

China  
Hunan Subnational Governance and Rural Public Service Delivery  
Program for Results

Technical Assessment  
January 20, 2021

## Contents

I.	Program Description.....	3
II.	Strategic Relevance and Technical Soundness.....	6
III.	Description and Assessment of Program Expenditure Framework .....	13
A.	Intergovernmental Fiscal Context .....	15
B.	Financial Sustainability and Funding Predictability .....	19
C.	Expenditure Performance .....	21
D.	Recommendation .....	23
IV.	Economic Justification .....	24
V.	Technical Risks and Mitigation Measures .....	27
VI.	Conclusion .....	28
	Annex 1: Proposed Capacity Building Activities .....	29

## I. Program Description

### Program Development Objective and Indicators

1. *The Program Development Objective* of the proposed PforR is to enhance financing mechanisms for more equitable and efficient public service delivery of rural roads maintenance and compulsory education in the pilot counties and scale up selected practices across Hunan Province.

2. *PDO level indicators include:*

- Sum of three PEFA indicator scores in pilot counties 1) Debt Management (PI-13); 2) predictability of HLG transfers (HLG-1); 3) Public Access to Fiscal Information (PI-9)
- Percentage of rural roads in or above fair condition in: a) county roads, and b) township roads
- Number of pilot counties with within-county disparity in learning conditions among schools above national thresholds
- Number of DLI pilot practices scaled up to the whole Hunan province

### Program Scope

3. The proposed PforR will support a subset of the rural revitalization program in eight selected pilot counties. It will focus on area where enhanced intergovernmental fiscal management institutions are critical for achieving intended results. The PforR Program will support cross-cutting intergovernmental fiscal systems and service delivery linked to rural roads and compulsory education provision. Within the framework of Hunan's wider rural revitalization program, the PforR Program is defined on the basis of geographical coverage, a specific implementation period and relevant expenditure sub-programs together with a sub-set of program results. Expenditure programs and results were selected based on i) the share in public expenditures, ii) criticality of the expected results, and iii) the scope for cross-sectoral learning to reflect an array of different public service delivery and fiscal challenges.

4. *Geographic boundary.* Clustered on the eastern provincial border of Hunan, the counties were selected to represent a range of different economic and fiscal environments but are largely rural and lagging localities within Hunan province. The geographic boundary of this PforR covers eight counties in four prefectures, out of 122 counties in 14 prefectures in Hunan. These counties represent different levels of development and fiscal and administrative capacities. Per capita GDP ranges from above RMB 102.6 thousand in the richest county of Luyang to RMB 20.4 thousand in the poorest country of Guidong. Equally, rural per capita incomes in Luyang are more than three times higher than in Chaling. This relative diversity will allow for piloting of innovative institutional innovations in different income level and development settings.

**Table 1: Key Statistics of 8 Selected Counties**

	<b>Population</b>	<b>2019 per capita GDP</b>	<b>Rural Population, % of total</b>	<b>Public spending</b>
	thousand	RMB	%	Mil RMB
Pingjiang	954	33797	83.4	7227
Liuyang	1374	102574	52.0	14207
Youxian	665	59744	52.0	4799
Rucheng	355	24616	64.3	3230
Yizhang	598	36101	66.7	3872
Liling	968	74041	56.7	7637
Guidong	210	20424	74.6	1890
Chaling	594	36279	67.4	4269
<b>Total/Average</b>	5,718	387576	64.7	47,131

Source: Hunan Provincial Department of Finance

5. *Timeline.* The timeline of the proposed PforR is 2020 – 2024. The proposed PforR baseline year is 2019.

6. *Exclusions.* The eligible activities supported by the PforR include all activities of compulsory education and rural roads maintenance carried out by eight pilot counties and capacity building activities carried out at the provincial PMO. There are no activities with significant environmental and social impacts or with a contract value at or above US\$115 million for works / supply & installation of plant / PPP, USD75 million for goods / information technology / non-consulting services, and USD30 million for consultant services.

7. *Program Financing.* The total amount of Program financing allocated to the sub-programs supported by the PforR is expected to be US\$6.2 billion over the 2020-2024 period, of which 96.8 percent will be financed by the Government and 3.2 percent by an IBRD loan. The Government will fund US\$5.986 billion equivalent whereas the IBRD loan will fund US\$200 million (Table 2). The subprograms supported by the PforR accounts for about one third of the overall government rural revitalization program of the eight selected counties (Table 3).

