**China’s Rural Roads in the New Era**

The State Council Information Office of   
the People’s Republic of China

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Preface

China’s non-profit making rural roads constitute the most extensive component of transport infrastructure and serve a significant majority of the population. They are the primary, if not the sole transport channel in rural areas, and play a critical role in assisting the rural population in their travels, improving their wellbeing and living environment, and advancing the modernization of agriculture and rural areas.

This year marks the 75th anniversary of the founding of the People’s Republic of China (PRC). China is a vast country with diverse terrains and a large population; its natural conditions, resources and development levels vary considerably across regions. The Communist Party of China (CPC) has united and led the Chinese people in starting from scratch to build accessible, and ultimately good-quality rural roads through immense hard work. Throughout this process, the government has played a leading role while prioritizing the wellbeing of the people and implementing reform and innovative measures that consider local conditions, effectively addressing transport bottlenecks that had impeded China’s economic and social growth.

The development of rural roads in China has entered a new stage since the 18th CPC National Congress in 2012. Guided by President Xi Jinping’s instructions to further strengthen the construction, management, maintenance and operation of roads in rural areas, China has continued to drive high-quality development of rural roads through institutional innovation, better policies, systematic planning and targeted policy implementation. This has led to significant improvements in the coverage, accessibility, maintenance, services, safety, and resilience of rural roads. While broad highways connect mountains and rivers over this vast land, rural roads buttress common people’s dream of prosperity. China has explored an approach to developing rural roads in light of its realities, contributing Chinese wisdom and solutions to global poverty reduction.

The Chinese government is publishing this white paper to introduce the achievements and vision of rural road development in the new era and to share China’s experience.

I. Building Roads to Benefit Rural Areas   
and the Rural Population

In the early years of the PRC, the country was poor and backward, and rural road construction made a struggling start. After the launch of reform and opening up in 1978, support for rural road construction increased through major national initiatives, including the practice of providing employment instead of relief for those in difficulty, the Seven-year Priority Poverty Reduction Program (1994-2000), and the large-scale development of the western region. As a result, the condition of rural roads improved significantly and by 2002, the total length of rural roads had reached 1.34 million km[[1]](#footnote-0).

In 2003, the Chinese government set the goal of “constructing more and better rural roads to facilitate urbanization, and ensure that farmers have access to asphalt and cement roads”. Through an accessibility and connectivity project, more roads were built to ensure that all villages in China’s east, all townships in the central part, and all counties in the west had access to the road network. Thanks to the rapid growth achieved over a decade, the total length of rural roads increased to 3.68 million km by 2012.

Entering the new era, China has advanced high-quality rural road construction in support of the poverty eradication campaign and the rural revitalization strategy, and in service of farmers striving for moderate prosperity, meeting the goal that all towns, townships, and administrative villages where conditions allow have access to asphalt and cement roads, as well as bus and postal services.

By the end of 2023, the length of rural roads had reached 4.6 million km, accounting for 84.6 percent of the total road length in China. This safe and convenient transport network has brought about a remarkable transformation in rural areas, connecting villages and towns to the outside world and expanding bus services to villages. The ongoing development of rural roads will continue to bring benefits to China’s agriculture, rural areas and rural population.

1. People-Centered Approaches

Adhering to a people-centered philosophy of development, China has worked to see that people’s needs for quality transport is met and roads are built where they are most needed, in an effort to address the issues that directly impact the people’s most immediate interests. It emphasizes people’s collaboration, participation, and common interests, and inspires their enthusiasm, initiative, and creativity. To ensure all-inclusive and sustainable development, China promotes equal access to basic public services for both urban and rural residents. It is sparing no effort to upgrade rural roads for a high-quality road network, so that all the people can enjoy the benefits of better transport, and a greater sense of gain, fulfillment and security.

2. High-Level Planning as Part of Overall National Development

Rural road development must serve national economic growth and the country’s overall interests. Therefore, it is aligned with major national development strategies for poverty eradication, rural revitalization, and the modernization of agriculture and rural areas. China has ensured that rural roads fully play their foundational role for bolstering economic and social development in rural areas. Well-conceived plans that take into account future needs have been carefully devised, and weak points and transport bottlenecks that previously hindered progress in rural areas have been addressed. As a result, all towns, townships, and administrative villages where conditions allow now have access to asphalt and cement roads, as well as bus and postal services.

More efforts will be made so that rural roads offer improved, efficient, and diverse services and play a leading role in facilitating urban-rural integration, bridging the urban-rural gap, advancing the modernization of agriculture and rural areas, and promoting common rural prosperity.

3. Exploring Development Paths in Light of Local Conditions

China has implemented targeted measures by giving full consideration to the development stage and conditions of rural areas in different regions and of different types. It has formulated differentiated goals and implemented supportive policies to build roads for rural areas in light of the economy, industrial layout, and people’s needs for safe and convenient travels in their respective regions. The government has established flexible and well thought-out technical standards for rural roads that consider local conditions, efficient and economical land utilization, eco-environmental protection and the preservation of indigenous cultural tradition. Taking into account differences in resources, China has explored development models for rural roads in different areas, promoting the deep integration of rural roads with local industries, and tapping the strengths of local resources to extend agricultural industry chains and upgrade the industry.

4. Propelling Rural Road Construction with Reform and Innovation

China has continued to further institutional reform in the management and maintenance of rural roads, and improve systems, mechanisms and policies for rural road construction, management and maintenance, and freight and passenger transport. The goal is to establish a well-developed, well-conceived, procedure-based and effective framework of systems and institutions that coordinate the construction, management, maintenance and operation of rural roads.

The country has combined a well-functioning government with an efficient market. The government has increased its investment and mobilized non-governmental entities to address imbalances and insufficiencies in rural road development.

Focusing on high-quality development, China has invigorated rural road development through reform and innovation, fostered new quality productive forces in line with local conditions, and promoted high-quality development of rural roads to support Chinese modernization.

5. Forging Synergy for Development Through Coordination and Collaboration

In order to mobilize the enthusiasm of all parties involved, China has put in place a highly efficient mechanism for rural road management and maintenance. Led by the government, this mechanism features coordination and interaction among different departments across levels, delineating powers and responsibilities to ensure concerted efforts. Resources, capital and policies act in tandem to guarantee sufficient funding for rural road management and maintenance, especially with respect to major strategies and key areas.

The government has encouraged active and enthusiastic public participation in rural road construction and maintenance, while also leveraging the role of enterprises, public institutions, social organizations and international organizations. Creating model rural roads has been employed as an effective platform for provincial- and city-level governments to perform their coordinating and guiding roles, and for county-level governments to fulfill their primary responsibilities. All of this resulted in great synergy powering the development of rural roads.

II. Building Rural Roads Accessible   
to Every Household

Easy access to convenient roads brings happiness to the doorstep. To improve the layout of villages and townships, encourage rural economic growth, and meet the needs of rural people for safe and easy travel, China has steadily developed its rural transport infrastructure and resolved any problems encountered through hard work and perseverance. Trudging through dust and mud on dirt roads has become a thing of the past; cement roads leading to every household have made bus services available for all – a dream come true.

1. Building a Rural Road Network Connecting Villages, Towns and Townships

Over the past decade, notable achievements have been made in the construction of rural roads in China. While the total length has increased, technical standards and accessibility have also significantly improved.

**Marked increase in length**. Upgraded and newly-built rural roads have added up to over 2.5 million km over the past decade. By the end of 2023, the total length of rural roads reached 4.6 million km, an increase of 21.7 percent over 2013, enough to circle the equator 115 times. A total of 700,000 km of county roads, 1.24 million km of township roads and 2.66 million km of village roads had been built. There were a total of 530,000 highway bridges and 2,222 tunnels in rural areas. A rural transport infrastructure network in which county roads connect rural and urban areas, township roads crisscross, and village roads facilitate travel between households and farmland is in place.

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**Rising technical standard**. By the end of 2023, there were 4.45 million km of graded rural roads[[2]](#footnote-1), making up 96.8 percent of the total rural roads. Paved roads measured 4.22 million km and accounted for 91.8 percent of the total rural roads, representing an increase of 11.9 and 27.2 percentage points respectively over the past 10 years.

