed as an integral part of the program activities. The program will have a focus on road safety for all the rural roads under the program through design, infrastructure construction, improvement of

management practice and institutional capacity building, as well as monitoring and evaluation process.

In summary, the proposed PforR activities will unlikely pose significant environmental impacts. The typical impacts are mostly related to construction activities which are likely to be temporary in nature, site-specific, and can be effectively mitigated with known measures and sound construction management practice.

3.3 Potential Social Benefits and Risks

3.3.1 Social Benefits

The key social benefits for the proposed Program will improve connectivity for many rural communities in 10 counties in Anhui Province. In spite of serious efforts made in poverty alleviation, by the end of 2015, there were still 3.09 million poverty population in Anhui, accounting 5.72% of total population. Most these poverties are located in northern and western mountainous areas with 20 national poverty counties and 11 provincial poverty counties. One common character of these poverty counties is relatively poor rural road condition. Among 10 project counties, average rural road density is only 123 km per 100 square kilometers of land area, ranging from only 81 km and 88 km in Yuexi and Shouxian Counties to 303 km in Hanshan County. More importantly, in the project counties, the share of low class or no class roads, roads without pavement, narrow roads, and roads without network connection is very high. For example, in Shouxian and Linqun Counties, over 85% of rural roads are Class IV or under. In Funan County about 46% of rural roads have no proper pavement. Although almost 100% of administrative villages have road access, large portion of natural villages are not connected with paved roads. The implementation of proposed Program by directly financing selected projects under Smooth Traffic, Road Safety and Safe Bridge and Rural Road Maintenance Components will significantly improve such conditions in project counties and improve access for large number of villages and population, particularly those poverty villages and poverty population, which will contribute the efforts of eliminating poverty in Anhui by 2020.

According to the geographic distribution of the rural roads, particularly those under smooth traffic, road safety, unsafe bridge and rural maintenance components, a total of 1661 rural villages will be benefitted with improved access, among which about one third are poverty villages. A total of 2.04 million rural population will directly benefit from such improvement, including about 14% or 285,000 poor people, living below the national poverty line. Table 2 shows the populations and communities to benefit from the PforR roads. In addition, rural road improvement projects in 10 counties could also generate temporary employment for 120,000 persons for one year, which will significantly increase income for local communities. Overall, implementation of the PforR will be helpful for enhancement of local peoples' lives and contribute to poverty reduction in Anhui Province

Table 2. Direct Beneficiary Communities and Populations Related to the Project Roads

Road Types Beneficiaries	Smooth Traffic (2198 km)	Safe Roads (1786 km)	Unsafe Bridges	Rural Road Maintenance (935 km)	Total
Communities (villages):	821	462	195	183	1,661

Of which, poverty villages	267	101	63	71	511
Populations (persons):	857,395	737,465	258,542	187,258	2,040,661
Of which Poverty Population	131,447	58,791	46,756	47,922	284,916

3.3.2 Adverse Impacts and Social Risks

In spite of significant social benefits, during the program implementation some potential negative social effects might occur, which include issues related to: (i) citizen engagement in selecting rural roads to be included in the Program; (ii) land acquisition and occupation in upgrading selected rural roads; (iii) ethnic minorities; and (iv) influx of labors.

Citizen engagement in selecting roads for improvement: One potential concern is whether in compiling the list of subprojects to be financed by the Program, whether those most needed rural roads connecting poverty villages could be selected and prioritized for improvement. During the consultations, it is understood that all villages and townships were actively involved in developing the list of rural roads for improvement, which was disclosed publicly after being approved by the provincial government. In other words, there was sufficient public participation and awareness in the list of subprojects to be implemented, which is important element of poverty alleviation efforts in relevant county and townships.

Land acquisition and resettlement: For most rural road improvement, construction will be carried out within existing right of way with no new land acquisition. Only in some sections, small scale land acquisition might be required due to road widening or alignment design. Based on past experience and review of selected similar projects, potential permanent land acquisition would be limited, ranging from 10-20 mu for improvement of township village road (Class IV) to over 100 mu for improvement of county road (Class III). For land requirement for upgrading county and township roads, an established land acquisition procedure has been followed to ensure that proper compensation will be paid and impacts on livelihood will be restored for affected people. As a general local practice, when development activities resulted in reduction of livelihood, including land that has been taken planted with crops, vegetables, or any products that bring income, compensation following provincial government decree has been made to the affected households. For land requirement involved in village road improvement, required land areas would be provided voluntarily by the affected villages since village roads do not involve change of land ownership. The concerned village committees often consult with all village members before deciding means of donation and compensation. However, the process and measures taken to compensate affected families are generally not documented. The transparency and documentation of village level consultation and compensation should be improved.

(c) **Ethnic minorities:** Due to extremely low proportion of ethnic minorities in Anhui Province according for only 0.66% of total population, and most of them are Hui nationalities, it is unlikely the Program will have significant impacts on ethnic minority communities. In the process of planning rural road improvement program, under the guidance of local minority and religious bureau, minority communities are often given priority to participate in order to ensure that they will receive same project benefits. They will be closely consulted for such development. Past experience indicated most communities will strongly support such development since they will bring easy access to local communities. For the limited land acquisition impact, same compensation payments will be made to the affected minority

communities. In case of village road improvement where small scale land donation is required, similar consultations will be carried out within minority villages before agreements is reached on how to provide compensation or rehabilitation to the affected village members.

Influx of labor: Assessment and consultations with local communities and construction companies showed that roads upgrading and rehabilitation has been done predominantly by locally hired labors. Only small number of technical staff will be brought into local communities. These staff are generally well educated and experienced in working in rural environment. Local public security bureaus request all nonlocal residents complete formal registration and receive proper training on local customs and tradition. The risk associated with influx of labor is low.

Thus, the potential social impacts and risks associated with rural road improvement projects are considered moderate, and suitable to activities to be supported by the Program according to the Bank's PforR Directive and Policy.

CHAPTER IV: ENVIRONMENTAL MANAGEMENT SYSTEM

4.1 Legal Framework Applicable to the Program

Since the promulgation of its first *Environmental Protection Law* in 1979, China has gradually established a comprehensive environmental management legal framework, becoming one of the region's most dynamic environmental law frameworks. Roughly, this framework includes more than 80 laws and statutes, 120 regulations and over 1000 standards and technical guidelines at national level primarily addressing pollution control, natural resource conservation and management of the environment. The occupational health and safety is addressed in China through a comprehensive set of laws, regulation, standards and guidelines, which is similar to or even more complex than environmental protection and pollution control system. There are also a large number of regulations and implementation plans at local levels.

In general, this legal framework can be roughly classified into three categories: (1) laws and regulations issued by National People's Congress and the State Council; (2) administrative regulations, standards and technical guidelines issued by various ministries; (3) regulations, polices and standards issued by local people's congress and local government. The system puts emphasis on a "preventive approach" and comprehensive pollution control.

This PforR supports infrastructure construction projects of rehabilitation and upgrading of existing rural roads, therefore, the environmental management framework for construction project applies, which mainly includes environmental impact assessment system, work safety and health management system. The key laws, regulations and technical guidelines related to rural road rehabilitation and upgrading under the Program are as follows:

(1) Environmental Impact Assessment for Construction Projects

Environmental Protection Law (NPC, amended in 2014)

This law (lately amended in April 2014) is known as the "most stringent" environmental law ever in China. It lays out general principles for environmental protection and describes key instruments for environmental management.

It sets out the objective of "protecting and improving people's environment and the ecological environment, preventing and controlling pollution and other public hazards, safeguarding human health, promoting ecological civilization and facilitating economic and social sustainable development." It also explicitly sets out the principle of environmental protection in China as: "priority on protection and prevention, integrated management, public participation, and damage accountability."

It sets out the requirement of compilation of environmental impact assessment for development plans and construction projects with environmental impacts (Article 19). Development plans or construction projects without environmental impact assessment are not allowed to be implemented.

This statute divides environmental management functions between national and local environmental administrations with powers to enforce environmental legal requirements.

The EPL requires strict environmental protection in nationally key ecological function zones, ecologically-sensitive and fragile regions through eco-redline protection. It requires rational exploitation of natural resources, protection of biodiversity and eco-security.

The EPL includes stipulations on information disclosure and public participation (Chapter 5) and recognize the right of citizens, legal persons and other organizations to report and complain environmental pollution and ecological damage activities of polluters. It also requires project proponents to disclose project information and consult project-affected public for comments while preparing environmental impact assessment. It requires government agencies to fully disclose the environmental impact assessment documents after receiving the approval application from project proponents. If there is no public consultation information in the environmental impact assessment documents, the approving agency requires the project proponent to do so, otherwise, will not approve the project.

Environmental Impact Assessment Law (NPC, 2002):

The EIA Law is a specific law governing the environmental impact assessment for development plans and construction projects. In October 2002, the former EIA Regulation was upgraded to a new national EIA law, which entered into force in September 2003.

The EIA Law establishes mandatory environmental impact assessment requirements for construction projects and development plans. It requires assessment of potential environmental impacts, development of prevention and mitigation measures, and monitoring of implementation status. It requires objective, open, just and integrated assessment of impacts from plans and construction projects on various environmental factors and ecosystems, to serve an informed decision making.

It classifies projects as either A (significant environmental impacts, requiring a full-scale EIA Report), or B (limited adverse environmental impacts in scope and severity, requiring a simplified EIA report known as EIA Form), or C (likely to have negligible adverse environmental impacts, requiring filling an EIA registration form).

The EIA Law requires mandatory public consultation with public and experts during the preparation of environmental impact assessment. Project proponent must provide responses to the public opinions in the EIA documents.

The EIA Law also establishes a qualification licensing system for the environmental impact assessment service providers. Only licensed EIA service provider independent from the project/plan is qualified for EIA service provision.

It also requires environmental authority to monitor the project implementation and operation in accordance with the EIA findings and conclusions.

Together with the EIA Law, there are a full set of regulations, implementation procedures and technical guidelines that provide a comprehensive EIA system that addresses the full range of environmental issues related to construction projects and plans.

For the implementation of EIA system, the *Regulation on Environmental Management of Construction Projects* defines the EIA classification (Article 7), contents requirements (Article 8), as well as the levels of approval commensurate with the scale of potential impacts. It also establishes the requirement of qualification licensing system for entities practicing EIA.

In order to guide the determination of EIA categories, a *Categorized Directory for Environmental Management of Construction Projects* was issued by the Ministry of Environmental Protection (MEP). The latest version in 2017 provides detailed criteria for EIA category classification for 23 sectors (199 types of projects) with consideration of project type, scale, sensitivity of locations.

To support the technical quality of EIA, there is a set of 24 technical guidelines which articulate methodologies and technical details for assessment of various types of impacts and for key sectors of projects. This set of guidelines includes a General Guidelines and a number of guidelines for specific environmental elements (air, water, noise, ecology, risk assessment) and industrial sectors. The *EIA General Guidelines* provides general requirements for EIA preparation, which includes key points as follows:

- Early engagement in project preparation, focusing on alternatives (locations, alignments, processes or construction plans)
- Broad stakeholder consultation, including general public, experts and relevant government agencies
- Feasibility of resources use
- Address positive and negative, long term and short-term, direct and indirect/cumulative impacts
- Address social impacts including land acquisition and resettlement, public health, culture and aesthetics, cultural resources and infrastructure
- Risks assessment for projects with potential risks on health, social and ecological risks (invasive species)
- Whole process public participation and informed consultation
- Development of feasible mitigation measures with indicators and cost estimate
- Development of environmental management and monitoring plan, including institutional setup and staff responsibility, monitoring factors and frequencies etc.

As part of the EIA system, *the Interim Measures for Public Consultation in EIA (SEPA, 2006.)* provides further detailed requirements and procedures of public consultation and information disclosure. It requires the project proponent to carry out public consultation and disclose project EA information during EIA preparation stage. In summary, these include:

- Two rounds of information disclosure: (1) Project implementation unit shall issue public notice within 7 days of hiring EA institute, announcing the start of EIA preparation, project brief and key issues requiring public opinions; (2) Project implementation unit shall carry out second round of information disclosure before submission of EIA report for approval,

disclosing the key findings of EIA in terms of impacts and mitigation measures, as well as the ways to get simplified version of EIA report and provide feedbacks. The project implementation unit is obliged to disclose the simplified version of the EIA report in public places, or internet, or through other ways convenient to public.

- **Public consultation:** Project implementation unit or EA institute shall, after public announcement and disclosure of simplified EIA report, carry out public consultation through public survey, consultation with experts, public meetings, discussion workshop or hearings etc. to seek public opinions.

As per requirement of the *Interim Measures*, the MEP or local EPBs shall announce, (through their website or other ways convenient for public accessibility) the receipt of EIA documents for review, and disclose the reports as well as the decision results after review.

Water Conservation and Erosion Control Law (NPC, 2010):

This law is to prevent water pollution and soil erosion from construction projects that may disturb land surface. All construction projects that may cause significant soil erosion are required to prepare a water conservation and soil erosion control plan (as part of overall EIA package), a prerequisite for approval of the project. The plan is approved by relevant water resources authority before the full EIA package is submitted to environmental authority for approval.

Wildlife Protection Law (NPC, 1988):

The State protects the wildlife and their natural habitats. Illegal poaching and damaging of natural habitat by any unit or person is strictly forbidden. The State provides special protection to rare and endangered wildlife. Government establishes nature reserves on land and water area which are the habitats of the national and local protected wildlife. For construction projects that may have negative impacts on nationally or locally protected wildlife habitats, the project proponent must submit environmental impact assessment which shall obtain approval from relevant wildlife protection authorities.

Forestry Law (NPC, 1998):

Construction projects should avoid or minimize the occupation of forest land. If unavoidable, approval from forestry authority of county (or higher) government must be obtained to go through land acquisition procedures, meanwhile, the project must pay forest restoration fee as defined by State Council. The forest restoration fee is specially used for forest re-plantation, centrally organized by relevant forestry authorities. The area of forest restoration can't be smaller than the area lost by the land acquisition. Clearing forest land for agriculture land development and stone/soil borrowing is prohibited.

Regulations on Nature Reserves (SC, 1994):

Nature reserves shall be established for: (1) typical natural geographical area, representative natural ecological system area, or damaged natural ecosystem but restorable through protection; (2) natural concentrated habitats for rare and endangered wild plants and animals; (3) special

valuable sea waters, costal area, islands, wetlands, inland waters, forest, grassland and desert; (4) natural heritage sites with significant scientific and cultural value; and (5) other natural areas designated by central/provincial and city governments. The nature reserve is typically classified into three zones: the core zone prohibited from any activities; the buffer area only limited to scientific observations; the experimental area prohibited from any production activities. Timber harvesting, grazing, hunting, herb medicine collection, agricultural land development, mining, stone and sand borrowing are prohibited in nature reserves.