**Table 2: Program Financing, 2020-2024**

<b>Source</b>	<b>Amount (US\$ Million)</b>	<b>Share (percent of total)</b>
Government	5986	96.8
IBRD	200	3.2
<b>Total</b>	<b>6186</b>	<b>100</b>

**Table 3. Government program and the PforR, eight selected counties, 2020-2024 (US\$ million)**

	Government program (eight pilot counties)	PforR
I. Industrial development	3,488	
II. Livable environment	4,539	
III. Rural civilization (Culture)	406	
IV. Governance effectiveness	1,258	10
V. Public services	12,534	6,176
o.w Rural Transportation	1,845	1,845
Compulsory Education	4,331	4,331
VI. Poverty alleviation	1,090	
<b>Total</b>	<b>23,314</b>	<b>6,186</b>

**Results Areas**

8. The proposed PforR would support Hunan province to enhance intergovernmental fiscal management and improve the delivery of selected critical public services in rural areas. As such, the PforR will support activities in two results areas: 1) strengthened institutions for intergovernmental fiscal management and transparency; and 2) result-oriented financing for enhanced public services. The detailed description of the results areas is presented in the following section.

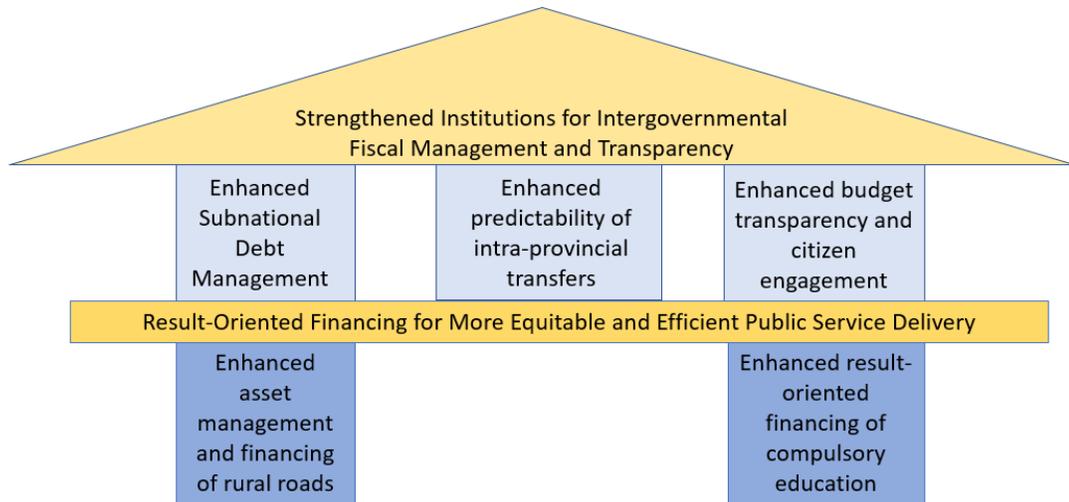
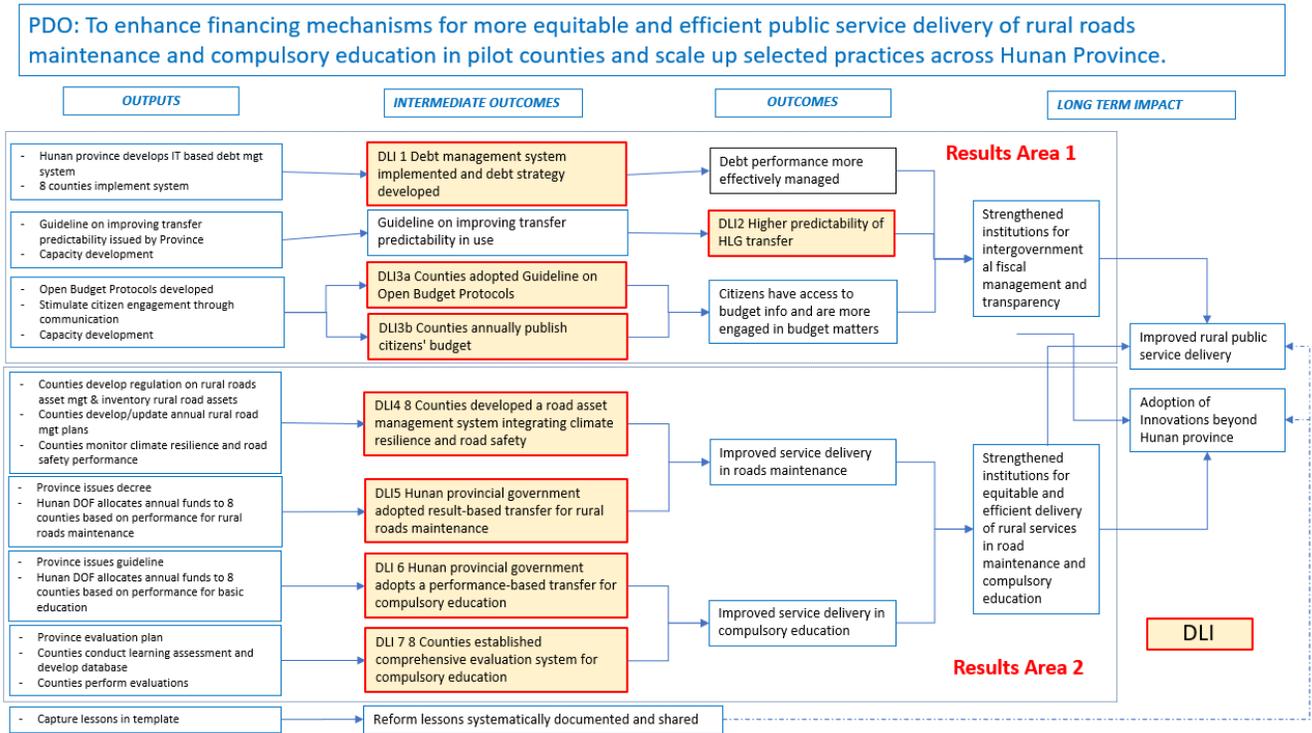