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**Increasing accessibility**. Where conditions are right, paved roads have been built in about 30,000 towns and townships and over 500,000 administrative villages (see Panel 1). The construction of paved roads has been gradually completed in natural villages (or household groups) with relatively large populations. They have also been built in rural tourist destinations, industrial parks, sources of resources and minerals, and other points of economic growth. This makes travel in remote areas and particularly in mountainous areas more convenient.

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| Panel 1 No Region Should Be Left Behind Because of Inadequate  Road Coverage on the Journey Towards Prosperity |
| To meet the rural people’s expectation for moderate prosperity, China has progressively connected paved roads to towns, townships and administrative villages where conditions allow. Over the past decade, China has overcome difficulties to build paved roads in 821 towns and townships and 70,600 administrative villages.  Abuluoha, a small village located in Butuo County, Liangshan Yi Autonomous Prefecture in Sichuan Province, is surrounded by mountains over 3,000 meters high on three sides and a cliff above the river on the other. As its name in the Yi language suggests, this village was “a place off the beaten path”. To leave the mountains involved a three-hour walk along the cliff. To help the villagers, a new four-km road was built. As the complex geological structure posed a great challenge for the road project, large equipment was flown in to the construction site by a heavy transport helicopter. Once the road was finished, the trip out of the mountains was reduced to a 10-minute ride.  When the road network runs deep into the mountains and across rivers, travel in rural areas is no longer a problem. Hundreds of millions of impoverished rural people have been helped out of poverty, and no region has been left behind because of inadequate road coverage on the journey towards prosperity. |

2. Achieving the Goal with Good Planning and a Progressive Approach

In order to serve the national development strategy and rural economic and social development needs, China has set well-conceived goals, tasks, and roadmaps for steady and orderly rural road development, with good planning and coordination.

**Systematic planning**. Medium- and long-term plans are the basis for the continuous and sound development of rural roads. One of the goals of the Plan for Rural Road Construction released in 2005 and the Outline of Poverty Alleviation-Oriented Transport Projects in Contiguous Poverty-Stricken Areas (2011-2020) issued in 2013 was to connect towns, townships and administrative villages where conditions allow with asphalt (cement) roads by 2020. Another was to build paved roads within these locations, a basic transport requirement in building a moderately prosperous society in all respects, and to step up road construction in impoverished areas.

The Outline for Medium- and Long-term Development of Rural Roads issued in 2021 set the goal of building a convenient and efficient trunk road network and an inclusive and equitable basic road network in rural areas, offering guidance to rural road construction and development on the new journey towards a modern socialist country. The Outline for National Territorial Space Planning (2021-2035) released in 2022 guided the design of rural roads linking industrial parks and tourist destinations, and strengthened the impact of rural roads on cultural and tourist resources and distinctive local businesses.

**Orderly construction**. China has formulated five-year development plans for rural roads under the guidance of medium- and long-term plans. Well-planned development goals and key tasks for different periods have been set (see Panel 2). To build higher-quality roads for greater connectivity, it has phased in road upgrading, road safety improvement, and networked road construction, and taken region- and category-specific measures to develop rural roads in accordance with local conditions. All of this has helped to improve rural road service capacity and standard.

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| Panel 2 Key Tasks for Rural Road Construction in Different Periods |
| The 12th Five-year Plan period: 1. Prioritizing the construction of asphalt (cement) roads in administrative villages in the western region as part of the national accessibility and connectivity project to satisfy the basic travel needs of rural people. 2. Improving rural road infrastructure, including new bridges and reconstruction of old ones, and safety improvement projects, to increase the disaster resistance and safety of rural roads. 3. Improving the rural road network, including county and township road renovation and connectivity projects, to expand the network and overall service capabilities of rural roads.  The 13th Five-year Plan period: 1. Connecting all the remaining towns, townships and administrative villages where conditions allow to paved roads in the western region, contiguous poverty-stricken areas, old revolutionary base areas, areas with large ethnic minority populations, border areas, and impoverished areas – a basic requirement for building a moderately prosperous society in all respects and development-driven poverty alleviation. 2. Further improving the sections of rural roads with shallow subgrade or surface to provide all administrative villages with bus services. 3. Connecting dissolved or merged administrative villages which still provide homes to relatively large populations to paved roads in an orderly manner; continuing to replace ferries with bridges in rural areas; and renovating and linking to the network county roads, town roads and township roads leading to rural tourist destinations, resources, industrial parks, and newly-emerged villages/towns in light of rural economic growth and local development.  The 14th Five-year Plan period: 1. Prioritizing village and rural household connectivity in more transport projects and connecting natural villages (or household groups) with relatively large populations to paved roads in light of local conditions. 2. Building two-lane roads in administrative villages and expanding overly narrow roads in rural areas. 3. Strengthening road connectivity between and within villages, coordinating the design of road sections through villages as appropriate so they also serve their function as village arteries. 4. Improving the conditions of roads leading to major economic growth points in rural areas to contribute to rural revitalization; renovating old county and township roads to improve the transport capacity and efficiency of the rural arterial road network. |

3. No Region Should Be Left Behind Because of Inadequate Road Coverage

Transport should serve the people. Meeting the people’s aspiration for a better life should always be the goal in rural road development. Coordinated and balanced development should be emphasized so that people can share the benefits of improved transport and that no region is left behind due to poor road access.

**Promoting balanced development of rural roads between regions**. China is a vast country with extensive rural areas, the level of development varying from region to region. The government has lent differentiated policy support in rural road development to the central region, western region, and deeply impoverished areas, setting different priorities and giving them preferential policies in regard to investment as more roads are built in counties that have just emerged from poverty, counties requiring government support in rural revitalization, underdeveloped areas, mountainous areas, and ethnic minority areas, reducing imbalances in rural road development between regions.

**Narrowing the gap between rural and urban roads**. China has steadily improved rural road quality, launching projects to harden road surfacing, renovate roads with a shallow subgrade or surface, build Grade III roads in towns and townships and two-lane roads in administrative villages, connect towns and townships to county and provincial arterial roads, and renovate old county and township roads. These efforts have improved the basic and trunk road networks in rural areas, gradually narrowing the gap between rural and urban roads.

**Ensuring transport accessibility in far-flung mountainous areas.** Replacing zip lines with bridges and building new roads can open the door to prosperity for people living deep in the mountains. To guarantee safe travel for people living in remote mountainous areas, China channeled special funds to replace zip lines with bridges, significantly improving these regions’ access to the outside world after three years’ hard work (see Panel 3). It has stepped up the effort to build rural roads for regions inhabited by ethnic groups skipping development stages to directly enter socialist society in Yunnan Province and by ethnic groups with smaller populations, breaking the transport bottleneck for them and accelerating their progress out of poverty and towards prosperity.

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| Panel 3 Replacing Zip Lines with Bridges |
| A zip line is a steel cable or thick rope hung with a height difference above a river or valley to send people, goods or livestock from one side to the other. People living in remote mountainous areas crossed by rapid rivers resorted to zip lines rather than long mountain treks, despite the security risks and low transport efficiency.  Transport infrastructure construction plays a key role in development, particularly in some impoverished areas, as replacing zip lines with bridges or building new roads in these regions will open the door to prosperity for impoverished people. To decommission zip lines and improve local travel conditions, the Ministry of Transport and the Office of Poverty Alleviation and Development of the State Council formulated and implemented the Plan for Replacing Zip Lines with Bridges (2013-2015). All zip lines in the remote mountainous areas in seven provinces and autonomous regions – Yunnan, Sichuan, Guizhou, Shaanxi, Gansu, Qinghai and Xinjiang – have been transformed into safe and reliable pedestrian or vehicular bridges. A total of 309 such projects have been completed in these areas, complete with about 900 km of connection roads to benefit 960,000 people (including 660,000 living in poverty) across 904 administrative villages.  This project has effectively improved these areas’ access to the outside world, and increased travel safety and convenience. Gone are the days when local residents had to resort to zip lines to travel around; they are now enjoying their new life with easy transport across bridges. |

4. Pursuing Green Development of Rural Roads Guided by Policy Measures and Technical Standards

Guided by policy measures and technical standards and with strengthened supervision, China aims to pursue green development of safe, durable and high-quality rural roads.