Cultural Property Protection Law (NPC, 2002):

For various levels of protected cultural relics, governments at various levels define necessary scope of protection. A buffering construction-control zone can be defined outside the scope of protection. No other construction projects are allowed within the scope of protection. Necessary construction works within the scope must be approved by the corresponding level of government and the cultural relics authority at one higher level. Pollution facilities and activities that may affect the safety and environment of the protected relics are forbidden within the scope of protection and outer construction-control zone.

Alternatives for construction projects shall be explored to avoid immovable cultural relics to the extent possible. In case of non-avoidable, in-situ protection shall be pursued to the extent possible, and protection plan must be approved by the relevant cultural relics authority. Ex-situ protection or dismantle must be approved by relevant level of governments. All necessary protection expenses shall be included in the budget of the construction project.

For large scale civil works, construction units shall report cultural relics authorities which will organize archeological survey prior to construction. Expenses for archeological survey, exploration and excavation must be included in the construction budget.

Chance-find procedures: during construction projects or agricultural activities, any one or unit uncovers cultural relics shall stop construction and protect the site, and immediately report to local cultural relics authorities for investigation. In case of important discoveries, the local cultural relics authority must report to authorities at higher levels.

Flood Control Law (NPC, 1997):

It requires that all projects located in areas prone to flood are required to prepare a flood control assessment by licensed institute. The report is to be approved by relevant water resources authorities, which is a prerequisite for approval of feasibility study.

Regulation on Geological Hazard Prevention (SC, 2003):

It requires that all projects located in areas prone to geological hazards are required to prepare a geological hazard assessment report by licensed institute. The report is to be approved by relevant land resource authorities, which is a prerequisite for approval of feasibility study.

Relevant Local Laws and Regulations

Besides the overall national environmental legal framework, a number of provincial environmental protection laws and regulations are developed in Anhui, which enhances and details the implementation of national framework in the province. These mainly include:

- *Anhui Environmental Protection Regulation (Anhui People's Congress, 2010.8.23)*
- *Anhui Air Pollution Control Regulation (Anhui People's Congress, 2015.1.31)*
- *Categorized Directory for Environmental Management of Construction Projects in Anhui*
- *Implementation Method of Environmental Supervision for Construction Projects in Anhui*
- *Notice on Strengthening EIA Management for Construction Projects in Anhui*
- *Notice on Promoting Green Highway Construction in Anhui (ADT)*
- *Anhui Provincial Regulation on Construction Dust Control*
- *Anhui Provincial Rural Road Regulation*
- *Completion Acceptance of Rural Roads in Anhui*
- *etc.*

(2) Occupational Health and Safety

In China, occupational health and safety is under a separate set of management system, which also includes a great number of laws and regulations, supported by numerous management rules, implementation procedures, technical guidelines and standards, which form a comprehensive occupational health and safety management system. The main regulator on work safety is the State Administration of Work Safety (SAWS), and its subordinate Work Safety Bureaus (WSB) at local levels. While SAWS and its local level authorities are responsible overall supervision of work safety, for transport sector, the transport authorities (Ministry of Transportation and its transport bureaus at provincial, municipal and county levels) are responsible for direct supervision of work safety of all transport projects.

The key legal framework and implementation system are summarized as follows:

Labor Law (NPC, 1994):

This law mandates health and safety requirements in work contracts. It requires that the employer establish labor health and safety system, comply with applicable national standards and guidelines, provide training for employees on occupational health and safety, and prevent accidents and reduce the occupational damages. It also requires the employer to provide necessary personal protection equipment, as well as working environment in compliance with the national requirements, and provide periodic medical examination for the employees doing the jobs with potential occupational health and safety risks.

Labor Contract Law (NPC, 2007):

It requires the work protection, work condition and occupational hazard protection provisions in labor contract. It is enforced by human resources and social security departments which also handle grievance arbitration.

Work Safety Law (NPC, 2002):

This law is the umbrella law for work safety. It requires production operation entities to comply with relevant laws and regulations, establish safety operation rules and management system, improve safety conditions and ensure safe operation of production. It specifies safety responsibilities of operation entities in terms of establishment of safety operation rules and specifications, setting of organization system with clear responsibilities, staff qualification and training, “Three Simultaneousness” of safety facilities¹¹, safety assessment, safety design and construction, safety signage, emergency response plan, provision of PPEs, etc. The Law clarifies the responsibility of safety supervision by relevant work safety authorities at various levels.

Regulation on Safety Management in Construction Projects (SC, 2003)

This regulation is the key law governing the safety of construction projects, which sets out the overall framework and procedures of safety management and supervision for any new construction, expansion and renovation projects as well as demolition projects in China. It specifies the responsibility of all involved parties including project proponent, contractor, supervision consultant and relevant supervision authorities. It also lists mandatory requirements of safety design, review, implementation and supervision throughout the whole process of project construction. Specific requirements for safety management practice by contractors are also stipulated by this regulation, covering organization setup and staffing, implementation rule systems, construction plan, specifications for various key job positions, site safety management, health and hygiene requirements on meals/drinking water/accommodation for worker camp, provision of safety and personal protection equipment to workers, safety training and certification requirements etc. It also specifies the overall supervision responsibility of construction management departments on health and safety and direct supervision responsibility of transport department for transport sector projects.

Anhui Provincial Regulation on Work Safety (2007)

This regulation is developed by Anhui Province under the national Work Safety Law. It specifies the guiding principles for work safety management, i.e. safety first, focus on prevention and comprehensive management. The regulation clarifies the main responsibilities of work units/enterprises for safety management, and government’s role in safety supervision.

The regulation requires work units to establish work safety accountability system, develop safety rules and operational specifications, establish management structure and assign safety management staff. Work safety management staff must receive safety education and training. Workers for special jobs positions must receive special safety training and obtain special safety operation certificate for their job positions. Personal protection equipment must be provided in compliance with relevant national or sectoral standards. Construction unit must obtain safety permit prior to commencement of business and operation.

¹¹ Safety facilities must be designed, constructed and put into operation simultaneously with the main project.

The regulation clarifies the role of county (and above) government as main supervisor for work safety, with county (and above) WSBs as the main supervising body. Sector departments are responsible for the direct supervision over the safety performance in respective sectors, e.g. transport bureaus are responsible for safety supervision in transport sector projects.

Regulation on Safety Management for Construction Project in Anhui Province (2016)

Under the State Council's *Regulation on Safety Management in Construction Projects*, this provincial regulation further specifies the detailed implementation requirements in Anhui Province. It echoes the general requirements as described in the national regulation, and specifies more details on the implementation requirements for contractor and supervision company. It explicitly requires that safety be included in the construction supervision plan, and provides a detailed supervision items, including leaders, management staff, qualification of operational workers, management system, environmental protection measures, safety measures, safety qualification for sub-contractors, equipment maintenance and safety training etc.

In addition, Anhui Province has developed a number of work safety-related rules and management documents to support the work safety system implementation and supervision. These mainly include:

- Implementation of Six Mechanisms to Strengthen Work Safety Risk Control
- Decision on Strengthening Work Safety Supervision Enforcement
- Decision on Strengthening Work Safety in Transport Sector
- Implementation of Work Safety Supervision Enforcement
- Work Safety Accidents Reporting and Investigation Methods
- Work Safety Risk Screening and Treatment Methods
- Quality Management Method for Construction Projects
- etc.

4.2 Implementation of Environmental Management system

This PforR program includes rehabilitation and upgrading of existing rural roads, which are basically repair and restoration existing roads to their original functions or upgrading of existing non-paved gravel roads to paved rural roads following national/local standards. The detailed application of involved environmental management systems are described as below.

4.2.1 Environmental Impact Assessment of Projects

EIA Screening

As mentioned above, the EIA system in China adopts a classification system as stipulated in the *Categorized Directory for Environmental Management of Construction Projects*. According to the 2017 version of this directory, the EIA classifications for road projects are as follows:

Table 3 EIA Classifications for Road Construction Projects

Project Type	Category A (Full EIA Report)	Category B (EIA Form)	Category C (Registration Form)
Road	New construction of road with Class III or higher level; New construction of tunnel with length over 1km in environmental sensitive areas; New construction of bridges with length over 1km and involves environmental sensitive areas;	Others (except ancillary facilities, maintenance, new construction of Class IV road).	Ancillary facilities, maintenance, new construction of Class IV road.

According to this classification, all the projects under the Program fall into B or C categories. Although this categorization system in China is not strictly the same as that of the World Bank, the definition generally shares the similar principle, i.e. the projects under the Program will not cause significant environmental impacts.

EIA Preparation

This Program is a newly established rural road improvement program for ten counties in Anhui. As a rural road projects package, the EIA review arrangement under the local system is that, each county will prepare one EIA report to cover all the roads within its jurisdiction, instead of multiple EIA documents for each individual road or, in some simple cases, exemption from EIA. According to local administrative arrangement, the EIA review and approval authority rests with the county level EPB.

In China, the EIA system established by MEP applies universally to all provinces. The MEP strictly regulates EIA services as per the EIA Law. Only institutes that pass MEP accreditation are granted certification for performing EIA services. The *Measures on the Management of Qualification Certificates for Construction Project Environmental Impact Assessment (EIA)* issued by MEP provide detailed requirements of qualifications and measures of administration for the EIA institutes. MEP conducts periodic review of the qualification and performance of all certified institutes and may suspend, downgrade or cancel the certificates accordingly. MEP also regulates individuals performing EIA through an EIA engineer registration system. All the persons providing EIA services must pass a professional exam to be eligible to register as an EIA engineer.

For this Program, Anhui Department of Transport (ADT) will hire a licensed EIA consultant through bidding process which will be responsible for EIA documents preparation. Each county will have one EIA report (EIA Form) for all rural roads under its jurisdiction which will be subject to review and approved by the EPB in that county. The EIA preparation will be based on sufficient details of engineering design for all the roads covered by the EIA, following the requirements of national technical guidelines.

It is noted that ADT is planning to develop a standard Environmental Code of Practices (ECOP) for rural roads rehabilitation and upgrading as part of this EIA consulting work, which will be adopted for future ADT projects for the whole province, beyond the PforR project boundary.

EIA Review and Approval

According to the administrative arrangement in Anhui Province for the rural roads project activities under this PforR, the EIAs reports are under the review and approval authority of county EPBs.

Upon receipt of EIA documents, the county EPBs will announce the receipt and commencement of review process, and disclose the full reports to public for soliciting public's comments and feedbacks (15 days). The EIA review process is conducted by an independent expert panel system organized by county EPB. These experts are selected from a central EIA expert pool established by the municipality that the county is located. Normally, at least 3 experts are selected from the pool for the review. Based on satisfactory results from the expert panel review, the county EPBs will issue the final approval documents.

County EPBs will disclose the draft EIA review opinions prior to final approval, as well as the final approval decision after the approval in their websites.

Acceptance Examination

After the approval of EIA documents, the project implementation units are responsible for ensuring the implementation of measures defined in the EIAs. During construction stage, the mitigation measures are implemented by contractors, supervised by the project implementation units and supervision engineers.

Upon project completion, an environmental acceptance examination is to be conducted by a third party verifier entrusted by the project implementation units, and reported to the county EPB which approved the EIA for records.

During construction, projects may also receive random on-site supervision from county EPBs (through their supervision and enforcement teams, normally known as Environmental Enforcement Squads).

Contractor Management

Contractors are obliged by contracts to implement environmental protection measures during construction. The *Standard Bidding Document for Construction Projects* (issued by NDRC, MOF, MOC, MOT, MOR etc. in 2007) requires the inclusion of environmental protection chapter in the technical specifications, in which the project proponent incorporates requirements and mitigation measures from the EIA documents. In the standard construction contracts regulated by *Construction Project Contracts (Standard Sample) (GF-2013-0201)*, a dedicated chapter of Work Safety and Environmental Protection is included in the General Provisions section, which

specifies requirements for work safety, worker vocational health, site management, and environmental protection mitigation measures.

After the construction contract is signed, the contractor is required to develop its site-specific Construction Organization Plan (COP) as required by *Code for Construction Organization Plan of Building Engineering (GB/T 50502-2009)*. The COP is the detailed construction plan of the contractor, which must include a number of detailed management plans, including environmental management plan and work safety management plan. There are a large number of construction codes related to road construction, which embed environmental protection requirements. For bridge construction, it is confirmed that all bridges under the Program are small scale bare concrete bridges, with no need of antirust or color paints as for steel bridge. Safety warning markers may be painted on ends of bridge/or inside surface of barrier wall, for which the *Code for Road Marker Paints (JTT280-2004)* ensures that no toxic paint is used. In addition, the *Road and Bridge Construction Code (JTG T F50-2011)* provide explicit requirements for construction safety and environmental protection, including measures preventing pollution of water from solid waste, oil, paint and other chemicals.

According to the national regulations (e.g. *Specifications for Road Project Supervision (JTGG10-2006)*), supervision consultant is mandated to supervise quality, safety, environmental protection aspects of the contractors. The COP is reviewed by the project proponent and the supervision consultant (Supervision Engineer prior to the commencement of construction. During project implementation, the implementation of environmental protection measures of the contractor is supervised by the supervision consultant and the project proponent according to the COP and contract.

Other Related Safeguards Documents

Besides EIA as main safeguards document prepared, there could be other related safeguards documents prepared for a rural road project depending upon its scale and geological location. These include:

- **Water and soil conservation plan:** According to *Regulation on Preparation and Approval of Water and Soil Conservation Plan* (Ministry of Water Resources, 1995), a project is required to develop water and soil conservation plan if it causes potential water and soil loss (i.e. a Water and Soil Conservation Plan Report for a project that requires land acquisition of more than 1ha or soil/stone excavation over 10,000m³, or a Water and Soil Conservation Plan Form for projects with less land acquisition and excavation amount). This plan is to be approved by relevant water resource bureau, and such an approval is the prerequisite for EIA and later feasibility approval. As the normal practice, such a plan is incorporated into the EIA documents for EPB's approval. Similar to EA management system, the preparation of water and soil conservation plan is regulated by Water Resource Ministry with a similar qualification and certification system. Water resource bureau is also involved in the final acceptance inspection upon the project completion.
- **Flood control assessment:** When a project is located in areas prone to flood according to local flood control plan, a flood control assessment by licensed institute. The report is to be approved by relevant water resources authorities, which is a prerequisite for approval of feasibility study.

- *Geo-hazard assessment*: When a project is located in areas prone to geological hazards, geo-hazard assessment shall be conducted as a mandatory part of the feasibility study. The institutions conducting such assessment are regulated under a qualification licensing system managed by Ministry of Land Resources and provincial Land Resource Bureaus.

4.2.2 Health and Safety Management

Under the national requirements of *Regulation on Safety Management in Construction Projects* and provincial *Regulation on Quality and Safety Management for Transport Project in Anhui Province*, health and safety are considered as a primary emphasis for construction projects, and implementation systems are put in place established to enforce the laws and regulations throughout the whole process of the construction project. The implementation of key health and safety requirements are as follows:

For Design Stage:

- Design institute incorporates safety operation and protection measures in the design document, and the project proponent ensures the cost of working environment and safety measures in the project budget estimate;
- Project proponent conducts safety risks assessment through expert review during feasibility review and construction plan review prior to commencement of construction;
- Project proponent provides safety measures documents to construction management authority when applying for a construction permit, and once approved, submits the safety measures documents to local work safety authorities (where the project is located) for registration records;
- Project proponent ensures that the incorporation of requirements of environmental safeguards documents into bidding documents/contracts, and supervises the implementation during the construction stage;

For Construction Stage:

- The main leader of the contractor is taking the overall responsibility for its work safety. Contractor must establish work safety management system and training system, develop work safety rules and operational procedures, ensure financial sources for safety facilities, conduct periodic inspection and keep work safety log book;
- Contractor shall establish dedicated work safety unit, with dedicated staff who shall also have safety certification license;
- Workers must receive safety training before engaging a new job or entering a new construction site;
- Special job position worker (crane operator, installation/dismantling, blasting, lift signaling, high elevation works etc.) must receive special safety training and obtain special operation certification before starting on the positions;
- Technical staff of the contractors must explain the details of safety measures to the construction teams/workers prior to the construction, with signatures of both sides for confirmation records;
- Contractors shall install clear safety signage at construction site entrance, crane lifts, temporary power source, scaffold, entrance/exit, stairs, elevator shafts, hole openings, bridge

openings, tunnel openings, foundation pits, explosives and hazardous gas and liquid storage areas etc.;

- Contractors shall arrange separate office area, living area and construction area, and ensure food, drinking water and resting place in compliance with hygiene standards;
- Contractors shall provide personal protection equipment and provide written notice of operation procedures and risks of violation;
- Main leaders, project managers and safety staff of contractors must be certified for work health and safety by construction management authority;
- Contractors shall organize at least once work safety training for management staff and operational workers, and keep the training into archives of each individual staff. Staff failed the safety test shall not be allowed to take relevant work positions;
- Project supervision consultant reviews the safety measures in the construction organization design from contractor, and supervise the work safety measures of the contractor;

For Operation Stage:

- County/township transport bureaus are responsible for maintenance of road safety facilities.

During project implementation of the Program, CTBs and township governments, contractors, construction supervision consultants are all obliged to exercise their respective responsibilities according to national and provincial regulations:

- CTBs will ensure that safety design is integral part of the project design documents, and incorporate into bidding documents and construction contracts;
- Contractors will conduct all the health and safe measures following national regulations, guidelines and design documents;
- Supervision consultants carry out on-site supervision as per contractual requirements;
- CTBs conduct periodic site inspection through the Quality & Safety Supervision Station under each CTB;
- Municipal TB and ADT conduct random sampling inspection to the sites following provincial regulations (percentage of sampling inspection by ADT is no-less than 10%, 5% and 2% for county, township and village level roads; and percentage of sampling inspection by municipal TB is no-less than 30%, 20% and 10% for county, township and village level roads).
- For village level roads, as a common practice in Anhui, all township governments also establish a Village Supervision Council to carry out on-site supervision. The members of VSC are “five seniors” villagers from the project villages, i.e. senior teachers, senior retired government officials, senior retired soldiers, senior communist party members and senior working models.

4.3 Environmental Management Agencies and Capacity

Based on the screening of environmental and social effects of the Program activities and the analysis of applicable management systems, as well as on the consultation with ADT and relevant government departments in ten project counties in Anhui, main government departments involved in the environmental safeguards management for this Program are the ADT, and the EPBs and Transport Bureaus in the ten project counties.

4.3.1 EIA Review and Approval Agencies

According to the classification of EIA and administrative authority arrangement, there will be ten EIA reports, one report for each project county respectively to cover all the projects included in the Program. These EIA reports are subject to review and approval of each county's EPB. For the technical review of the EIA reports, all the county EPBs use the same mechanism, i.e. relying on the expert panel with experts selected from municipal EPB's expert pool. Typically, the review panel will have at least three members, with relevant expertise background.

Under the unified government system setup in China, the ten county EPBs have generally the same organizational structure in terms of internal divisions and subordinate units. Based on field visits and consultation with four project counties, it is confirmed that all the county EPBs have the similar organization structure, i.e. including internal divisions such as General Office, Policy and Regulations, Environmental Impact Assessment, Pollution Control, Grievance Redress Office, as well as subordinate units such as Environmental Enforcement Unit, Environmental Monitoring Station, and Environmental Information Center etc.

Based on this assessment, the following units are closely related to the program's EIA review and implementation supervision:

- EIA Division of county EPB: It enforces environmental laws, regulations, policies and technical standards related to construction projects; develops county environmental plans and organize the implementation; reviews environmental contents of other plans; review EIAs for various types of construction projects and conducts completion acceptance review; supervise the environmental management of construction projects; manages the qualification system of EIA consultants; review of cleaner project and certification of environmental standards etc. The EIA Division of county EPB has typically 3-5 staff (one in Yuexi county).
- Environmental Enforcement Unit of county EPB: It enforces the compliance of national and local environmental laws, regulations, policies and standards; supervises the environmental compliance of individuals and units within the county jurisdiction; organizes and implements "Three Simultaneousness"¹² of construction projects; receives public complaints and reports on violation activities, and conducts investigation or transfer investigation to other parties according to the regulations; investigates pollution incidents; etc.

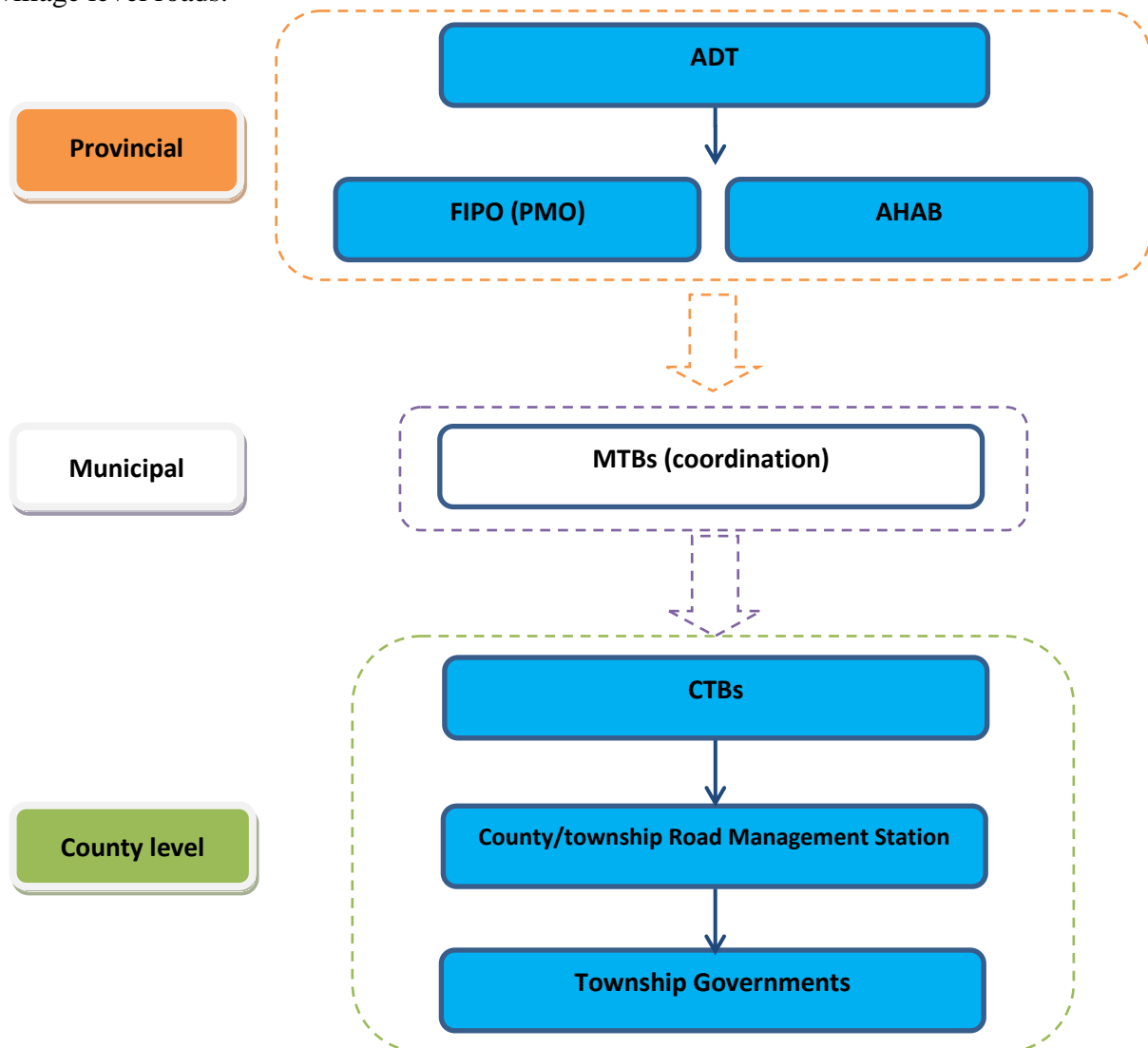
Once receiving the EIA reports, the EIA Division of the county EPB will publish notice through the website of county government, announcing the receipt of the EIA reports and disclose the full content of such documents. Meanwhile, it organizes expert panel to conduct the technical review of EIA documents. Normal 3-5 experts are randomly selected from an expert pool established in the relevant municipal EPB to conduct the meeting review or desk review. Once the EIA reports pass the technical review, the county EPB will announce its draft approval opinion through its website for public consultation, and latterly announce its final approval decision again. The disclosure period for public comments is 15 days for full EIA report. The total processing time for EIA approval is typically around one month from the date of EIA receipt and final approval, depending upon efficiency of organization of technical review.

¹² Environmental facilities and measures must be designed, constructed and operated at the same time with the main project.

Based on institutional review and consultation, it is concluded that ten project counties in Anhui have well-established institutional system for EIA documents review for construction projects. The EIA for rural roads construction projects as involved in this PforR are regulated by a well-established legal and regulatory framework and administrative procedures with qualified technical expertise for review and approval system.

4.3.2 Implementation Management

As a comprehensive program, AHAB is the implementation unit at the provincial level. CTBs at the ten counties are the implementation units at the project level, responsible for the rural roads projects implementation within the county jurisdiction; The PMO under the ADT's Foreign Investment Promotion Office (FIPO) AHAB is responsible for coordination and communication with the Bank. Municipal level transport bureaus (under which ten project counties are located) are responsible for implementation coordination among project counties. While, CTBs and township governments are responsible for actual project implementation of county/township and village level roads.



Program Leading Group

In order to guarantee the smooth implementation of the Program, a provincial level Program Leading Group (PLG) has been established in ADT, chaired by Vice Director of ADT and participated by leaders from AHAB, FIPO and ten CTBs. The PLG is responsible for overall coordination among ten project counties, and comprehensive program planning and implementation.

It is noted that PLGs have been established in all eight MTBs (covering all ten project counties), which is responsible for implementation organization and coordination. Each municipality also established a PLG Office under MTB. All the ten project counties also established its county-level PLG Office under its CTB.

Consultations with ADT and relevant government departments from project counties revealed that there is extremely strong enthusiasm and support to the Program and convincing commitment on the high quality of the project implementation.

FIPO of ADT

FIPO of ADT has been established for nearly twenty years, and will be responsible for overall coordination of the PforR implementation. It has 13 staff, with one dedicated staff for environmental and social safeguards coordination. FIPO has rich experiences of project management for WB and ADB projects. For over 20 years, it has continuously implemented 5 WB projects and 1 ADB project, and was awarded by ADB as Best Performance Project in 2014. FIPO staff are very familiar with WB's environmental and social safeguards policies and achieved good performance in project implementation, with good track records for the past several WB projects, especially the Anhui Second Highway Project which was highly praised Ministry of Transport for its outstanding environmental protection works and promoted as a model of excellence in highway construction in China.

AHAB of ADT

AHAB of ADT is responsible for overall road management in Anhui, including road network planning, design, budget approval; road transportation sectoral management; rural road planning, construction, maintenance and management, etc. It has a total staff of 138.

For the implementation of this Program, AHAB is the main implementation unit, responsible for development of the rural road program and implementation supervision. It provides guidance on rural roads construction and maintenance, and general sectoral management. It conducts supervision mainly through comprehensive inspection, special engineering quality inspection and other special inspections, of which: engineering quality inspection is conducted through engaging third party with a frequency of 1-2 times a year; comprehensive and other special inspections are conducted according to the actual project progress, with key focus on construction site management and progress.

As the sectoral authority, AHAB has well established institutional setup and operation mechanism. In the recent several WB projects, AHAB is the main implementation unit and has achieved good performance records in environmental safeguards implementation.

CTBs

CTBs are the transport management authority at county level, and have similar internal organization structure among ten project counties. In general, CTB has divisions of General Affairs Office, Staff Management, Comprehensive Planning, Finance, Transportation, and Construction Management etc. The main responsibility of CTB include: development of county roads planning and organization of implementation; construction, maintenance and management of roads in the county; supervision of construction quality etc.

CTB also has sub-ordinate institutions such as county/township road management station and transport project quality supervision station, which play important roles in the Program implementation.

- **County/township Road Management Bureau:** CRMB is a secondary sub-ordinate unit under CTB and is the lowest level rural road construction management authority of government. In the implementation this Program, CRMB is the project implementation unit for all counties¹³ and is responsible for construction management and supervision of county level and township level roads. Typically, CRMB has a division of environmental and safety, with 5-20 staff. It conducts supervision through routine inspection and comprehensive supervision, with routine inspection to construction site is basically conducted 1-3 times a week, and comprehensive supervision on a monthly basis. The inspection contents cover site safety, quality, site management, environmental protection, staff assignment etc. CRMB also provide supervision and guidance on the village level roads construction, which is under the direct responsibility of township government.
- **County Transport Construction Quality Supervision Station (QSS):** QSS is mandated to supervise the environment, quality and safety of rural roads projects on behalf of CTB. Currently, all counties have a QSS under its CTB, with 3-15 dedicated supervision staff. It conducts supervision through routine inspection, special supervision and comprehensive supervision (monthly). All QSS staff must have certification from higher level QSS (municipal and provincial), and county QSS is subject to annual performance evaluation from higher level QSS.