**Strengthening institutional guarantee**. Regulation systems offer a legal framework for rural road development. Departmental regulations and policies such as Administrative Measures for Rural Road Construction, Administrative Measures for Rural Road Quality, and Instructions on Improving the Quality and Durability of Rural Road Engineering have been rolled out to provide an effective institutional guarantee for the whole process of construction from responsibility assignment, project planning, fund raising, and road building, to quality control, safety management and check and acceptance.

**Meeting technical standards**. To bring rural roads up to standard under the guidance of Technical Standard of Highway Engineering and Technical Standard of Low Volume Rural Highway Engineering, China has strictly followed industry standards or local construction standards in terms of choice of technical grade, traffic volume, design speed, routes, subgrade, road surface, and safety facilities, while giving consideration to different topographic and geomorphic conditions. The width of rural roads is generally at least 4.5 meters, and over 87 percent of them have a high-grade surface (asphalt or cement).

**Ensuring durability.** China prioritizes quality in rural road construction, embracing the concept of whole-process quality and safety management, and enforcing systems directing legal person accountability, tenders and bids, project supervision, and contract management. Rural road projects are delivered in strict accordance with the construction blueprints, and any jerry-building is investigated and punished. Vocational training and technical guidance have been intensified for construction workers to improve quality control. Quality inspection has been strengthened by launching annual sampling inspection on rural roads and giving particular attention to quality supervision of road safety facilities. A lifelong accountability system for road quality has been put in place.

China has strengthened supervision and evaluation of project quality and made information available to the public regarding construction plans, subsidy policies, tenders and bids, construction management, quality supervision, use of funds, and project inspection and acceptance. It has established a credit evaluation mechanism focusing on road quality, and the credit is referred to in market access, tenders and bids, and industry supervision.

**Seeking green development.** Lucid waters and lush mountains are invaluable assets. China upholds and acts on a vision of healthy, sustainable, and green development, building green rural roads which are resource-saving, environment-friendly, energy-efficient, and provide quality service. It sticks to economical and intensive use of resources and strictly protects land resources. Great efforts have been made in recycling waste and scrap. It has adopted environment-friendly designs and enforced the red lines for eco-environmental conservation to ensure harmony between roadscapes and nature. Life-cycle cost analysis is observed in standardized construction. Charging facilities, service stations, and roadside scenic lookouts are built depending on local conditions to provide people with green and convenient travel experience.

III. More Coordinated, Standardized and   
Efficient Rural Road Governance

Effective rural road governance means not only building good roads but also ensuring their proper management. Based on the current situation and with a long-term perspective, China has accurately grasped the principles, trends, and characteristics of rural road development, and established robust systems, mechanisms, policies, and regulations, continuously enhancing its governance capacity of rural roads.

1. Building a Complete System of Laws, Regulations and Policies

China is committed to improving the effectiveness of its governance and management. It adopts a problem-oriented approach to furthering reform of rural road management systems and mechanisms. By strengthening legal and policy frameworks and ensuring adequate allocation of key factors, it has gradually established a robust governance system for rural roads.

**Improved laws and regulations.** China attaches great importance to legislative work on rural roads and has promulgated a series of relevant laws, regulations, and policies. The Highway Law of the People’s Republic of China, enacted in 1997, and subsequently amended five times, regulates the planning, construction, maintenance, operation, use, and management of roads, including county and township roads.

In 2011, the Regulations on the Administration of Highway Safety were promulgated, clarifying the work of law enforcement patrols, illegal construction clearance, and the management of vehicles with out-of-gauge goods and/or overloaded vehicles. Currently, China is actively promoting the formulation of the Regulations on Rural Roads. All provinces and equivalent administrative units nationwide have promulgated local road or rural road regulations. Departmental regulations such as the Administrative Measures for Rural Road Maintenance and the Provisions on the Administration of Road Passenger Transport and Passenger Stations have also been promulgated. A legal system for rural roads has been formed, with national laws as the base, administrative regulations as the spine, and local and departmental regulations as support.

**Refined policies and systems.** China has issued over 20 policy documents, including the Guiding Opinions on Promoting the High-Quality Development of Rural Roads in Their Construction, Management, Maintenance and Operation, and established a policy and institutional system that addresses systemic, organizational, supervisory, funding, evaluation, and service aspects of rural road management.

Placing a strong emphasis on accountability, it has issued the Opinions on Deepening Reform of the Management and Maintenance System for Rural Roads, stipulating that provincial and municipal governments should strengthen overall planning, guidance and supervision, and county-level governments should fulfill their primary responsibilities. A detailed list of powers and responsibilities over the management and maintenance of rural roads has been established for relevant departments at the county level and township governments, forming a collaborative working dynamic ensuring close coordination and joint efforts at all levels.

A road chief system for rural roads (see Panel 4) has been implemented, designating county, township-level administrative heads and village (neighborhood) committee heads as road chiefs to ensure cross-departmental coordination, thereby promoting the efficient implementation of the government’s primary responsibilities, and gradually transforming rural road management from an extensive, passive, and fragmented approach to an intensive, proactive, and collaborative one.

2. Developing a Diversified Funding Mechanism

The development of rural roads relies heavily on funding, particularly from the central and local governments, whose fiscal contributions are essential to ensuring the rapid development of China’s rural roads. Governments at all levels have maintained close coordination and a unified approach, gradually establishing a rural road funding mechanism characterized by government leadership, tiered responsibilities, diverse funding sources, and procedure-based and efficient management. This approach has effectively addressed the challenges of securing adequate funding for rural road projects.

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| Panel 4 Road Chief System for Rural Roads |
| To strengthen government accountability, and especially to cement the primary responsibilities of county-level governments, China has established a road chief system for rural roads.  In 2020, the Chinese government issued the Notice on Comprehensively Implementing the Road Chief System for Rural Roads. In accordance with the principle of government-led and locally managed governance, it has established a “1+3” road chief system. This system consists of a principal road chief at the county level, typically held by top leader of the county people’s government, and road chiefs at the county, township, and village levels, respectively held by heads of the county, township, and village committee. Under this system, all road chiefs ultimately report to the principal road chief, and road chiefs at lower levels are accountable to road chiefs at higher levels. Road chiefs at all levels are responsible for advancing rural road infrastructure construction, carrying out rural road management and maintenance, improving transport services, addressing hidden road hazards, strengthening eco-environmental protection, strengthening traffic safety management, etc.  The implementation of this system for rural roads has optimized the management of rural roads at the county, township, and village levels, thereby addressing the “last-mile” problem of rural road governance. As of the end of 2023, a total of 680,000 road chiefs at various levels had been appointed, with all county-level administrative units with rural road management responsibilities operating the road chief system. |

**Clarifying the fiscal powers and expenditure responsibilities for rural roads.** Reforms have been introduced to divide fiscal powers and spending responsibilities between central and local governments in the transport sector, with rural roads explicitly designated as a local fiscal power. By refining and specifying the fiscal powers and spending responsibilities of governments at all levels regarding rural roads, China has addressed the long-standing ambiguity surrounding these fiscal responsibilities. To support local governments facing funding gaps in fulfilling their fiscal powers and expenditure responsibilities for rural roads, higher-level governments will provide financial support based on evolving development goals.

**Increased financial support from governments at all levels.** Government funding plays a crucial role in the construction and maintenance of rural roads. The central government has allocated funds through various channels, including the vehicle purchase tax revenue, central budgetary investment, and transfer payments from the reform of taxes and fees related to refined oil products. Provincial, municipal, and county governments have also increased their financial support to rural road development. Local governments have incorporated the operating expenses and basic personnel costs of rural road management agencies into their general public budgets and have prioritized rural road development in their general bond issuance plans. A minimum annual maintenance funding standard of RMB10,000 per kilometer for county roads, RMB5,000 per kilometer for township roads, and RMB3,000 per kilometer for village roads has been implemented. The central government has also provided guidance to local governments to maximize the effective use of rural passenger transport subsidy funds. Over the past decade, a cumulative investment of RMB4.3 trillion has been made in rural road fixed assets, and RMB1.1 trillion has been invested in maintenance, with approximately 80 percent of the total funding in either category coming from the government. The central government contributes RMB8.9 billion annually in subsidies for rural passenger transport.