Based on field visits and consultations with several CTBs, it is noted that most CTB staff have rich rural road construction project experiences. However, most of these staff come from a transport sector background, and may not have adequate systematic knowledge on environmental and social safeguards. Therefore, a systematic training for environmental and social safeguards will be greatly helpful to strengthen the institutional capacity of the existing management system.

¹³ For Dingyuan county, the CRMB is called Rural Road Construction Investment Company . For Hanshan, the CRMB is called County Road Construction Command Office

Township Governments

Except Dingyuan, Linquan and Yuexi counties where CTBs will be responsible for the implementation of all road projects, CTBs in other counties will be responsible for county and township level roads, while the township governments are responsible for village-level roads within their jurisdictions. The main responsibilities of township government for village road under the Program include coordination with villages, facilitation of readiness of village road subgrade and utility lines relocation, selection of contractors and supervision consultants etc. A pool of qualified contractors and supervision consultants will be established by CTBs through bidding process, from which township governments can select for the implementation of village roads. While, the construction of village level roads are subject to supervision from CTBs, as well as MTBs and AHAB/ADT.

During the implementation of village roads, except the supervision and inspection from CTBs and construction supervision consultants, all the townships adopt the same approach of “Village Supervision Council” to carry out on-site supervision. The members of VSC are a group of senior villagers with respectful reputation, i.e. senior teachers, senior retired government officials, senior retired soldiers, senior communist party members and senior exemplary models. These senior people receive simple quality supervision training from CTBs, and carry out quality supervision with training certificate.

Through field visit and consultations with a few senior supervisors, it is noted that these villagers are extremely enthusiast in their job position and serious in daily supervision works, as they are the ultimate owners and beneficiaries of the project roads. However, it is also noted that these old people only received limited construction quality training (one or two days), and do not have systematic knowledge on environmental and social safeguards policies and practices. Therefore, comprehensive and systematic training on environmental and social safeguards will be necessary to further enhance the supervision effectiveness of this current system.

Project Supervision Consultant

As a standard arrangement for civil works contracts, project supervision consultant is engaged during construction to supervise the contractor’s works. According to the national regulations, project supervision consultant has the contractual obligation for supervision on environmental, health and safety performance of the contractor on behalf of the project implementation unit. During construction, the supervision consultant (Supervision Engineers) conducts on site supervision, and keeps supervision log on a daily basis. As a common arrangement, supervision consultant provides monthly reports to the project implementation unit.

The World Bank team reviewed a few sample monthly reports from supervision consultants for similar rural roads projects in Anhui, and found that environmental performance is inadequately addressed in these reports. Many reports even have no reporting on environmental performance. As a common issue for rural road projects, it is noted that project supervision consultant typically puts emphasis on project quality, work safety, progress and fund disbursement, while other environmental performance may receive less attention, especially for small scale projects such as low class rural roads construction.

Based on field visits to a number of similar rural roads projects under domestic funding, it is noted that these roads are generally well managed in terms of environmental safeguards. These roads are improvement of existing rural roads, and there is limited disturbance outside the right-of-way. For the completed roads, there is no obvious evidence of major environmental legacy issue. However, based on Bank's other rural road projects in China, certain issues (such as clean site management, timely and proper disposal of spoil material) are fairly common, which are sometimes overlooked by the construction supervision consultant. These issues can be timely identified and properly addressed through effective work from the on-site supervision consultants. Therefore, strengthened efforts and adequate attention from supervision consultants would certainly be important for good environmental management of rural road construction projects under the PforR.

Environmental Protection Bureau

During the project construction, the county EPB's Environmental Enforcement Unit has the authority to supervise the environmental compliance of the project. Based on consultation with relevant county EPBs, it is noted that the Environmental Enforcement Unit is mainly focusing on supervision on pollution emission from industrial enterprises, rural roads construction is not considered as a key priority. It may conduct field inspection on rural road projects when sensitive environmental areas (e.g. nature reserves and protection areas) are involved or public complaints are received. For rural roads projects, the main supervision responsibility for environmental and safety rests with the local transport bureau as the sectoral authority for transport projects.

As a standard organizational setup, each EPB has a Grievance Redress Office which receives environmental complaints from public. Online mailbox is also a standard setup for EPB's website to receive public complaints and reporting of any environmental issues. The working procedures of receiving public complaints include: registration - complaints filing – investigation - feedback to people filing the complaints – conclusion of case - archive filing. Whether or not eligible for compliant filing is to be immediately informed to the people face-to-face, or within 15 days if notice can not be made immediately.

Once a complaint is filed, it will be transferred to Environmental Enforcement Unit after the review of relevant EPB leaders. Normally, the Environmental Enforcement Unit is required to arrive at the reported site within 3 days. According to national regulation for environmental grievance redress, compliant cases must be concluded within 60 days from filing. Extra 30 days may be granted for complicated cases with EPB approval and notice to people filing the compliant.

In addition to above-mentioned environmental grievance redress system, there is also a nationwide environmental grievance system, i.e. a well-known environmental complaints hotline (12369), which provides direct access to local EPB grievance office for the public to provide environmental complaints.

Besides these environmental grievance redress systems, each county government has its own grievance channel (such as a major mailbox) through a website to receive public feedback,

including environmental complaints. When an environmental complaint is received, it will be transferred to county EPB for further processing.

Overall, there are established systems in place to manage and supervise the environmental management of rural road construction, with generally good performance in Anhui. However, there are certain inadequacies in the actual implementation, especially the effectiveness of environmental supervision from construction supervision consultants, and environmental awareness and environmental supervision capacity of project implementation units (CTBs, township governments and village council members). Further strengthening on these aspects will be necessary to enhance the current environmental management and supervision system.

4.4 Assessment of Environmental Management System against the World Bank Policy

The legal framework for environment management in China is comprehensive and is evolving toward international standards over the years. Based on this environmental management system review, it is concluded that the legal framework of laws, regulations, guidelines, policies and standards, as well as the implementation mechanism provide full coverage over the environment and health and safety aspects related to rural road projects under this Program. In general, the environmental management framework is consistent with the World Bank PforR Policy and Directive in terms of principle and key elements. The legal framework provides a reasonable basis for addressing environment, health and safety issues likely to arise in the proposed Program.

An assessment of environmental management systems relevant to the activities supported under the Program for each PforR policy and respective directives is presented below.

PforR Policy (a): Promote environmental and social sustainability in the Program design; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's environmental and social impacts.

The legal framework of environmental management aims to promote environmental and social sustainability as ultimate objectives through comprehensive laws, regulations, guidelines, and institutional arrangements. These are supported by political commitment at the highest level for developing an ecological civilization. It prioritizes prevention and defines a comprehensive assessment system to promote informed decision making. Overall, the legal framework of environmental management in China is fully consistent with the Bank PforR Policy in this regards.

PforR Key Directive: Operate within an adequate legal and regulatory framework to guide environmental and social impact assessments at the Program level.

China has developed an adequate legal framework for environmental and social impact assessment for construction projects. This framework includes comprehensive laws, regulations, technical guidelines, standards, institutional arrangements, and practice procedures that apply nationwide. Over the decades, it has gradually evolved into a comprehensive system that is consistent with the internationally accepted good practices. Based on assessment, it is concluded that there is an adequate legal and regulatory framework for the environmental and social impact

assessment for this program.

PforR Directive: Incorporate recognized elements of environmental and social assessment good practice, including: (i) early screening of potential impacts; (ii) consideration of strategic, technical, and site alternatives (including the “no action” alternative); (iii) explicit assessment of potential induced, cumulative, and transboundary impacts; (iv) identification of measures to mitigate adverse environmental or social impacts that cannot otherwise be avoided or minimized; and (v) clear articulation of institutional responsibilities and resources to support implementation of plans; and (vi) responsiveness and accountability through stakeholder consultation, timely dissemination of PforR information, and responsive grievance redress measures.

The Chinese EIA system has well-defined screening principles, technical manuals and guidelines to guide the environmental screening and classification of EIA categories early in the project preparation stage.

The EIA guidelines require the consideration of technical and site alternatives for construction projects. The EIA guidelines require assessment of potential, induced, cumulative, and transboundary impacts. The EIA system emphasizes preventive measures, such as avoiding environmentally and socially sensitive sites as much as possible from the outset. Based on assessment of potential impacts, measures are developed to minimize, mitigate and/or compensate the impacts encountered. These measures are required to be built into construction contracts and will be inspected and verified by environmental authority upon completion of the project construction.

The EIA system requires institutional arrangements with clear responsibilities and resources in the environmental management plan to support implementation.

The EIA system requires timely disclosure of project and EA information. Public consultation is required for projects that may have negative impacts on project-affected people, and responses to public comments must be included in the EIA report. Upon receipt of EA documents, local EPBs will conduct public consultation by disclosing the full EA documents and soliciting public feedbacks through their websites before approving the report. Environmental grievance redress system is in place, with established institutional arrangement within EPB as well as a unified environmental hotline which is well known nationwide, supplemented by mayor hotline and mailbox complaint channels at the county governments.

Overall, the EIA system applied to the activities supported under the Program is well aligned with the key elements of the Bank PforR Directive in terms of screening, alternative analysis, assessment of impacts, development of mitigation measures, requirements of institutional arrangements for implementation, and public consultation and grievance redress.

However, the assessment concludes that there is still room for further enhancement in terms of actual implementation. These include:

- The role of project supervision consultant under the current system needs to be fully utilized

in terms of environmental supervision, i.e. construction supervision consultant shall pay due attention to environmental performance supervision and fully reflect such results in the regular supervision reports to the project implementation unit;

- Comprehensive environmental management training is to be provided to the CTBs and township government staff, as well as the members of Village Supervision Councils so that environmental supervision can be adequately incorporated into the current construction management system.

PforR Policy (b): Avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program.

PforR Directive: Include appropriate measures for the early identification and screening of potentially important biodiversity and cultural resource areas; support and promote the protection, conservation, maintenance, and rehabilitation of natural habitats; avoid the significant conversion or degradation of critical natural habitats; or, if avoiding the significant conversion of natural habitats is not technically feasible, include measures to mitigate or offset the adverse impacts of the Program activities.

The EIA guidelines provide detailed guidance on identification and screening of sensitive environmental and cultural resources, including surveys of baseline environmental data. Key sensitive areas such as nature reserves, wetland parks, forest parks, and scenic areas are identified for detailed survey and special assessment. Cultural resources are screened through consultation/approval of the relevant authority and field investigation. Therefore, the Chinese EIA system has well established processes for early identification and screening of potentially important biodiversity and cultural resource areas that are consistent with this key element.

The Chinese environmental protection system emphasizes the protection, maintenance and rehabilitation of natural habitats through a comprehensive set of laws, regulations, guidelines and standards. Avoiding such sensitive areas is the top priority of the EIA. Special assessment is mandatory and necessary mitigation or offset measures are to be included in the environmental management plan when avoiding these areas is not possible. The environmental protection system in China is well aligned with this key planning element.

For this Program, only rehabilitation and upgrading of existing rural roads in non-sensitive environmental and social context are included in the program design. The program does not include new construction of rural roads, and any rehabilitation and upgrading of existing rural roads that fall into the boundary of environmental sensitive areas (e.g. nature reserve, protected areas, reservoirs, important nature habitats, physical cultural resources etc.). Therefore, little impact is envisaged in this aspect.

PforR Directive: Take into account potential adverse effects on physical cultural property and provide adequate measures to avoid, minimize, or mitigate such effects.

The *Cultural Property Protection Law* provides adequate legal framework and procedures for protecting cultural property during the EA process. If any physical cultural resource is affected,

impacts must be assessed and consultation and approval must be secured from the cultural property authority. Protection measures must be included in the environmental management plan. Chance-find procedures are also explicitly established in the legal system for cultural property protection. These are fully in line with the requirement of this key planning element.

PforR Policy (c): Protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.

PforR Directive: Promote adequate community, individual, and worker safety through the safe design, construction, operation, and maintenance of physical infrastructure; or, in carrying out activities that may be dependent on such infrastructure, incorporate safety measures, inspections, or remedial works as appropriate.

China has established a comprehensive management and supervision system for work safety as discussed in previous sections. This system ensures the safety issues are adequately addressed in the project design and construction supervision. The ultimate responsibility of health and safety rests with contractors, and closely supervised by supervision consultants, as well as ADT and CTBs as sectoral responsible authority and WSBs as overall regulator. The system is consistent with the Bank PforR Directive.

PforR Directive: Promote the use of recognized good practice in the production, management, storage, transport, and disposal of hazardous materials generated under the Program; promote the use of integrated pest management practices to manage or reduce pests or diseases vectors; and provide training for workers involved in the production, procurement, storage, transport, use, and disposal of hazardous chemicals in accordance with the relevant international guidelines and conventions.

The activities to be supported under the Program do not involve any production, storage, use, transport or disposal of dangerous chemicals, including pesticides. Therefore, no further assessment is conducted.

PforR Directive: Include adequate measures to avoid, minimize, or mitigate community, individual, and worker risks when the Program activities are located in areas prone to natural hazards such as floods, hurricanes, earthquakes, or other severe weather or climate event.

The EIA and work safety systems incorporate environmental and work-related risk assessment measures into the project design and implementation. As discussed in previous sections, China has also established other risk assessment systems for projects that are prone to flood and natural hazards to avoid, minimize or mitigate community, individual, and worker risks. These systems are consistent with the Bank PforR Directive.

CHAPTER V: SOCIAL MANAGEMENT SYSTEM AND PERFORMANCE ASSESSMENT

5.1 Legal Framework Addressing Issues of Social Core Principles

The design and construction of rural transport projects should be consistent with the core principles guiding PforR Program. There are laws and regulations at the national level, and related implementation regulations and measures at the provincial and municipal levels. Many county governments also issue rules and regulations to guide implementation of national and provincial laws. All development projects should be prepared and implemented under the overall legal framework.

The proposed PforR by improving thousands kilometers of rural roads will directly benefit millions of rural population, including many poverty villages and poverty people. Since most of upgrading activities will be concentrated on rehabilitation and upgrading of existing rural roads with no new land acquisition, the potential social impact would be limited. For those social impacts, it is important to ensure there are good social management systems consistent with Bank's core principles guiding PforR preparation and implementation. According to the projects' potential social impacts, this section will present the relevant contents of the legal framework in three aspects, namely, (a) land acquisition and resettlement; (b) interests of ethnic minority communities and vulnerable groups; and (c) management of influx labor in project areas.

A. Land Use and Land Acquisition

On managing potential social impacts caused by land acquisition and resettlement, there are a range of laws and regulations adopted in China. Among them, the *Land Administration Law* and *State Council Decision on Deepening the Reform on Strict Management on Land* are two key legal basis for defining basic aspects of land acquisition system in China. The following is a summary of provisions of key laws and regulations providing clear definitions on different requirements concerning land ownership, property right, procedures of land acquisition, compensations, and income restoration for affected farmers. Under such system, land acquisition often involves converting collectively owned rural land into state owned construction land. For acquired farmland, compensations including land compensation, resettlement subsidy and compensation for attachments will be paid directly to affected villages and individuals.

Land Management Law of the People's Republic of China (issued on January 1, 1987, revised August 28, 2004).

The People's Republic of China practices socialist public ownership of land, namely, ownership by the whole people and collective ownership by the working people. Land in the urban areas is owned by the State. Land in rural and suburban areas is owned by rural collectives. House sites and private plots of cropland are owned by rural collectives (Article 2 and 8).

For the public interest the state could expropriate land areas in accordance with the law and pay proper compensation. According to the local land use planning, land owned by the state and land owned collectively by farmers can be allocated to units or individuals for use in accordance with the law. Any unit or individual who needs to use land for construction must apply for using state-

owned land in accordance with the law. If construction needs the collective-owned rural land, it requires completion of conversion from collectively owned farmland to construction land, and such conversion of land use must go through the approval procedures. Acquisition of any basic farmland, more than 35 ha of other farmland (not basic farmland), or more than 70 ha of other rural lands, shall be subject to the State Council for approval. Users of the temporary use of land should use land in compliance with the purposes agreed upon in the contract for the temporary use of land and shall not build permanent structures on the land. The term for the temporary use of land shall not usually exceed two years (Articles 2, 9, 43, 44, 45, and 57).

The compensation shall be made for land expropriated on the basis of its original purpose of use, which includes land compensation, resettlement subsidy, and compensation for ground attachments and green crops on the land. The land compensation shall be six to ten times the average annual output value of the land in the last three years immediately before the land acquisition. The resettlement subsidy is made on the basis of the calculation of agricultural population to be resettled from agricultural production. The number of agricultural population to be resettled is calculated according to the amount of cultivated land acquisition divided by landholding per capita of arable land. The resettlement subsidy for each of the agricultural population to be resettled will be four to six times the average annual output value of the required farmland in the last three years. But the resettlement subsidy for every hectare of arable land shall not exceed the highest amount of 15 times over the average annual output value of the land in its last three years before land acquisition. Land compensation fees and resettlement fees for requirement of other kinds of land will refer to the standards for farmland acquisition in the province, autonomous region, or special municipality. The standards of compensating for ground attachments and green crops on the land shall be prescribed by provinces, autonomous regions, and special municipalities (Articles 31 and 47).

The Property Law of the People's Republic of China (implemented on October 1, 2007).

To meet the demands of public interests, the state in the limits of its authorities, as prescribed by law, can acquire collectively-owned land, unit and individual housing, and other real estate. When acquiring collective-owned land, the land user shall pay the land compensation and resettlement subsidy in full and compensation for ground attachments and green crops on the land in accordance with the law, including the costs for arrangement of the affected landless farmers' social security, to protect their livelihood and safeguard their legitimate rights and interests. When acquiring units' and individuals' housing and other real estate, relevant compensations should be paid and the affected entities' and people's lawful rights and interests should be safeguarded in accordance with the law; when private housing is required, the affected people's living conditions should be guaranteed as well (Article 42).

The Rural Land Tenant Law of the People's Republic of China (effective on March 1, 2003).

Among rural land tenants, women enjoy equal rights as men. The contractor should protect the lawful rights and interests of women. Any organization or individual shall not deprive and infringe upon women's legal rights on their contracted land. In the contracted term, the party awarding the contract should not take back the contracted land; and in the contract period, the contracted land should not be readjusted (Articles 6, 26, and 27).

The Ordinance of Acquisition and Compensation for Housing on the State-owned Land (State Council Decree no. 590).

The city- and county-level governments which make house acquisition decisions should provide the house owners with compensation including house value compensation, relocation fees, temporary transition subsidies, and business loss allowance. The value of the house compensation shall not be lower than the price in the real estate market on the day of announcement of the house acquisition decision. The house owners can choose cash compensation or replacement housing. If population relocation takes place due to house acquisition, the house acquisition department should pay a relocation fee to the house owner; if the house owner chooses replacement housing, the house acquisition department should offer the house owner either the temporary transition allowance or temporary housing before the replacement housing becomes available. Before house acquisition decision making, the city government and county government should organize the relevant departments in accordance with the law to survey the unregistered housing within the scope of the house acquisition areas to identify and resolve the issue. For the legal structures and temporary buildings in their approved legal using period, compensation shall be provided. For those identified as illegal buildings and temporary buildings with expiration of approval, no compensation shall be provided (Article 17, 19, 21, 22, and 24).

The Decision of the State Council on Deepening Reform on Strengthening Land Management (State Issuance no. 28 [2004]).

The local people's governments at or above the county level should take practicable measures to make sure that the landless farmers' living standards are maintained at least at their previous level after land acquisition. To be sure, the full and timely payments of the land compensation, resettlement subsidy, and compensation for ground attachments and green crops are allocated in compliance with law requirements. If the compensation for land acquisition cannot help the affected farmers keep their previous living standards and is not sufficient for paying the affected farmers' social security insurance, the provincial (autonomous regional) government should approve an increase in the resettlement subsidy. When the sum amount of the land compensation fee and resettlement subsidy reach the ceiling standard set by the law but still cannot have the affected farmers keep their previous living standards, local governments could subsidize the farmers with compensation funds for use of the state-owned land. The provincial (autonomous regional and municipal) government should draw up and disclose the unified annual output value of yields for the purpose of land acquisition and the weighted prices of land in the demarcated areas in all its counties, and make 'one land one price' for land acquisition. Key national construction projects must incorporate the costs for land compensation into the project overall budgets (Article 12).

Local governments at or above county level shall enact specific measures to guarantee the long-term livelihood of the farmers whose land is acquired. For projects with stable benefits, the farmers may buy a share via the lawfully authorized rights of construction land usage. The local government within the city planning districts shall enable the farmers whose land is acquired to participate in the urban employment system and establish a social security system. In acquisition of land owned by farmers collectively outside the city planning districts, the local government

shall be obliged to retain the necessary land for the farmers to cultivate or, if this is not possible, arrange corresponding jobs for them (Article 3).

In the process of land acquisition, farmers' collective ownership of land and farmers' rights to the contracted management of land rights and interests should be safeguarded. Before the examination and approval of land acquisition in accordance with the law, farmers to be affected by land acquisition should be informed of the land use, location, standard of compensation, and resettlement options. The investigation results of the land to be acquired should be confirmed by the village collectives and tenant farmers. When necessary, the land resources management sector should hold public hearings. The records and files of affected farmers' participation in informed consultation, as well as their confirmation should be prepared and the necessary documents must be submitted for approval of the land acquisition. The local government should accelerate the establishment of a grievance redress mechanism to manage appeals on land acquisition and resettlement and safeguard the legal rights of both the affected farmers and the land user. Except for special circumstances, the approved land acquisition plan should be disclosed to the public (Article 14).

The provincial government shall formulate standards for the distribution of land compensation fees within the rural collective organizations based on the principle that the land compensation fees shall be used for the farmer households whose land is acquired. The rural collective organization shall make the information on the revenues and allocation of the land compensation fees available to its members, and receive their supervision (Article 15).

The government at various levels shall set up a place for accessing and consulting government information at national archives and public libraries which is equipped with corresponding facilities and equipment for the convenience of citizens, legal persons or other organizations to access such government information. An administrative organ shall provide the government information voluntarily disclosed by it to national archives and public libraries in a timely manner (Article 16).

Measures for the Administration of Preliminary Verification Examination of the Land Used for Construction Projects

For a construction project that needs to be verified and approved, the entity using the land for construction shall file an application for a preliminary verification at the stage of feasibility study. For a construction project that needs to be ratified and archived, the entity using the land for construction shall file an application for preliminary verification before applying for ratification and archiving. If the construction project has not been preliminarily verified or fails to pass the preliminary verification, the party concerned shall not be approved to convert the land for agricultural use into that for construction use or to have the land requisitioned, nor shall it be permitted or to go through the land supply procedures

The Ministry of Land Resources Notice on Improving Land Acquisition Management (June 26, 2010).

Establishing new land acquisition compensation standards ensure that the compensation fees are put in place. To implement land unified annual output value and integrated land prices in the demarcated areas. To set up the unified annual output, value and land prices based on integrated land prices for land acquisition is the important measure to realize the ‘one land one price’ principle and perfect the land compensation mechanism; and it also meets the demand for increasing the standards for land acquisition and guaranteeing the rights and interests of affected farmers. All types of constructions that require acquisition of rural collective land should comply with such requirement. All sectors should set up a dynamic adjustment mechanism for land compensation standards and readjust the land acquisition compensation standard every two to three years, gradually raise the land acquisition compensation prices, according to the level of economic development, per capita income growth, and so on.

To prevent flaws during land acquisition and compensation, to ensure that the compensation fees are paid on time and in full, every step and all related departments should follow land acquisition and compensation rules and regulations. When the city and county prepare preliminary verification and approval of land acquisition, land compensation fees should be calculated in accordance with the scale of land acquisition and compensation standard, and a deposit should be paid in advance. For city construction land and construction projects with special site selection using land lease sale method, local governments should pay deposit of land acquisition compensation in advance. After approval of land acquisition in accordance with the law, timely settlement of land compensation will be made according to the actual situation by the approval.

Local government must take multiple resettlement measures to guarantee the landless farmers' production and living conditions, including prioritizing agriculture resettlement, saving land for resettlement, and putting in place social security funds for landless farmers.

Disclosure Method for Land Acquisition (Ministry of Land Resources [2001] Decree no. 10).

For acquisition of farmers' collective land, the land acquisition plan and the related land compensation and resettlement scheme should be disclosed in writing to the public in affected villages and villager groups. If collective land in rural townships is acquired, the disclosure should take place in the localities of township governments. If the affected villages, collective economic organizations, and rural villagers have dissenting opinions on land acquisition, compensation, and resettlement schemes, or request to hold a hearing, they should raise their questions to city or county land resources bureaus, and city government or county government within 10 working days from the date of announcement of land acquisition and resettlement compensation scheme. The land administration sectors of the city government or county government should study and explore different opinions about the land acquisition compensation and resettlement scheme and hold hearings in response to the hearing request. When there is a necessity, the land acquisition compensation and resettlement scheme should be revised or modified in accordance with relevant laws, regulations, and the approved land acquisition plan.

General Office of the State Council on Forwarding Ministry of Labor and Social Security for Landless Farmers Employment Training and Improvement of Social Security Work Guidance Notice, (State Council [2006] no. 29).

Vocational trainings should be given to landless farmers to help their employment opportunities and improvement of social security work as an important part in the reform of land acquisition system. Governments at various levels need to strengthen vocational training and improve social security work from the perspectives of rural-urban socioeconomic integrated development and incorporate the employment issues of landless farmers into local economic and social development plan and annual plan, to set up the social security program conducive to the landless farmers' characteristics and needs; and adopt effective measures to carry out the employment training and put in place social security funds, to promote landless farmers' employment and merging into urban society, ensuring that their living standards will not deteriorate due to land acquisition and securing their long-term livelihoods.

The Anhui Province Implementation Method of Land Management Law (September 22, 2000).

This regulation is based on the land management law of China, the 'land management law implementing regulations of the People's Republic of China', and relevant laws and regulations, and adapting the reality of Anhui to form this policy. The provincial administrative department of land and resources under the people's government is responsible for the province's land management and supervision work. The land and resources administrative department of the people's government at the county level and above shall be responsible for the management of the land within their respective administrative areas and supervision work. The concerned departments shall, in accordance with their respective duties, cooperate with the administrative departments of land and resources in land management. This province practices a system of registration and certification of the land in accordance with the law. The land ownership and use rights registered in accordance with law and regulations shall be protected by the law. As for the land collectively owned by farmers, the people's government at the county level shall register and issue certificates to confirm the ownership. As for land collectively owned by farmers for nonagricultural construction in accordance with the law, the government, at the county level, shall register and issue certificates to confirm the right to use the construction land. People's governments at all levels shall draw up the formulation of general land use planning based on relevant regulations. The general land use planning will go through examination and approval procedures at different administrative levels (Articles 1, 4, 5, and 11).

For approved nonagricultural construction occupying cultivated land, the land user (units and individuals) shall be responsible for reclaiming new farmland in the same amount and quality as the required land. For those units and individuals who do not have conditions to complete land reclamation or reclamation of new cultivated land not in good quality as required, land user should pay the reclamation fees according to CNY6-9 per square meter to set up the special funds for reclamation of new land. For acquiring basic farmland, the fee collection will be 40% higher than the above standard (Article 18).

For acquiring farmland, the following process should be followed: (1) preparing land acquisition application. City or county government and land resources department should prepare farmland conversion scheme, land reclamation scheme, land acquisition and compensation scheme, and land supply scheme. Upon approval of county or city government land acquisition schemes will be submitted to higher level of governments for approval. (2) Disclose the land acquisition scheme. Upon receiving approval of land acquisition scheme, city or county governments should

disclose the details of land acquisition scheme, including number of approval notice, purpose, scope, size, location, compensation standards, and rehabilitation details for affected farmers, as well as timeframe for implementing compensations in the affected townships and villages. (3) Registration of compensation. The affected land owners or users should bring their land use certificates or other evidence to county or city land resources department to register compensations for the affected land areas. (4) Disclose land acquisition and compensation scheme. Land resources department in city and county government shall consult with other agencies and formulate land acquisition compensation and rehabilitation scheme based on approved land acquisition plan, which will be disclosed in the relevant township and village for 15 days to collect opinions and comments from rural collective economic organizations and farmers. After approval by relevant city or county government, the land resources department will be responsible for organizing and implementing the compensation and rehabilitation plan. (5) To provide acquired land areas. Upon approval of land acquisition compensation and rehabilitation scheme, all compensations and fees shall be paid in full within 3 months. The owners and users of acquired land areas shall provide acquired land areas after receiving all compensations in accordance with compensation scheme (Article 33).