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**Expanding financing channels through diverse market-based methods.** China has fully leveraged the critical role of market-based financing mechanisms in rural road development and actively expanded financing channels. In line with local conditions, all localities have developed innovative “rural road plus” investment and financing models by integrating rural roads with commercial projects in relation to industries, industrial parks, rural tourism, and other economic activities (see Panel 5). To support rural road maintenance, the government has incorporated road management and maintenance in the procurement services guidance catalog and explored mechanisms such as disaster insurance for rural roads. It has also encouraged various financial institutions to increase their support for eligible rural road construction projects within the bounds of laws and regulations. Over the past decade, approximately RMB800 billion in credit funds from various financial institutions have been allocated to rural road development nationwide.

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| Panel 5 Innovative Financing Methods for Rural Road  Construction and Maintenance |
| Local governments have been actively exploring innovative mechanisms for financing rural road construction and maintenance, alleviating the problem of funding shortages to a certain extent.  Yong’an City in Fujian Province has pioneered the “Fulu Loan” financing model. To proactively obtain policy-based financial support, the city has integrated rural road construction with the development of supporting facilities, industrial parks, and tourist attractions in ancient towns. The comprehensive revenues generated from these projects have been used as a source for loan repayment, ensuring timely debt servicing and expanding funding sources for rural road construction.  Lishui City in Zhejiang Province has been at the forefront of exploring disaster insurance mechanisms for rural roads in mountainous areas. As a result, the funding availability rate for rural road repairs in the city significantly increased from 27 percent during the 12th Five-year Plan period to 96 percent during the 13th Five-year Plan period, greatly increasing the resilience and emergency response capabilities of rural roads.  Hanzhong City in Shaanxi Province has made extensive efforts to secure funds from various levels of government and through bond issuance. The city supports rural road construction and maintenance through various means, including providing financial subsidies and implementing a pay-after-maintenance approach. In addition, it has actively explored market-oriented mechanisms such as integrating transport and tourism, joint investment promotion for transport and tourism projects, and developing a “rural roads derivative economy”. These initiatives have effectively aligned projects with funding, addressing the challenges of self-financing. |

**Strengthening oversight and efficiency in the use of rural road development funds.** China has improved the transfer payment system for subsidies to local governments from the vehicle purchase tax revenue, as subsidies for rural road construction are now provided as a type of rewards for good local performance (see Panel 6). All public funds allocated to rural roads are subject to full-cycle budget performance management, ensuring efficient utilization of rural road funds.China has strengthened oversight over the use and management of rural road funds. A responsibility system has been established to ensure accountability for those who apply for funds and those who use them, guaranteeing the full and actual disbursement of funds. Relevant information is disclosed in accordance with applicable regulations for public oversight. China has also intensified debt risk prevention and control for rural road projects, ensuring that debt financing is raised in accordance with laws and regulations.

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| Panel 6 Vehicle Purchase Tax Revenue Is Provided for Rural Road  Construction on a Performance Basis |
| Allocating vehicle purchase tax revenue to support rural road construction is a key component of the central government’s funding for rural road development. In 2021, to further strengthen the management of local funds subsidized by vehicle purchase tax revenue and improve the efficiency of fund utilization, the Ministry of Finance and the Ministry of Transport jointly issued the Interim Measures for the Management of Local Funds Subsidized by Vehicle Purchase Tax Revenue, making the funds available to local governments for rural road construction based on their performance.  Under this model, a portion of the annual vehicle purchase tax revenue is initially allocated as a prepayment, with the remaining funds disbursed after final settlement. The final amount is based on each province’s performance in achieving the previous year’s goals, including the completion of construction and maintenance tasks, as well as local fiscal contributions.  This policy emphasizes performance by integrating comprehensive budget performance management throughout the entire process of fund management. It effectively leverages central government funds and establishes a long-term mechanism for sound rural road development by local governments. |

3. Increasing Governance Efficiency Through Digital Transformation

Digitalization helps improve governance capacity for rural roads. By adhering to the principles of comprehensive planning, demand-driven development, collaboration and sharing, and safe and applicable technology, China has promoted digital transformation across the entire lifecycle of rural roads, including construction, management, maintenance, operation, and services. This transformation has supported the development of a modern rural transport system.

**Solidifying the digital foundation for rural roads.** China has implemented a series of statistical survey systems, including the Rural Road Infrastructure Statistics Survey System, the Road Maintenance Statistics Survey System, and the Road Transport Statistics Survey System. Through regular monitoring and data collection, it has established a comprehensive infrastructure database, enabling the online management and monitoring of all processes related to rural road construction, management, maintenance, and operation. As a result, statistical surveying, monitoring and management of rural roads have been improved through a digital and smart transformation. It has also initiated a “one road, one file” information system for rural roads, ensuring that basic data for each road can easily be found online. This initiative has enabled integrated management for rural roads.

**Expanding digital application in rural road management.** By combining basic data with information on technical conditions, maintenance operations, funds allocation, emergency dispatch, the road chief system operations, statistical management, and travel services, China has facilitated information interconnectivity and sharing. It has applied advanced information technologies such as the Internet of Things, satellite remote sensing, cloud computing, and artificial intelligence (AI) in rural road management. Through active exploration of application scenarios such as AI-powered automated inspections, unmanned aerial vehicle inspections, intelligent road network monitoring, intelligent maintenance, intelligent disaster early warning, and big data-driven decision-making and analysis in rural road management, China has steadily increased the digitalization level of rural roads.

4. Driving Overall Improvement Through Demonstration and Pilot Programs

By establishing demonstration projects, conducting pilot programs, and building business brands, China has facilitated the creation of leading models that drive the overall development of rural roads.

**Promoting demonstration projects.** To encourage best practices and innovation, China has organized various demonstration programs, including the creation of national model counties for high-quality rural roads that are properly built, managed, maintained, and operated and model counties for rural-urban transport integration (see Panel 7). Since 2018, it has designated 545 counties as national model counties for high-quality rural roads and 102 for integrated rural-urban transport. It has intensified its efforts in documenting and rolling out successful models, resulting in the creation of over 100 exemplary cases and 150 rural logistics service brands in areas such as the road chief system, information technology applications, financing, integration of transport and tourism, integration of passenger, freight, and postal services, and the promotion of common prosperity.

**Intensifying pilot programs.** Pilot programs serve as an essential tool in exploring development paths and increasing management efficiency. In alignment with the goal of building up its strength in transport, China has launched 15 special pilot programs for high-quality rural roads. These pilots explore new paths for the high-quality development of rural roads in different regions and sectors, covering aspects such as policy measures, systems and mechanisms, technological innovation, integrated development, and disaster insurance. It has identified 167 government agencies in piloting reform of the management and maintenance systems of rural roads. These agencies focus on eight key areas: the road chief system, innovative maintenance models, IT-based management, beautiful rural roads, financial guarantees, innovative investment and financing mechanisms, credit rating mechanisms, and government performance evaluation. The goals are to fulfill rural road management responsibilities, improve management mechanisms, and create innovative management models.

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| Panel 7 Creating Demonstration Models |
| China has launched initiatives encouraging the creation of model counties for high-quality rural roads that are properly built, managed, maintained, and operated and model counties for rural-urban transport integration. By using these examples to set benchmarks and inspire others, it has effectively promoted the high-quality development of rural roads and comprehensively raised the overall level of rural-urban transport integration.  These demonstration projects have focused on strengthening governance capacity, improving infrastructure networks, enhancing comprehensive transport services, fulfilling responsibilities in guaranteeing effective management and maintenance, raising safety assurance, and promoting integrated development. County-level government agencies have been guided to create demonstration models to promote the high-quality development of rural roads in their localities and comprehensively improve the integration of rural-urban transport.  These efforts have resulted in a significant number of model counties boasting solid development foundations, outstanding achievements and replicable experience. As more and more counties endeavor to catch up with the model counties, the momentum effectively serves to support the comprehensive implementation of the rural revitalization strategy. |

IV. Safer, More Durable,   
and More Comfortable Rural Roads

Understanding that both construction and maintenance are essential for road development, China engages in scientific and comprehensive maintenance of rural roads. By improving road conditions, ensuring transport safety, and carrying out roadside greening and beautification programs, the country has seen a steady improvement in the maintenance efficiency of its rural roads and a growth in their service capacity.

1. Creating a Beautiful Environment for Smooth, Safe and Comfortable Travel

The effective maintenance of China’s rural roads has brought marked improvements to road conditions, transport safety, and the road environment, enabling smoother, safer, and more comfortable travel.

**Realizing a significant improvement in road conditions.** China has increased investment in rural road maintenance and ensured regular maintenance across the board. It has also launched major maintenance projects for rural roads, accounting for more than 5 percent of rural maintenance mileage annually.

Over the past decade, a total of 1.84 million km of rural roads have been repaired and maintained, raising the proportion of rural roads classified as premier, good, and medium[[3]](#footnote-2) from 79 percent to 91.1 percent, essentially realizing full coverage and guaranteeing quality of maintenance.

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**Achieving a greater capacity for transport safety.** China has improved its rural road infrastructure, identified and removed safety hazards, and strengthened transport safety management, achieving greater inherent consistent safety and enabling a better emergency response for rural road transport.

In 2023, the number of rural road traffic accidents with a death toll of more than three dropped by 36.5 percent from the 2013 figure, and the number of accidents with a death toll of more than 10 fell by 85.7 percent.

**Making continuous progress in optimizing the road environment.** China has taken comprehensive measures to make rural roads tidy, green and beautiful. In total, 990,000 km of roads have been separated from farmlands and 620,000 km of roads have been separated from residential housing, making these rural roads more neat and pleasant.

2. Promoting Standard and Professional Road Maintenance

A well-functioning rural road network relies 30 percent on construction and 70 percent on maintenance. To ensure intact facilities and smooth traffic for rural roads, China has improved the technical framework for maintenance, developed advanced and applicable maintenance technologies, and raised maintenance efficiency.

**Promoting scientific decision-making for road maintenance.** China has integrated scientific decision-making into the entire process of rural road maintenance, optimal comprehensive benefits throughout the full lifecycle of roads. Based on technical condition assessment of roads, maintenance needs analysis, and maintenance planning, and leveraging technical, economic, safety and environmental considerations, the country makes informed decisions on its maintenance projects, thus providing a structured framework for its rural road maintenance work.

To promote the automatic examination of rural road conditions, China has applied R&D efforts to automatic vehicles and portable devices, and applied big data and AI technologies to automatic examination in the process of road maintenance inspection, road administration inspection, and passenger and freight transport. The automation rate of road surface condition examination reached 70 percent in 2023. Analysis and application of data collected from road condition examination has also been strengthened to support scientific decision-making, leading to more refined and precise maintenance of rural roads.

**Standardizing road maintenance operations.** China has promulgated a range of technical standards and specifications, including Technical Specifications for Maintenance of Rural Highway, Standards for Rural Highway Condition Assessment, and Budget Compilation Method for Rural Road Maintenance.

To keep rural roads in good condition, the government has strengthened regular maintenance by carrying out routine inspections, daily upkeep operations, and necessary minor repairs. Special emphasis is given to preventative maintenance, with structured maintenance projects in place, which effectively extend the service life of rural roads. Repair maintenance has been implemented through professional design and targeted measures. Specialized maintenance has been improved, allowing quicker upgrading or restoration of services. Emergency maintenance has been prioritized, enabling the quickest possible resumption of safe travel in emergencies resulting in road damage, traffic disruptions, or major transport safety hazards.

**Creating diverse organizational models of road maintenance.** China has systematically advanced market-oriented reform of rural road maintenance and taken steps to develop a rational division of work between the government and the market in organizing road maintenance. This has made maintenance operations more structured, standardized and efficient.

Preventative and repair maintenance projects are allocated through bidding and tendering, recruiting professional teams to provide specialized maintenance services.

Novel organizational models of rural road maintenance are encouraged, such as combined tendering for the construction and maintenance of trunk highways and rural roads, overall contracting for zonal maintenance of rural roads, and combined tendering for rural road construction and maintenance.

Regular maintenance combines general and professional maintenance. Residents along the routes are actively involved through technical training to build stable teams for general maintenance.

**Applying new technologies, techniques, materials and equipment.** Application of these four elements plays a significant role in raising road maintenance quality, extending road service life, reducing maintenance costs, and facilitating sustainable development of the road transport industry.

New techniques for road maintenance have been employed, such as cold in-place recycling of asphalt pavement, hot central plant recycling of asphalt pavement, and rubblization for an asphalt overlay of cement pavement. New technologies for waste recycling have been applied, covering discarded pavement materials, worn-out tires, solid industrial waste, and construction waste. New materials have been applied in road safety facilities, including lightweight high-strength steel. New equipment has been introduced, such as new paver models and small pavement crack filling machines. These new applications have produced significant results in reducing costs, shortening project duration, conserving energy, and protecting the environment.

3. Prioritizing Transport Safety

China has redoubled its efforts to address rural road safety hazards and improve safety infrastructure, ensuring safe and easy travel and providing reliable and smooth transport.

**Strengthening safety facilities.** China enforces a system for synchronizing the design, construction and commissioning of road safety facilities with the road construction project. Solid actions have been taken to further refine the management of rural road safety facilities and traffic order.

To address rural road safety hazards, the country has launched and refined a project for travel safety and a pilot project for greater coverage of traffic lights and speed bumps. Over the past decade, the rural road travel safety project has covered a total road length of 1.23 million km, and consistent improvement has been made in safety facilities, including road signs, pavement markings, speed bumps, and traffic lights, ensuring a rising level of rural road safety.

**Renovating old and dangerous bridges.** Bridges are key constructions in transport networks. Renovation of old and dangerous bridges underpins safe bridge operations for smooth rural road transport.

China has strengthened bridge management and regular safety inspection for key bridges, and implemented the 10 regulations for bridge operation safety, including strict accountability, information disclosure, and funding guarantees. It has also carried out special programs on highway bridge guardrail safety, single-column pier bridge safety, and standardization of bridge information and bridge load limit signs for rural road transport.

Over the past decade, a total of 58,000 old and dangerous bridges in the rural road network have been renovated; the total number of dangerous bridges has decreased on a yearly basis; the proportion of Grade I, II and III bridges[[4]](#footnote-3) has increased from 83.2 percent to 98 percent; and the durability of rural highway bridges has been consistently improved.

4. Improving Road Network Resilience for Greater Reliability

Putting people and lives first, and coordinating high-quality development and high-level safety, China has improved disaster readiness and mitigation for rural road transport, and strengthened safety resilience and emergency response for the rural road network in order to ensure effective protection of lives and property.

**Increasing emergency preparation.** China has a vast territory and a complex terrain with countless rivers and mountains prone to floods and geological disasters. Disaster readiness and mitigation are not only emergency measures for the country but also its long-term priorities.

China has promulgated the Guidelines on Further Improving Disaster Readiness and Mitigation for Rural Road Transport and strengthened the public emergency management mechanisms for rural roads, ensuring better response to public emergencies, road safety incidents, and natural disasters.

Building upon the national equipment and material reserve centers for highway emergency response in different regions, China has made progress in establishing local reserve centers for highway emergency response supplies. As a result, a highway emergency reserve system is taking shape, characterized by well-designed distribution, a full range of supplies, and quick response.

China has carried out systematic expansion and renovation of rural road management stations and maintenance squads, improving their reserve functions for emergency response equipment, supplies and devices.

China has built up rural road emergency rescue forces composed of both professionals and the general public, and boosted their emergency response capabilities by intensifying drills for contingency plans, improving personnel training, and increasing transport capacity.

**Strengthening road safety inspection.** To identify and remove safety hazards for rural road transport, China has strengthened targeted inspections on key road sections during critical time periods in addition to regular inspection on all road sections.

Categorized, graded and specialized measures are in place for natural disaster response. In preparation for imminent floods, typhoons, and other severe weather, drainage facilities including side ditches and drainage ditches are cleared in a timely manner. Intensified inspections are carried out on key road sections such as those with high slopes, sharp turns, steep gradients, proximity to cliffs, water bodies or other dangers, natural disaster risks, and historical damage from disasters. Essential precaution projects are implemented where necessary.