Compensation for land acquisition will be executed in accordance with the following criteria: **Land compensation.** (1) The land compensation for other land areas will be six times of the average annual output value for affected fish pond, lotus root, Chinese herbs; (2) for acquired fruit trees, and tea garden land, the land compensation will be 7 times average annual output value of the acquired land in the past three years; for the fruit garden not yield the land compensation will be 6 times of average annual output value of the land in the past three years. (3) For newly reclaimed farmland, land compensation will be the same as cultivated land if farming more than three years; and land compensation will be 3-4 times of average annual output value of the cultivated land in village in the past three years if farming less than three years. (4) For acquiring collectively owned construction land, land compensation will be 3-4 times of average annual output value of cultivated in the village in the past three years. (5) For acquiring collectively owned other land, land compensation will be 2-3 times of average annual output value of cultivated in the village in the past three years (Article 34).

Resettlement subsidy fees. The resettlement subsidy fee is calculated in accordance with the number of agricultural population to be resettled. The number of agricultural population to be resettled is decided on the basis of the amount of cultivated land acquisition divided by the landholding volume per capita locally. (1) The resettlement subsidy for each of the agricultural population to be resettled will be three to 3-4 times the average annual output value of the local land in the last three years before requirement; (2) for acquiring collectively owned construction land, the resettlement fees shall be 2-3 times the average annual output value of the local land in the last three years before requirement; and (3) acquisition of unused land shall not be entitled to resettlement subsidy fees. To ensure that restoration of income and livelihood of affected people land compensation and resettlement subsidy could be increased, but the combined items should not exceed 30 times of annual average output value of the acquired land in the past three years. The provincial government in accordance with local economic development conditions could approve further increase land compensation and resettlement subsidy (Article 35 and 36).

Compensation payment for the attachments to land and green crops. (a) the green crops on the land will be compensated according to the actual value of the crop; (b) the buildings and structures on the land, trees, and so on will be compensated in accordance with the relevant regulations or standard compensation set up by either provincial government or city governments. Compensation for ground attachments or green crops shall be paid to the land contractor or the structures' property owner.

Anhui Provincial Government Released the Notice on Readjustment of the Unified Annual Output Value of Land Acquisition and the Integrated Land Prices in Anhui Province, no. 24 (2015).

In order to better handle land acquisition works and ensure interests of affected farmers and collective units, following the national laws and regulations and local economic development conditions, it is now to disclose the readjusted *Anhui Provincial Integrated Land Price of Land Acquisition Areas*, and *Anhui Provincial Unified Annual Output Value and Compensation for Land Acquisition* and make following explanations:

- (1) Beginning from March 1 2015, for acquiring any collectively owned rural land within the province, land compensation and resettlement subsidy will follow new land acquisition compensation standards. For construction land area located in the areas with same annual output value and integrated land price, the compensation level will be maintained at the same level. Each city or county could raise such standard on some special land areas based on local conditions.
- (2) Using state owned rural land areas, following the neighboring township unified annual output value and integrated land price. If there are several different areas with different unified annual output values and integrated land prices, following the highest standard in the areas.
- (3) Each city and county government should coordinate well between old and new compensation standards and strengthen policy explanation and properly resolve all issues during implementation to ensure new land acquisition compensation standards to be implemented smoothly.
- (4) The land compensation standard for each city or county is established by provincial government. They will be readjusted following different local economic development conditions. Each city should follow local economic development conditions make relevant adjustment on compensation standards for acquired houses and attachments on acquired rural land areas, which will be implemented after being filed with provincial land resources department.

B. Ethnic Minorities

In China there are more than 400 laws and regulations addressing the legal requirements and stipulations of ethnic minorities. They cover almost every aspect of life from political representation, to cultural integrity, to economic development. All these Chinese legislation promotes preferential treatment for minority nationalities in some contexts and promotes equitable treatment of all groups in others. However, the "Constitution of the People's Republic of China" and the "Law of the People's Republic of China on National Region Autonomy" are

essential and sets the framework for all subsequent legislation, which is summarized in the table below.

Constitution of People's Republic of China issued on December 4 1982, and revised in 1988, 1993, 1999, and 2004

All nationalities in the People's Republic of China are equal. The state protects the lawful rights and interests of the minority nationalities and upholds and develops a relationship of equality, unity and mutual assistance among all of China's nationalities. Discrimination against and oppression of any nationality, and any act undermining the unity of the nationalities is prohibited. The state assists areas inhabited by minority nationalities in accelerating their economic and cultural development according to the characteristics and needs of the various minority nationalities. All national autonomous areas are integral parts of the People's Republic of China. It also establishes that "all nationalities have the freedom to use and develop their own spoken and written languages and to preserve or reform their own folkways and customs.

The National Regional Autonomy Law issued on May 31 1984, and revised on Feb 28 2001

The National Regional Autonomy Law emphasize on indigenous people's rights and interests in national autonomous regions, among which the most important are as follows: i) The resolutions, decisions, orders and instructions concerning national autonomous areas adopted by the State organs at higher levels should suit the conditions in these areas; ii) While exploiting resources and undertaking construction in national autonomous areas, the State shall give consideration to the interests of these areas, make arrangements favorable to the economic development there and pay proper attention to the productive pursuits and the life of the minority nationalities there. The State shall take measures to give due benefit compensation to the national autonomous areas from which the natural resources are transported out; iii) While exploiting resources and undertaking construction in national autonomous areas, the organizations or individuals shall take effective measures to protect and improve local living and ecological environment and to prevent and control pollution and other public hazards.

C. Rules and Regulations Managing Influx of Labor

National Development and Reform Commission: Interim Measures for Social Stability Risk Assessment of Major Projects Investing in Fixed Assets (Development and Reform Commission Issued Investment [2012] no. 2492).

The state stipulates to establish and standardize the social stability risk assessment mechanism for major investment projects, and the purpose is to, in the event of an important social and economic development, promote scientific decision making, democratic decision making, and lawful decision making and prevent and resolve social conflicts. The measures stipulate that the local people's government or its department designates an appraisal organization to carry out an assessment on the social stability risk analysis made by the project unit. Based on the actual situations, it can use various methods, such as public disclosure, questionnaires, field visits, and stakeholder consultation meeting and public hearings, to listen to different opinions, analyze and determine the risk levels, and prepare a social stability risk assessment report. The main content of the assessment report contains the project construction's legality, rationality and feasibility,

risk management assessment, and any risks for social stability, the opinions from various aspects and adoption of opinions, the conclusions of the risk assessment and countermeasures and suggestions for risk prevention and resolution, and emergency response and preemptive planning. The risk assessment report for social stability done by the designated assessment unit is an important basis for the NDRC's examination and approval of the project or the NDRC's verification and submission to the State Council's approval. The project proposals rated high or medium risks by the assessment report will not be verified, approved, or submitted to the NDRC. Those rated low risk with reliable control measures will be examined, approved, or verified for submitting to the State Council, meanwhile setting forth requirements for the relevant sectors to put in place the prevention and resolution measures (Articles 5 and 8).

Anhui Provincial Government Office (No. 14 2010): Anhui Provincial Interim Measures for Conducting Social Stability Risk Assessment for Major Projects or Events.

The assessment should be carried out before implementation for any large activities or projects having direct impacts on interests of large number of population. The assessment should include (a) rationality, (b) feasibility, (c) security, and (d) other issues affecting social stability. All levels of local governments should respect the outcome of assessment and minimize potential social risks.

Anhui Provincial Government (No. 271, 2016) Anhui Provincial Regulation on Floating Population Residential Registration.

The regulation stipulates that all those working and living outside their registered home area should complete registration as temporary workers or temporary residents within 15 days of arrival at local public security bureaus. Entities or individuals renting houses to people outside their original registered home place should file records of the tenants within 5 days of the renting contract. Companies or public institutions employing employees working outside of their registered home place should file records at local public security bureaus.

5.2 Social Management Systems and Capacity of Responsible Agencies

5.2.1 Land Acquisition Process

The People's Republic of China practices socialist public ownership of land, namely, ownership by the whole people and collective ownership by the working people. Land in the urban areas of cities is owned by the State. Land in rural and suburban areas is owned by peasant collectives, except for those portions of land which belong to the State as provided for by law; house sites and private plots of cropland and hilly land are owned by peasant collectives. To meet the demands of public interest, it is permissible to requisition lands owned collectively and premises owned by entities and individuals or other realties according to the limit of statutory power and procedures. When requisitioning collectively-owned land, it is required, in accordance with the law and in full amount, to pay land compensation, resettlement subsidy, and compensations for the attachments as well as other fees, such as social security fees for the land loss farmers in order to guarantee their livelihood and protect their lawful rights and interests. When

requisitioning the premises owned by entities and individuals or other realties, it is required to compensate for demolition in accordance with the law and to protect the lawful rights and interests of the owners of the requisitioned properties. When requisitioning the individuals' residential houses, it is required to guarantee that the housing conditions of the owners of the requisitioned will not be deteriorated. Based on relevant laws and regulations, a set of institutions has been established in managing the process of land acquisition. They include Ministry of Land Resources at national level, Land Resources Department at provincial level, and Land Resources Bureaus at municipality and county levels, as well as land institute at township level. These institutions are equipped with functions of land use planning and land use management at different administrative levels, which includes the responsibility for managing the process of land acquisition for the state construction.

On the potential social impacts caused by land acquisition, the current legal framework, has set up a clear procedure for obtaining approval of land acquisition for investment projects, and managing the land acquisition process. Any project without approval of land acquisition should not be allowed to proceed. One key requirement is to obtain approval of land preliminary verification issued by provincial land department or Ministry of Land Resources, which should be completed before the ratification and approval of a construction project. If the construction project has not been preliminarily verified, the party concerned shall not be approved to convert the land from agricultural use into that for construction use. Once the approval of land preliminary verification is obtained, the actual land acquisition could begin. To manage potential social impacts, the current legal system specifies key steps involving with land acquisition, which include informing the affected people about the purpose, location, compensation rates, and rehabilitation measures for the land to be acquired, having affected parties to confirm the outcome of land survey, and holding public hearing on the compensation for land to be acquired.

Following the confirmation, the local county land resources bureau will begin the process of compiling land acquisition application documents, and submit them to higher level of government for approval. Once it is approved, land acquisition decree should be published in the affected villages within 10 days of the approval. After the decree, the affected rural collectives and individuals should bring relevant land use certificates and go to required place to register the land acquisition. Based on land acquisition scheme and registered data, local land resources bureau should prepare "land acquisition compensation and rehabilitation scheme" and disclose such scheme to affected villages. When all compensation for all items paid, the affected rural collectives and individuals should release the acquired land areas to local land resources bureau.

For most rural road improvement projects, according to the decree No. 581 from Ministry Land Resources (2013) and relevant notice from provincial land resources department, no official land acquisition approval is required as long as rural road widening is less than 6.5 meters. Given the fact that most rural road upgrading and rehabilitation will be carried out within existing right of way, the actual amount of land areas to be involved is quite limited. Taking Yuexi County Zhongguan Township Road as an example, with 12 km of township road improvement only 13.27 mu of land areas were required, and most of them are woodland with less than 2 mu as farmland. Among different rural roads visited in selected counties, not only amount of land acquisition is quite small, but also none of them involved any house demolition and resettlement. Although no official land acquisition approval is required for rural road improvement projects,

actual land acquisition procedures, and compensation payment are still required for the acquired land areas in accordance with relevant laws and regulation. This is particularly true for the implementation of county or township road improvement projects. Based on review of a number of rural road projects in selected project counties, most compensation rates adopted are consistent with unified annual output value and integrated land price issued by the provincial government. Regardless amount of land areas involved, for each rural road improvement project, land acquisition working team were set up in concerned townships, with staff mainly from local land resources bureau and township governments. They worked closely with affected villages to carry out detailed impact survey, prepare compensation scheme, conduct public hearing, and deliver compensations to the affected people.

In case there is any complaint by affected people concerning limited land acquisition, ranging from issue of missing items to adequacy of compensation rates, the affected people could easily voice their concerns to village officials, the resettlement working team in the township and local land resources bureau. No land acquisition could take place only after agreements reached with all affected households on compensation and rehabilitation based extensive consultations. Discussions with affected villagers and local officials confirmed that such a grievance redressal system is effective to address various concerns by affected people. For those village roads with small land requirement being voluntarily provided by concerned villages, the agreement on small scale land donation is often achieved following village wide consultation and discussion. Without such agreement the civil work on village road upgrading could not proceed.

The discussions with project sponsors and visits to a few project sites confirmed that such land acquisition procedures were generally followed in different project counties, and all affected villages were notified about land acquisition, participated in measurement of impacts, and were provided with the compensation indicated in the provincial decree. Based on these visits and past experiences with similar land acquisition procedures in the region, as long as the procedure is followed, the basic interests of affected people were protected.

For those village road improvement projects, connecting different natural villages within the administrative village, limited land requirement is often provided voluntarily by the affected village. This is because land ownership of village road belong to village collective, and road improvement will not involve any land ownership transfer. In case there is small land requirement, it is up to each affected village to provide them before actual road improvement civil work could be carried out. Following consultation by village committee with all village members, such small land requirement is often taken from village reserved land or shared equally among village members. Taking road rehabilitation in Xigang Village from Gaofeng Township in Shucheng County as an example, for 4 km of road improvement, about 2.5 mu of land areas would be required. For such limited impact, following consultations in village meetings it was agreed such loss would be shared among all village members. According to local officials during village road rehabilitation, such agreements were often reached following village meetings since road improvement will directly benefit everyone in the village, and since the actual impact on individual would be very small after land readjustment. Nevertheless, local villages rarely kept records of such consultation and land readjustment.

For the required temporary land areas during project construction, instead of relying on local land resources bureaus, project sponsor often negotiated directly with local villages. The

compensation rates for temporary land occupation are often set following annual crop value plus the cost of restoring affected land to original conditions. For land areas owned by village collective, the compensation will be paid directly to affected village. For land areas contracted to individual households, compensation will be paid directly to affected households.

5.2.2 Ethnic Minority Development

In Anhui Province, ethnic minority population accounts for only 0.66% and 90% of them are Hui nationalities. It is unlikely that proposed rural road improvement program will have significant impact on ethnic minority communities. Issues relating to ethnic minorities is managed by Ethnic and Religious Affairs Commission (ERAC) at various levels under the government administrative system. Development projects/programs are managed by the line department in charge of the specific sector. For example, rural roads improvement activities are managed by local transport bureau.