Under severe weather, such as low temperatures, rain, snow, and freezing conditions, targeted inspections are carried out on key road sections prone to snow accumulation or ice formation; preemptive measures such as spreading anti-skid materials, deicing agents, and snow-melting agents are employed, and ice and snow are removed to prevent accumulation; and safety reminders, preventive alerts, and warning signs are better used to ensure a smooth road network.

**Ensuring road access for emergency response.** China has strengthened safety monitoring, early warning, and traffic dispatch for its rural road network, providing dynamic information on weather changes and early warning on disasters, and activating timely preparatory or emergency response.

The country has put in place a coordinated early warning and response mechanism and a direct warning mechanism for prompt frontline response to imminent disasters, making onsite emergency preparation and evacuation more effective. Emergency routes are opened up in a timely manner to ensure safe and smooth transport of rescue personnel and equipment. To ensure safe traffic and orderly living and working conditions after disasters, the government has organized efficient emergency road repairs, increased financial support, and facilitated post-disaster recovery and reconstruction.

V. Smooth and Convenient Passenger and   
Freight Transport in Rural Areas

Dedicated to meeting people’s growing desire for a better life, the Chinese government spares no effort in expanding the coverage of passenger and freight transport in rural areas and providing equitable access to transport services in both urban and rural areas. By doing so, it delivers smooth movement of people and goods, equal exchanges of production factors, and balanced allocation of public resources between urban and rural areas.

1. Making Travel More Convenient for Rural People

The Chinese government treats rural passenger transport as a core element of public services, and continues to improve it with the focus on ensuring equitable access, optimizing supply models, and establishing long-term mechanisms.

**Providing all villages with access to bus services.** To ensure easy access to bus services for every rural resident, local authorities have put in place extensive rural passenger transport networks that provide full coverage and connect urban and rural areas, with county seats as hubs, towns and townships as nodes, and administrative villages as terminuses. Adapted to local conditions, multiple models have been adopted, including regular buses (both gasoline and electric vehicles), shuttle buses, localized services, and booking-based operations. Connections between rural areas and between urban and rural areas have thus become closer. In the past decade, more than 1,100 towns and townships and 45,000 administrative villages have been newly integrated into the networks. As a result, all towns, townships and administrative villages where conditions allow have access to bus services.

**Improving policies for sustainable development.** Meeting a variety of travel needs, public passenger transport services in rural areas have extensive coverage and high operating costs. To ensure sustainability, a subsidy system has been established for vehicle purchase, platform development, and transport operations. New models have also been explored, such as promoting government purchase of services and providing subsidies on a performance basis. To ensure both service quality and cost efficiency in areas with low passenger volumes, flexible models adapted to local travel needs have been adopted, such as localized and booking-based operations.

**Raising the quality of passenger transport services.** To best meet rural residents’ group-specific, periodic, and seasonal travel needs, innovative operational models of rural passenger transport have been devised. These include providing special services in busy periods for school commuting, for spring plowing, for fall harvesting, for trips to local fairs, and for tourism. In areas with a higher level of urbanization, bus lines have been extended into rural areas, and rural shuttle lines have been transformed into bus lines, to give urban and rural areas more equitable access to passenger transport services.

Real-time monitoring devices have been installed on public passenger vehicles, and information systems have been built based on local conditions. Therefore, the accuracy and safety of rural passenger transport services have increased. Vehicle conditions have also improved notably. By the end of 2023, a total of 342,000 rural passenger vehicles were in service, with a steady increase in the proportion of new energy vehicles and middle- and high-range vehicles. Efficient, convenient and affordable rural passenger transport services have won public praise.

2. Expediting Logistics for Rural Areas

Through building nodes, expanding networks, and improving services, the government has exerted full efforts to shore up weaknesses and remove bottlenecks in rural logistics. Transport channels have been further widened for the two-way flow of goods between urban and rural areas, and to give villages access to e-commerce and express delivery, adding new momentum to the modernization of agriculture and rural areas.

**Building nodes on rural logistics networks.** China is working to coordinate logistics development in urban and rural areas, and increase financial support for building rural logistics nodes. By the end of 2023, local authorities had built 1,267 county-level delivery centers, making use of passenger and freight hubs, mail and delivery processing sites, the storage and logistics facilities of supply and marketing cooperatives, and e-commerce warehouses; they had also built 289,000 comprehensive delivery and logistics service stations in villages by utilizing local facilities and resources for postal services, courier delivery, supply and marketing, and e-commerce. The urban-rural framework of logistics service facilities has been improved, promoting smooth and efficient logistics between urban and rural areas.

**Creating innovative rural logistics service models.** China has further integrated the development of rural logistics, passenger transport, postal services, and commerce. Special rural logistics service models have been tailored to local conditions, to raise the integration of rural logistics resources. To date, a total of 150 rural logistics brands have been created in steps, and new rural logistics service models have emerged, including the integration of passenger and freight transport networks, Online Freight Platforms Plus Rural Logistics, Local Industries Plus Rural Logistics, and E-commerce Plus Rural Logistics. These have spurred a rise in the comprehensive service capacity of rural logistics.

3. Achieving Greater Balance in Urban and Rural Transport

Coordinated measures have been taken to balance transport development across urban and rural areas. They have driven equitable access to transport services, expedited the flow of people and goods between urban and rural areas, and added new momentum to the development of county economies.

**Optimizing the institutional framework for urban and rural transport development.** As part of its well-conceived top-level design, China has issued the Guidelines on Steadily Advancing the Integration of Urban and Rural Transport and Improving Basic Public Services. The goal is to speed up the integration of urban and rural transport infrastructure, of urban and rural passenger transport, and of urban and rural freight transport and logistics, and create a favorable environment for the integration of urban and rural transport. China has established evaluation mechanisms, conducted annual evaluations, and subsequently taken targeted measures to promote the integration of urban and rural transport. The evaluations show that 93.6 percent of county-level administrative units have reached a good or even excellent level of urban-rural transport integration.

**Strengthening connections between urban and rural transport networks.** Urban and rural passenger transport networks have been integrated with key railway stations, airports and ferry terminals for easy connections and transfers, helping to improve the overall operation of urban and rural transport networks. To meet the development needs of agricultural industries, integrated urban and rural logistics delivery services have been realized. Based on the characteristics of rural industries, China has pressed ahead with the development of professional and comprehensive urban-rural logistics systems, particularly those for e-commerce, specialized delivery, and cold-chain delivery, to ensure more efficient flows of agricultural products. In an effort to integrate urban and rural transport services on the basis of the Urban-Rural Transport Plus paradigm, China has strengthened the integration of transport resources, promoted cross-sector integrated development, and advanced the coordinated development of roads, stations, passenger transport, freight transport, and mail delivery.

**Accelerating the integration of rural passenger transport, freight transport, and mail delivery.** To achieve sustainable operation of rural passenger transport, ensure rural access to delivery services, and coordinate the access of agricultural products to urban markets, the Chinese government has released the Guidelines on Accelerating the Integrated Development of Passenger Transport, Freight Transport, and Mail Delivery in Rural Areas. Following the principle of letting the government play a guiding role and the market a dominant role, China has further promoted the co-building and sharing of the operational mechanisms, infrastructure, lines and information, and strengthened the coordinated utilization of resources, in order to promote the integrated development of rural passenger transport, freight transport, and mail delivery (see Panel 8).