The PforR program is managed by the provincial transport department, implemented by the ten county transport bureaus. Consultation with local communities down to village level is done in a cascading manner from county to township, and to village level. Consultation on activities such as rural roads upgrading and rehabilitation is done with the general public, regardless whether the targeted audience is ethnic minority or Han people. According to local officials, ethnic minority communities are often given priority in formulating rural road improvement program for relevant township and county governments. When such needs arise, the local ERAC will be put in charge to collaborate with different line departments and ethnic minority communities, in most cases, explain development benefits and reach consensus from ethnic minority people.

ERAC at all levels is charged with managing resources to promote welfare to ethnic minorities, such as income generating through handicrafts, promoting ethnic minority presence by supporting special festivals, etc. The ERACs have sufficient staffing and have qualified members of staff, most often from ethnic minority groups, to manage issues in relation to ethnic minority affairs.

5.2.3 Poverty population, gender and vulnerable groups

Poverty reduction has become the national priority in China. It is also key task in Anhui Province. The Leading Group Office for Poverty Alleviation in Anhui Province and ten county level are responsible for implementing accurate poverty alleviation. All government departments are requested to contribute to poverty reduction from their sectoral perspectives, and this will be assess as performance indicators. The provincial transportation department is managing the PforR guided by the central government's requirements on poverty focus. In fact, one of key criteria in selecting projects under Smooth Traffic Program is to improvement access and connection of large natural villages among 3,000 poverty villages in the Province. The implementation of Smooth Traffic and other provincial rural road improvement programs will directly contribute to poverty reduction by improving poor communities' access to social services and markets.

All China Women's Federation has offices from central to county levels, and focal points at township level to be responsible for gender related issues. In particular, equal access for women

to social services and economic resources is one of such issues. The county level women's federations manage standalone programs with women as targeted beneficiaries. For those vulnerable groups, such as those with no working capacity, disabled, and those identified as low income households, local county civil affairs bureaus are responsible for providing assistance and cover them with rural minimum living allowance.

5.3 Assessment of Local Existing Systems and Capacity against Core Principles of PforR

There are local policy frameworks, operation systems, and designated agencies to implement these policies that are consistent with PforR core principles.

Core Principle: Land acquisition and loss of access to natural resources are managed in a way that avoids or minimizes displacement, and affected people are assisted in improving, or at least restoring, their livelihoods and living standards.

There are multiple laws and regulations issued by the central government, and a series of implementation measures issued by Anhui Provincial Government on land acquisition and resettlement compensation. County and township rural road improvement works might involve limited amount of land acquisition, causing change of ownership from collectively owned land to state owned. There are concrete steps to follow when there is a need for ownership change, which is equivalent to land acquisition and related compensation. Although very little land acquisition will be needed for most rural road improvement projects under the PforR, local land resources bureaus and township governments in participating counties are experienced in managing land acquisition for similar development projects, such as county and township road improvement works under smooth traffic program. For these counties, an effective land acquisition procedure has been well established, where a land acquisition office comprising staff from county, township, and village have proved to be efficient in carrying out land acquisition and resettlement work. Public consultation on land acquisition and resettlement is normally carried out at all levels, which also proves to be very effective.

Rural roads connecting among villages do not need ownership change, and the related compensation is managed at village level. In most cases, rural roads upgrading only takes uncultivated land where no livelihoods impact is caused. When cultivated land or farmer households' crops is affected, compensation will be considered by collective decision at village level. Normally compensation is rendered by using resources available to the village committee. However, records of the process and details of compensation is rarely kept. To improve transparency on this aspect, a recommendation will be included in the PAP.

Core Principle: Due consideration is given to cultural appropriateness of, and equitable access to, program benefits giving special attention to rights and interests of Indigenous Peoples and to the needs or concerns of vulnerable groups.

Local ERAC is responsible for securing resources to promote economic development and protection of ethnic minority culture although in Anhui Province minority population accounts for only 0.6 percent. Among ten participating counties, only one county has some minority villages and all of them Hui nationalities. Hui nationalities share the same language as Han people and are not considered as vulnerable as other minority groups. For proposed rural roads, these rural communities will be consulted and given similar opportunities to suggest candidate

projects to be included in government rural road improvement programs as well as under proposed PforR programs.

Local Women's Federation are responsible for ensuring equal rights of women in development. Local Bureau of Civil Affairs are responsible for the welfare of families with no working capabilities or under the poverty line, and these vulnerable people are covered by minimum living allowance. The Leading Group Office for Poverty Alleviation is responsible for carrying out poverty alleviation programs funded by designated funds from central and provincial government. All three agencies participated in preparation missions, and are well consulted to seek their recommendations to the PforR in terms of benefiting vulnerable groups. These efforts have made sure that vulnerable groups are well considered under the PforR.

Core Principle: Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

Consultations during preparation missions confirmed that there will be no social conflict arising from rural roads upgrading and rehabilitation. All selected counties and proposed roads are in areas that is most poor in the province, and where rural road conditions are relatively poor. This is in line with local government's agenda, and widely supported by local people. The potential risk brought by influx of labor is very low as most workers are locally hired for roads upgrading and rehabilitation. Only very small number of technical staff will be brought in by companies if outside of the region. These staff are highly educated and in small number. Local public security bureaus request prompt registration of any worker coming into the area. No actions is needed on this aspect.

CHAPTER VI: SUMMARY OF ASSESSMENT OF ENVIRONMENTAL AND SOCIAL SYSTEMES

The Environmental and Social System Assessment should assess the degree to which the systems are relevant to the Bank's PforR policy and directive, i.e.:

- a. Promote environmental and social sustainability in the Program; avoid, minimize, or mitigate adverse impacts, and promote informed decision-making relating to the Program's environmental and social impacts;
- b. Avoid, minimize, or mitigate adverse impacts on natural habitats and physical cultural resources resulting from the Program;
- c. Protect public and worker safety against the potential risks associated with: (i) construction and/or operations of facilities or other operational practices under the Program; (ii) exposure to toxic chemicals, hazardous wastes, and other dangerous materials under the Program; and (iii) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards;
- d. Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist the affected people in improving, or at the minimum restoring, their livelihoods and living standards;
- e. Give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups; and
- f. Avoid exacerbating social conflict, especially in fragile states, post-conflict areas, or areas subject to territorial disputes.

The ESSA concluded that, in general, the rules and regulations of environmental and social management system applicable to the proposed PforR are consistent with the Bank PforR Policy and the Bank PforR Directive, but the capacity to effectively enforce certain regulations in some agencies could be improved. Thus, several recommendations are made to address these shortcomings and are included in the Program Action Plan or Disbursement Linked Indicators. The summary of the assessments relevant for the activities to be supported under the Program is presented in Table 4.

Table 4 Assessment of Environmental and Social System based on the Bank Policy for PforRs

a. Promote environmental and social sustainability in the program design; avoid, minimize, or mitigate against adverse impacts; and promote informed decision-making relating to a program’s environmental and social effects.		
Key Elements	National and Provincial Systems	Key Findings
Operate within an adequate legal framework and regulatory authority to guide environmental and social impact assessments <i>at the programmatic level</i>	<p>China has developed an adequate legal framework for environmental and social impact assessment, backed by a set of comprehensive laws, regulations, technical guidelines and standards, which apply nationwide. Over the decades, it has gradually evolved into a comprehensive system that is generally consistent with the Bank PforR policy.</p> <p>Based on assessment, it is concluded that there is an adequate legal and regulatory framework for the environmental and social impact assessment for this program.</p>	Consistent.
Incorporate recognized elements of environmental and social assessment good practice, including: (a) early screening of potential effects; (b) consideration of strategic, technical, and site alternatives (including the “no action” alternative); (c) explicit assessment of potential induced, cumulative, and trans-boundary impacts; (d) identification of measures to mitigate adverse environmental or social impacts that cannot be otherwise avoided or minimized; (e) clear articulation of institutional	The Chinese EIA system has well-defined guidelines covering screening, alternative analysis, impact assessment, mitigation measures, management plan, and consultation.	<p>Consistent.</p> <p>Capacity to effectively enforce certain regulations in some agencies could be improved:</p> <ul style="list-style-type: none"> - The role of project supervision consultant needs to be fully utilized for environmental supervision; - Comprehensive environmental management training is to be

responsibilities and resources to support implementation of plans; and (f) Responsiveness and accountability through stakeholder consultation, timely dissemination of Program information, and responsive grievance redress measures.		provided to ADT, CTBs and Village Supervision Council members
b. Avoid, minimize, and mitigate against adverse impacts on natural habitats and physical cultural resources resulting from the Program.		
Key Elements	National and Provincial Systems	Key Findings
Includes appropriate measures for early identification and screening of potentially important biodiversity and cultural resource areas.	<p>The EIA guidelines provide detailed guidance on identification and screening of sensitive environmental and cultural resources, including survey of baseline environmental situation such as geology, surface water, wild life, forest, wetland, fishery, rare and endangered species, nature reserves, etc. Key sensitive areas such as rivers, reservoirs, nature reserves, wetland parks, forest parks, scenic areas are identified for detailed survey and special assessment. Cultural resources are screening through consultation/approval of relevant authority and field investigation.</p> <p>For this program, only rehabilitation and upgrading of existing rural roads in non-sensitive environmental and social context are included in the program design. The program does not include new construction of rural roads, and any rehabilitation and upgrading of existing rural roads that fall into the boundary of environmental sensitive areas (e.g. nature reserve, protected areas, reservoirs, nature habitats, physical cultural resources etc.).</p>	<p>Consistent.</p> <p>Important biodiversity and cultural resource areas will not be involved in this program.</p>
Supports and promotes the conservation, maintenance, and rehabilitation of natural habitats;	The Chinese environmental protection system emphasizes the protection, maintenance and rehabilitation of natural habitats through a comprehensive set of laws, regulations, guidelines and standards.	<p>Consistent.</p> <p>The activities supported</p>

avoids the significant conversion or degradation of critical natural habitats, and if avoiding the significant conversion of natural habitats is not technically feasible, includes measures to mitigate or offset impacts of the Program activities.	Avoiding such sensitive areas is the top priority of the EIA, and where inevitable, special assessment is mandatory and necessary mitigation or offset measures are to be developed in the environmental management plan.	under the Program do not take place on sensitive environmental sites/areas.
Takes into account potential adverse impacts on physical cultural property and, as warranted, provides adequate measures to avoid, minimize, or mitigate such effects	The <i>Cultural Property Protection Law</i> provides adequate legal framework and procedures for protecting cultural property during the EA process. If any physical cultural resource is impacted, impacts must be assessed, and consultation and approval must be secured with cultural property authority, and protection measures be included in the environmental management plan. Chance-find procedures are also clearly defined in the law.	Consistent.
c. Protect public and worker safety against the potential risks associated with (a) construction and/or operations of facilities or other operational practices developed or promoted under the Program; (b) exposure to toxic chemicals, hazardous wastes, and otherwise dangerous materials; and (c) reconstruction or rehabilitation of infrastructure located in areas prone to natural hazards.		
Key Elements	National and Provincial Systems	Key Findings
Promotes community, individual, and worker safety through the safe design, construction, operation, and maintenance of physical infrastructure, or in carrying out activities that may be dependent on such infrastructure with safety measures, inspections, or remedial works as appropriate.	China has established a comprehensive management and supervision system for work safety. This system ensures the screening of safety issues, assessment of work safety during project preparation, design and construction supervision. Based on the assessment, it is noted that Anhui has well established mechanism for safety supervision.	Consistent.
Promotes the use of recognized good practice in the production,	The Program activities do not involve production, management, storage, use, transport or disposal hazardous materials.	No further assessment is needed.

<p>management, storage, transport, and disposal of hazardous materials generated through the Program construction or operations; promotes the use of integrated pest management practices to manage or reduce pests or disease vectors; and provides training for workers involved in the production, procurement, storage, transport, use, and disposal of hazardous chemicals in accordance with international guidelines and conventions.</p>		
<p>Includes measures to avoid, minimize, or mitigate community, individual, and worker risks when the Program activities are located within areas prone to natural hazards such as floods, hurricanes, earthquakes, or other severe weather or climate events.</p>	<p>China has put in place safety and risk assessment systems for projects that are prone to flood and natural hazards (e.g. geo-hazard, earthquake), with well-established institutional arrangement and implementation mechanism.</p>	<p>Consistent.</p>
<p>d. Manage land acquisition and loss of access to natural resources in a way that avoids or minimizes displacement, and assist the affected people in improving, or at the minimum restoring, their livelihoods and living standards;</p>		
<p>Key Elements</p>	<p>National and Provincial Systems</p>	<p>Key Findings</p>
<p>Avoids or minimizes land acquisition and related adverse impacts; identifies and addresses economic and social impacts caused by land acquisition or loss</p>	<p>The effort of avoid or minimize land acquisition is achieved through both technical designs and relevant land department review process, including preliminary verification in order to protect primary farmland. The current legal system on land management consists of a range of national laws, regulations and provincial implementation measures,</p>	<p>Consistent. The process of compensation payment for limited land loss in</p>

<p>of access to natural resources, including those affecting people who may lack full legal rights to assets or resources they use or occupy.</p>	<p>which defined land acquisition procedures in China. Under the existing land acquisition procedures, the potential social impacts is addressed by engaging affected villages in land impact survey, confirming surveyed results, conducting public hearing, adopting unified compensation rates, and providing employment opportunities and social security coverage for land loss farmers. For those without full legal rights, despite of lacking clear entitlements in current legal framework, in practice, proper compensations are often provided by negotiation with affected parties.</p>	<p>county-township road improvement, and voluntary land donation for village road improvement could be improved with better documentation and regular monitoring, which are included in the program action plan.</p>
<p>Provides compensation sufficient to purchase replacement assets of equivalent value and to meet any necessary transitional expenses, paid prior to taking of land or restricting access.</p>	<p>Under the current legal framework, particularly No. 28 decree by the state council in 2004, land compensation rates have increased steadily. Many provincial government have issued unified average output value and compensation rates covering all villages in the province. The resulted compensation rates is more than 20 times of annual average output value. Before taking the land, all compensation should be delivered to affected parties.</p>	<p>Consistent</p>
<p>Provides supplemental livelihood improvement or restoration measures if taking of land causes loss of income-generating opportunity (e.g., loss of crop production or employment). Restore or replace public infrastructure and community services that may be adversely affected by the Program.</p>	<p>According to No. 28 degree of state council, local authorities are requested to pay special attention to rehabilitation for land loss farmers by offering a range of rehabilitation measures, such as replacement farmland, employment opportunities, skill training, and social security, and providing benefiting sharing from project land. Under current land acquisition system, the project sponsor is required to pay compensation for all affected assets including both privately owned attachments and public infrastructure and community services. In most cases, affected public infrastructures and community services will be restored by relevant government agencies.</p>	<p>Consistent</p>
<p>e. Give due consideration to the cultural appropriateness of, and equitable access to, Program benefits, giving special attention to the rights and interests of the Indigenous Peoples and to the needs or concerns of vulnerable groups</p>		
<p>Key Elements</p>	<p>National and Provincial Systems</p>	<p>Key Findings</p>

<p>Undertakes free, prior, and informed consultations if Indigenous Peoples are potentially affected (positively or negatively) to determine whether there is broad community support for the Program.</p>	<p>This core principle is consistent with provision in the national Constitution, which stipulated that “all nationalities in China are equal. The state protects the lawful rights and interests of the minority nationalities and upholds and develops a relationship of equality, unity and mutual assistance among all of China’s nationalities. Regional autonomy is practiced in areas where people of minority nationalities live in concentrated communities; in these areas organs of self-government are established to exercise the power of autonomy.</p>	<p>Consistent.</p>
<p>Ensures that Indigenous Peoples can participate in devising opportunities to benefit from exploitation of customary resources or indigenous knowledge, the latter (indigenous knowledge) to include the consent of the Indigenous Peoples.</p>	<p>In comparison with core principles, although the current legal framework support the lawful rights and interests of the minority nationalities and upholds and develops a relationship of equality, unity and mutual assistance among all of China’s nationalities, there no specific policy requirement for any development project to carry out prior, free and informed consultation with minority communities, and to obtain broad support. Nevertheless, minority communities like other local communities will be consulted and obtained their support during EIA and land acquisition process for planning investment projects. The local government agencies will review and approve relevant investment projects on behalf of local population and communities.</p>	<p>Consistent.</p>
<p>Gives attention to groups vulnerable to hardship or disadvantage, including as relevant the poor, the disabled, women and children, the elderly, or marginalized ethnic groups. If necessary, special measures are taken to promote equitable access to the Program benefits.</p>	<p>On the issue of giving special attention to vulnerable group including the poor, disabled, women, and the elderly, there is established system in China for local government to provide support to urban and rural low income households, including various vulnerable groups. Such support including cash income to meet minimum living allowance for the group, and in kind support on different aspects of daily expenses, such as reduction or waive of electricity tariff, heating cost, and so on. The proposed rural road improvement projects will not only bring directly benefits to many rural communities including many poor villages with easy access to markets and services, but also will generated employment opportunities during project implementation for local population.</p>	<p>Consistent.</p>

CHAPTER VII: STALKHOLDERS CONSULTATION

A few rounds of consultations with relevant stakeholders were conducted during the preparation of ESSA report, including bureaus of transport, environmental protection, land resource, forestry, water resources, urban planning, poverty alleviation office, ethnic minority and religion at the project counties, as well as project affected people along the roads during the field visits to a number of project roads. During these consultations, the Bank task team provided introduction of PforR policies and safeguards requirements, and collected information on the environmental and social legal framework, implementation mechanism and institutional setup and performance.

The draft ESSA report (in Chinese) was prepared and shared with ADT and the project county governments. A formal consultation workshop on the draft ESSA was organized on Jan 11, 2018 in Hefei, with participation of relevant government institutions of ADT and ten project county CTBs. Two more consultation workshops were also conducted during Jan 11-12, 2018 in two selected counties (Shucheng and Dingyuan), with participation of CTBs, EPBs, land resource bureau, work safety bureaus, development and reform commissions, and township governments (Minutes of these consultation workshops is included in Annex 1). The purpose of the consultation workshops was to: (a) introduce ESSA approach under the proposed PforR operation; (b) seek opinions and feedback on the key findings and recommendations of the draft ESSA; and (c) identify possible recommendations for the proposed program action plan.

Conclusions: The participants concurred with the findings of the draft ESSA and voiced their strong support in implementing the proposed Program. Some participants provided valuable opinions on the accuracy of the ESSA description. Expectation of early implementation of the project and disbursement of fund is explicitly expressed by project counties, particularly from the representatives from township government. . The recommendations in the draft ESSA report received broad concurrence among the stakeholders, and are considered to be highly relevant and valuable for strengthening the actual effectiveness of the implementation of the existing environmental and social system.

Disclosure: The ESSA report is disclosed in-country and in the headquarter of the World Bank, i.e. the Chinese version of ESSA is disclosed in the website of ADT on November 15, 2017, and the English version is disclosed in the InfoShop on January 16, 2018.

CHAPTER VIII: RECOMMENDATIONS

Based on assessment of the environmental and social management system applicable to the proposed Program, it is concluded that the comprehensive sets of environmental and social management systems are in place to address the environment, health and safety, as well as land acquisition and indigenous peoples concerns related to the proposed activities under the Program. Such systems are principally well-aligned with the core principles and key elements as defined in the World Bank PforR Policy and Directive. As the Program is designed, the rehabilitation and upgrading of existing rural roads in non-sensitive environmental and social context is unlikely to have significant environmental and social impacts, the overall risk from environmental and social safeguards perspective is rated as moderate.

With general consistency of the environmental and social system with the Bank's policy, there are rooms of improvement for certain aspects in implementation enforcement and capacity building identified through this ESSA, based on which the following recommendations are proposed to the Program Action Plan or DLI.

Recommendations on Strengthening Environmental Management System:

- (1) Strengthening the performance of supervision consultant: During construction, the role of project supervision consultant needs to be fully utilized in terms of environmental supervision. Through review of existing reports from supervision consultants, it is observed that environmental performance is not adequately reflected in the supervision reports, and sometimes even absent. Therefore, it is recommended that environmental supervision shall be explicitly incorporated into the bidding documents and contracts of supervision consultant. The on-site supervision of environmental performance of contractors shall be adequately reflected in the regular supervision reports from the consultants to the project implementation units.
- (2) Capacity training: This assessment concludes that CTBs management staff have rich experience in transport construction projects, while may not have adequate and systematic knowledge of environmental and social safeguards. The Village Supervision Council members who play an important role in village roads supervision also has limited knowledge and experience in environmental and social safeguards supervision. Therefore, it is recommended to strengthen the capacity building efforts for the CTB staff (CRMS, QSS), VSCs, as well as contractors and supervision consultants to enhance the effective management and supervision of environmental performance of rural road construction projects under the Program.

Recommendations to Social Management System Performance:

- (3) Land acquisition and compensation. Local systems and practices are in line with the World Bank policies on involuntary resettlement, which mainly refers to small scale land acquisition for most county and township road improvement activities. In terms of small

land requirement for village road improvement, they are often donated voluntarily by concerned villages following consultation meetings by village committees. This is because land areas of these village roads belong to village collectives, However as the best practice, it is agreed that the PMO will support normalization of the village consultation and compensation mechanism, to ensure equitable and transparent outcomes. In cases where land is voluntarily donated, the process should be clearly documented in writing. In cases where compensation is given to affected families managed within the village, clear records of the type of compensation will be documented to improve transparency.

- (4) Monitoring and evaluation: The PMO, in collaboration with the participating counties, has agreed to establish a third-party monitoring mechanism, which will work directly with county implementation agencies and concerned township governments, to document the process and outcomes of land acquisition in project counties, if such activities take place, and submit them to PMO and the Bank semiannually.

Annex 1: Minutes of Public Consultation Meetings

Three ESSA consultation workshops were held during Jan 11-12, including one in Hefei with participation of ADT and eight project county CTBs, and two workshops in Shucheng and Dingyuan counties with participation of county and township level stakeholders (list of participants attached below). Prior to the workshops, the Chinese translation of the ESSA report has been shared with ADT and distributed to all ten project counties in November 2017.

The purpose of the consultation workshops was to: (a) introduce ESSA approach under the proposed PforR operation; (b) seek opinions and feedback on the key findings and recommendations of the draft ESSA; and (c) identify possible recommendations for the proposed program action plan.

During these consultation workshops, the World Bank task team environmental and social specialists presented the overall introduction of the ESSA approach for the PforR, and the key findings and recommendations in the draft ESSA report. Feedback was given by the various participants in adequacy and accuracy of the report description, and relevance of the recommendations and suggestions for further improvement of the ESSA report. The key feedbacks are summarized in Table 5.

Table 5. Comment and Feedback on the Draft ESSA

Comments Draft ESSA	Feedback
Accuracy of Chinese translation of County	The English name County Road Management Station is replaced with a more appropriate County Road Management Bureau, to avoid inaccurate translation.
Accuracy of staff numbers in CRMB	ESSA is revised to reflect the appropriate numbers of the staff in CRMBs.
Environmental mitigation measures should be budgeted to ensure fund availability during implementation.	This issue will be dealt with in the process of specific EIA preparation. Feedback will be communicated to the EIA and design consultants to ensure the fund budget.
Approach to address small land acquisition by affected villages could vary from county to county depending on demand of road improvement. In some cases, land could be voluntarily provided by villages even for township roads.	The practice of land acquisition by affected villages is clarified and reflected in the revised ESSA.
For management of land acquisition, even though county land bureau is not directly involved as no formal land acquisition procedure is required for rural road upgrading, staff from township level land institute often participated in implementation of land acquisition for rural road improvement.	The role of land resources bureau in land acquisition process is reflected in the revised ESSA
In case of grievance, affected people now have more effective ways to express their concerns, ranging from appeal to township government to write directly to county governor. As process of compensation is open and transparent, it is unlikely to have issues of under payment for land acquisition.	Noted and reflected in the revised ESSA
Since most village road improvement is directly benefit to concerned villagers, the interest of achieving agreement on land requirements is very high, Following	Noted and such understanding is reflected in the revised ESSA

consultations, the concerned villages are able to find ways to provide land required through agreement by affected individuals, allocation of reserved land, and compensation to affected individuals.	
Different county and township officials expressed strong request to begin implementation as early as possible since some identified road subprojects are waiting the fund for improvement.	Noted

Overall, the report received full concurrence and acceptance in terms of key findings and recommendations, and is considered to be highly relevant and valuable for strengthening the actual effectiveness of the implementation of the existing environmental and social system.

The participants from key stakeholders of two rounds of consultation workshops are listed as follows:

Table 6: List of Participants

Name	Agencies	Position
	Jan. 10, 2018: Consultation Meeting in Hefei City	
Wu Fei	Anhui Provincial Department of Transport	Staff
Pan Xiangjun	Anhui Highway Administration Bureau, Rural Division	Deputy Chief
Liu Bao	Lixin County Transport Bureau	Director
Song Tao	Lixin County Transport Bureau	Deputy Director
Xu Lishen	Yuexi County Transport Bureau	Deputy Director
Fang Xianhua	Linqan County Transport Bureau	Deputy Director
Zhang Jianxing	Linqan County Transport Bureau, Engineering Division	Chief
Zhang Jian	Xiaoxian County Transport Bureau	Staff
Li Shilin	Shouxian County Transport Bureau	Director
Huang Wenguang	Shouxian County Transport Bureau, Engineering Division	Chief
Tao Junkai	Shouxian County Transport Bureau, Engineering Division	Staff
Yang Zhichong	Sixian County Transport Bureau	Deputy Director
Zhu Jiaming	Hanshan County Transport Bureau	Deputy Director
Pan Meizhou	Hanshan County Environment Monitoring Station	Staff
Zhang Shangwu	Funan County Transport Bureau	Deputy Director
Fu Jie	Funan County County and Township Road Institute	Chief

	Consultation Meeting in Shucheng County Jan. 11 2018	
Wu Fei	Anhui Provincial Department of Transport	Staff
Xu Jiaoyu	Shucheng County Transport Bureau	Director
Zhu Xiaode	Shucheng County Transport Bureau	Deputy Director
Ma Chaoyang	Shucheng County Transport Bureau	Chief Engineer
Yu Shoubao	Shucheng County Environment Protection Bureau	Director
Zheng Xianting	Shucheng County Land Resources Bureau	Deputy Director
Chen Chang	Shucheng County Development and Reform Bureau	Deputy Director
Deng Wenjie	Shucheng County Water Resources Bureau	Deputy Director
Yu Youcheng	Shucheng County Safety Supervision Bureau	Deputy Director
Chu Guiyong	Nangang Township	Chief
Zhao Ping	Chunqiu Township	Chief
Huang Han	Quedian Township	Chief

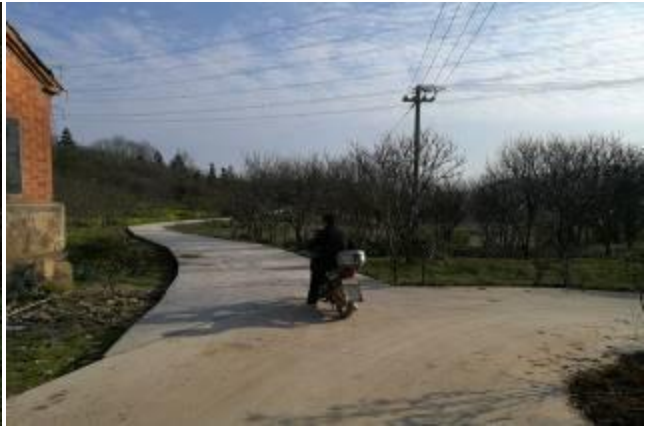
	Consultation Meeting in Dingyuan County Jan. 12 2018	
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Wu Fei	Anhui Provincial Department of Transport	Staff
Xu Jiaoyu	Dingyuan County Transport Bureau	Director
Zhu Xiaode	Dingyuan County Transport Bureau	Deputy Director
Ma Chaoyang	Dingyuan County Transport Bureau	Chief Engineer
Ye Zhongxia	Dingyuan County Environment Protection Bureau	Director
Li Cheng	Dingyuan County Land Resources Bureau, Division	Division Chief
Zhou Zhifeng	Dingyuan County Development and Reform Bureau	Deputy Director
He Zheng	Dingyuan County Water Resources Bureau	Deputy Director
Li Zhimeng	Dingyuan County Safety Supervision Bureau	Deputy Director
Jiang Kela	Sangjian Township	Chief
Zhu Xue	Yanqiao Township	Chief
Huang Yejin	Xishadian Township	Chief

Annex 2: Recently Completed Rural Roads under the Existing Government Program



Huailiulu – Dongguan, Shouxian, 2016



Nangang-Hongqiling, Shucheng, 2017



Zhaoji –Gongqiao, Funan, 2017



Dama Road, Hanshan, 2017



Yangqiao Zhongxilu, Linqun, 2017



Ruxiying Road, Lixin, 2017



Dianqian Rural Road, Yuexi, 2017



Chenyang Road, Sixian, 2017



Dangerous Bridge Renovation, Xiaoxian, 2017



Road Safety Measures, Linquan, 2017



Dangerous Bridge Renovation, Shucheng, 2014



Dangerous Bridge Renovation, Shucheng 2015