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| Panel 8 Accelerating the Integration of Passenger Transport,  Freight Transport, and Mail Delivery to Boost Rural Industries |
| Since it started integrating rural passenger transport, freight transport, and mail delivery, Miluo, a county-level city in Hunan Province, has coordinated resources including shops, supermarkets, postal services, delivery networks, and supply and marketing cooperatives, and built a city-level operation center and a mail-sorting center relying on its citywide bus service system to integrate passenger transport, freight transport, and mail delivery. It has developed its own information and dispatch system for coordinating the three services, established a special guiding fund, and put in place a high-efficiency system that shares resources across all these services. The average number of daily mail and packages has surpassed 40,000.  Through coordinating these integrated services with e-commerce, Miluo has moved faster to develop rural products and industries, driving the business of agricultural specialties and enabling integrated services to better support the rural revitalization strategy. In 2023, the rural passenger transport, freight transport, and mail delivery system contributed additional sales volume of about RMB50 million, directly creating an income of nearly RMB8 million for the rural population. |

By the end of 2023, all provincial-level administrative units and more than 70 percent of cities at or above the prefectural level had established joint working mechanisms in which transport, postal, commerce, and supply and marketing departments are all participants. They had opened more than 11,000 integrated passenger, freight and mail lines, and built more than 90,000 service stations at county, township and village levels, establishing standard models such as “passenger transport vehicles carrying mail” and “freight and mail sharing the same networks”. These have effectively consolidated rural access to bus services, and markedly lowered the costs and increased the efficiency of rural logistics and mail delivery, providing impetus for the vigorous development of rural e-commerce and industries.

VI. Interconnected Roads Bring   
Prosperity to All Industries, and Help Improve People’s Lives and the Environment   
in Rural Areas

Rural roads help to connect beautiful scenery, drive the development of local industries, grow the local economy, and benefit the local people. The construction and development of rural roads provides strong support for the comprehensive development of the rural economy and society, and lays the groundwork for advancing all-round rural revitalization and accelerating agricultural and rural modernization.

1. Creating a Path to Prosperity for Rural People

“If you want to become better-off, build a road.” Guided by poverty alleviation programs and policies, China has taken extraordinary steps and made an enormous effort to expedite the development of rural transport in poor areas. Since 2014, more than 1.4 million km of rural roads have been built or upgraded in previously poor areas, and more than 45,000 towns, townships and administrative villages have joined the list with access to bus services. All towns, townships and administrative villages where conditions allow had been connected to paved roads by 2019, and all such villages had been connected to bus services by 2020, fulfilling the promise that no region would be left behind because of inadequate road coverage on the journey towards prosperity. Better transport has cleared the bottlenecks that had long delayed economic and social development in poor areas, and has laid a solid foundation for rural people to realize moderate prosperity in all respects.

The steady improvement of transport facilities in rural areas has attracted more capital, projects and talent to the countryside, creating more job opportunities and broadening the avenues for income growth. In order to expand employment channels further, and help rural people to find jobs close to their homes and boost their incomes, local governments have encouraged disadvantaged people to work on rural road construction projects (see Panel 9) and developed public welfare posts in rural road maintenance. At present, rural road construction projects provide work for about 80,000 people in need as a form of relief, enabling an annual average per capita income increase of around RMB8,500; and about 850,000 jobs are provided in rural road management and maintenance, offering an annual average per capita income of approximately RMB13,000.

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| Panel 9 Promoting Work Relief Programs in Rural Road  Construction and Maintenance |
| Work-relief programs are a policy measure for people in need to earn an income from working on government-funded infrastructure projects instead of receiving direct relief. The main goals are to provide wages to them through employment, offer them skills training, and help them find jobs in places close to their homes and boost their incomes.  Investment in rural road construction and maintenance is a large-scale initiative, bringing a wide range of benefits and driving the huge potential to create jobs for local people. In recent years, the government has strengthened organization and guidance, and issued notices to promote work-relief programs. Implementation guidelines for work-relief programs have been formulated to provide clear definitions and instructions regarding the scope, target beneficiaries, procedures and activities of work-relief programs.  Work-relief programs in the construction and maintenance of rural roads have achieved remarkable results, providing growing numbers of projects and attracting more rural residents every year. By providing local jobs and skills training, the programs help to motivate people in need to earn their living and become prosperous through work. |

2. Advancing Rural Revitalization Across the Board

Thriving businesses are an important pillar of rural revitalization. The government continues to integrate rural roads into the overall economic development of rural areas, ensuring that the vast countryside is finding greater prosperity and becoming more attractive.

**Supporting modernization of rural industries.** Based on the local availability of resources in rural areas, and taking into account territorial space planning at county and township levels, the government continues to coordinate the network of rural roads and the layout of industrial parks, accelerate the construction of rural roads connected to major local businesses, improve traffic access to key economic nodes in the countryside, and develop the model of Rural Roads Plus Local Industries, ensuring agricultural modernization.

**Boosting rural tourism.** Taking into account local natural landscapes and cultural heritage, the government emphasizes rational planning of rural roads. It works to connect rural roads with cultural and tourist resources, create high-quality themed tourist routes (see Panel 10), expand the comprehensive added value of rural road services, create popular tourist destinations from beautiful landscapes preserved by generations of villagers, and boost rural revitalization through rural tourism.

**Making efficient use of distinctive resources in rural areas.** Efforts have been made to promote the model of Rural Roads Plus Local Resources, which integrates the development of rural roads with local natural resources such as energy and minerals. Transport departments have been committed to providing better access to local industries in order to integrate roads and businesses and create new momentum for rural economic development.

3. Creating a Beautiful and Harmonious Countryside Where People Want to Live and Work

Building a beautiful and harmonious countryside with complete infrastructure, inclusive public services, and prosperous rural culture, where people want to live and work, is a prerequisite for rural people to live a modern life close to their homes, and a requirement for fostering greater social etiquette and civility in the countryside.

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| Panel 10 Using Roads to Transform Tourist Resources into  a Growth Driver for the Rural Economy |
| As one of the 33 pastoral banners in Inner Mongolia Autonomous Region, Otog Front Banner of Ordos City is located in the autonomous region’s western part and boasts abundant natural landscapes and a profound cultural and historical background. In recent years, Otog Front Banner has developed a “rural roads derivative economy” by creating tourism circuits, opening up resource routes, and activating industrial chains.  Otog Front Banner has built high-quality roads between Chengchuan and Tongshi, Angsu, and Sanduandi, connecting historical sites, traditional grasslands, folk culture, and desert scenery in the process, and enabling more than 1,000 households of farmers and herders along the routes to benefit from tourism. Since 2019, Otog Front Banner has welcomed approximately 5 million tourists and realized tourist revenues of over RMB10 billion.  The rapid development of rural roads has become a new engine driving the growth of cultural and tourist industries and boosting the incomes of farmers and herders in Otog Front Banner, leading the local people on the march towards prosperity. |

**Building roads to make the countryside more attractive.** In the planning and design of rural roads, transport departments focus on integration with the natural environment and local culture and customs. They continue to improve the environment of rural roads and carry out roadside greening and beautification programs. Beautiful rural roads connect natural and cultivated landscapes, and blend in with distinctive rural homes, helping to build a large number of villages and towns that are desirable places to live and work, and painting new scenes of rural harmony and beauty.

**Extending basic public services.** Safe, convenient and efficient rural transport facilities allow the extension of basic public services such as education and medical care to rural areas. The development of rural transport has made it safer and more convenient for rural people to travel and obtain medical services. Personalized transport services, including dedicated shuttle routes and customized school buses, have reduced problems for students in remote areas and supported equal access to education in urban and rural areas.

**Accelerating urban-rural exchanges and integration.** The development of rural roads has effectively shortened the distance and travel time between urban and rural areas, and promoted the two-way flow of personnel, materials, funds, information and culture. It has enabled mutual promotion between urban and rural areas, transformed the rural lifestyle, working pattern, and social landscape, and broadened the outlook of rural people, thereby helping form a new model of urban-rural relationship characterized by complementarity, coordinated development, and common prosperity.

VII. China’s Contribution to Rural Transport   
in Other Developing Countries

At present, a number of developing countries are still afflicted by poverty. They are searching for ways to develop, but rural transport is still a bottleneck. The Chinese government has worked to strengthen mutually beneficial cooperation on transport in the international community. In 2018, a resolution initiated and promoted by China – Eradicating Rural Poverty to Implement the 2030 Agenda for Sustainable Development – was adopted by the UN General Assembly, emphasizing further poverty reduction efforts through infrastructure construction. Over the years, through sharing its development experience through international cooperation mechanisms and helping with the construction of rural road infrastructure in other developing countries, China has contributed substantially to reducing poverty, improving people’s wellbeing, and promoting sustainable global development.

1. Providing Technical Standards for Highway Engineering Suited to Differing National Conditions

Standards are the fruit of humanity’s progress. They are also a universal technical language that strengthens global connectivity. In recent years, China has made great efforts in standardization and promoted innovative, cooperative, green and open development powered by standards.

In support of its rapid, large-scale development of road infrastructure, China has established a world-leading system of technical standards and specifications for highway engineering. Based on China’s experience from its transport construction projects, these standards represent theoretical advances in China’s highway engineering and involve technological innovations in techniques, equipment and materials. At the same time, they are highly practical and adaptable as they come from diverse projects covering China’s vast territory with complex geology and terrain.

Committed to staying connected with the world and abreast with the times, China aims to meet the world’s growing demand for transport development by boosting connectivity and sharing knowledge and experience. While strengthening “hard connectivity” in infrastructure with other countries, it is also promoting “soft connectivity” by sharing Chinese standards.

In 2012, ten industry standards for highway engineering were released in foreign languages for the first time, including Technical Standard of Highway Engineering, General Specifications for Design of Highway Bridges and Culverts, and Technical Standard of Low Volume Rural Highway Engineering. To date, a total of 73 industry standards have been released in English, French and Russian, covering major technical fields including survey, design, construction, maintenance, and quality inspection and evaluation of highways, bridges and tunnels. They represent a systematic effort in building industry standards in foreign languages, and contribute to highway construction in other developing countries.

China’s highway standards have been applied in hundreds of projects in dozens of countries around the world, including Indonesia’s Surabaya-Madura Bridge Project and Mozambique’s Maputo-Katembe Bridge Project. Chinese standards have also been applied in China-aided construction of rural roads in countries such as Nepal and Mozambique. These affordable, durable, safe and comfortable roads have provided benefits to local people (see Panel 11).

2. Sharing Experience in Rural Road Development

With the goal of improving the wellbeing of humanity, China has played an active role in building new platforms and mechanisms for global transport cooperation and in promoting knowledge and experience sharing. It has met its responsibilities as a major country with practical actions.

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| Panel 11 Applying Chinese Standards on the Karakoram Highway |
| The Karakoram Highway is an important land route on the China-Pakistan Economic Corridor. Its challenging geological conditions imposed a high difficulty of engineering that required complex construction techniques. Applying Chinese standards, the Karakoram Highway Phase II built by Chinese enterprises has won the Best Bridge/Tunnel Award in the Engineering News-Record (ENR) Global Best Projects competition.  Through the Five-Year Action Plan for Technical Cooperation on Highway Engineering Between China and Pakistan, Pakistan has developed its urgently needed standards for highway engineering in stages with the help of China. Based on Pakistan’s actual conditions, these standards have drawn on Chinese technologies, standards and specifications as well as results from China-Pakistan scientific research cooperation. |

**Building platforms for cooperation and exchanges.** In 2021, China hosted the Second United Nations Global Sustainable Transport Conference, with a focus on the enabling role of transport in poverty reduction and eradication. In 2023, China hosted the Global Sustainable Transport Forum, emphasizing common development that leaves no country or no one behind. At the forum, it shared experience with other countries and showed its determination and sense of responsibility in developing rural transport in more extensive and detailed fields. China has established the Global Sustainable Transport Innovation and Knowledge Center as a platform for cooperation and exchanges and for sharing China’s experience in rural road development with the international community.

**Engaging in international organizations.** China has sent experts to the Technical Committee 2.2 Roads for Equity, Accessibility and Mobility in Rural and Interurban Areas of the World Road Association (PIARC). It has also shared its experience in developing rural roads through other international organizations including the UN Economic and Social Commission for Asia and the Pacific (ESCAP), Shanghai Cooperation Organization (SCO), and Central Asia Regional Economic Cooperation (CAREC) Program, urging countries to attach more importance to the safety and accessibility of rural roads.

**Conducting international training sessions.** China has contributed to the sustainable highway development of other developing countries by helping to train technical professionals. China has held 28 training sessions for more than 800 people, including a training program on road design and management in Botswana, an advanced training program on highway engineering for countries along the Belt and Road, a training program for technical personnel in highway engineering in other developing countries, and a training program on road network planning.

3. Supporting Rural Road Construction in Other Developing Countries

China has supported and participated in rural road construction projects, and provided aid and assistance to a large number of rural road infrastructure projects in other developing countries, contributing its strength and experience to global rural road development. By participating in construction projects and providing technical and human resource support, China has helped improve the rural road infrastructure of other developing countries (see Panel 12), make travel much easier for local people, reduce logistic costs by a large margin, strengthen interaction between urban and rural areas, and facilitate the market access and flow of agricultural products. These efforts have contributed significantly to local poverty reduction and alleviation, improved people’s wellbeing and living standards, promoted local economic and social development, and received wide acclaim from local people. For example, the road construction project on the fringes of the capital of Madagascar, supported by free aid from China, has made it easier to transport eggs from the town of Mahazaza and facilitated the development of local poultry farming. It is known by the locals as the “egg road”.

Since 2018, China has supported 24 developing countries including Cambodia, Serbia, Rwanda, Namibia, Vanuatu and Niger in highway and bridge construction and maintenance. These efforts have helped such countries improve transport infrastructure.

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| Panel 12 Supporting Post-Earthquake Reconstruction in Ecuador |
| Implemented by the Ministry of Transport and Public Works of Ecuador following a magnitude 7.8 earthquake in 2016, Phase I of the post-earthquake reconstruction project was located in the intersection of four provinces – Pichincha, Imbabura and Santo Domingo de los Tsáchilas provinces in north-central Ecuador, as well as the coastal province of Esmeraldas.  Phase I involved reconstructing, upgrading and expanding an existing 33.8-km-long gravel road and constructing a 177-m-long bridge. Completed in 2023, it connects all traffic arteries in north-central Ecuador and is now the most convenient route connecting Ecuador’s north-central region and Pacific coastal areas in the west. Surrounding the Phase I site were the main production areas of agricultural products such as palm, sugarcane and cacao, served by gravel roads. Phase I has greatly facilitated the transport of local agricultural products, upgraded road safety, and stimulated the social and economic development of local rural areas.  Phase I was the first step in implementing the bilateral diplomatic initiative of China’s President Xi Jinping and a major result of Ecuador’s post-earthquake reconstruction with China’s support. It has significantly improved access to transport for around 1.5 million people along the route and strengthened Ecuador’s national road network and the local economy. It is an excellent example of deepening friendship and cooperation between China and Ecuador. |

Conclusion

Today, as China embarks on a new journey of promoting national rejuvenation through Chinese modernization, the country’s rural road endeavors have entered a period of historic opportunity. China will implement a new round of rural road upgrading programs covering road network expansion, road safety, transport capacity, governance ability, public services, the road environment, the integrated development of transport and local industries, and the growth of employment and rural incomes. These efforts will improve the modern rural transport system, open a new chapter of rural road development, and build up China’s strength in transport.

As China’s modernization advances, by 2035, the country will have in place a rural road transport system with a sound scale and structure, high-quality infrastructure and services, and rational and effective governance. By the middle of the century, China will have become a great modern socialist country with a safe, convenient, green and beautiful rural road transport system. The system will be adapted to the modernization of agriculture and rural areas, developed in tandem with eco-environmental conservation and rural cultural progress, and integrated with modern information and communication technologies.

In a spirit of openness and mutually-beneficial cooperation, China will strengthen international exchanges and collaboration in exploring new models and paths of rural road development, further contributing to global rural road development and poverty reduction, and building a global community of shared future.

1. Cited statistics in this white paper do not include the regions of Hong Kong, Macao, and Taiwan. [↑](#footnote-ref-0)
2. Graded roads refer to expressways, and Grade I, Grade II, Grade III and Grade IV highways as categorized in the Technical Standard of Highway Engineering. [↑](#footnote-ref-1)
3. According to the Highway Performance Assessment Standard, the technical conditions of highways are rated at five levels: premier, good, medium, inferior, and substandard. [↑](#footnote-ref-2)
4. According to the Standards for Technical Condition Evaluation of Highway Bridges, the technical conditions of highway bridges are rated at five levels: Grade I, Grade II, Grade III, Grade IV, and Grade V. Grade IV and Grade V bridges are dangerous bridges. [↑](#footnote-ref-3)