Figure 1: Overview of Program Architecture and Results Chains



## II. Strategic Relevance and Technical Soundness

### Strategic Relevance

9. The overall Program architecture is depicted in Figure 1. The proposed Program is strategically relevant for three reasons.

10. Firstly, the proposed Program is consistent with the World Bank Group Country Partnership Framework (FY2020-2025), discussed in the Board on December 5, 2019. (Report No. 117875-CN) The operation responds to the priorities and objectives set under the CPF engagement areas I and III. By piloting and demonstrating new fiscal management mechanisms at the subnational level, the operation will contribute to more efficient and sustainable subnational fiscal management. At the same time, the operation focuses on enhancing institutions for the delivery of critical public services, including maintenance of rural roads and compulsory education in rural areas that are lagging in terms service access and quality. As such, the operation also contributes to the objective of sharing the benefits of growth. In line with the institutional focus of the CPF, the operation explicitly focuses on addressing key institutional gaps in the fiscal and public resource management system and meets two of the four CPF selectivity criteria: (i) The operation supports the piloting of new fiscal management mechanisms at the subnational level; (ii) The operation supports institutional changes to enable more equitable and fiscally efficient delivery of critical services in lagging regions.

11. Secondly, it reflects Hunan's priorities. Hunan Province is responsible for most public expenditure functions but (as other subnational governments) continues to face challenges in delivering public services in an equitable, accountable and fiscally sustainable manner. The government rural

revitalization program, built on a long-term strategic plan, is critical to Hunan Province and faces similar implementation challenges.

12. **Thirdly, the operation explicitly focuses on addressing key institutional gaps that have replication potential throughout China.** The operation supports the piloting of new fiscal management mechanisms at the subnational level. This includes introduction of a new benchmarking and monitoring framework for assessing the quality of public resource management at the county level based on the internationally recognized Public Expenditure and Financial Accountability (PEFA) framework. It also includes, new approaches to manage fiscal risks, incentive-based fiscal transfers, asset management and performance evaluation. These changes are expected to improve expenditure allocation, raise pro-poor spending and enhance public service delivery for rural poor. The operation also supports institutional changes to enable more equitable and fiscally efficient delivery of critical services in lagging regions. The operation has an explicit focus on enhancing equitable service delivery in mostly poorer counties and in one of the poorer provinces of China. Hunan province is ranked 16th among China's 31 provinces in terms of per capita GDP. Its per capita GDP is roughly equivalent to 82 percent of China's average per capita GDP. The median per capita GDP of the eight selected pilot counties within Hunan that will directly benefit from the operation is only about half of the national average per capita GDP and less than 30 percent of the national average in the least developed of the eight pilot counties. While initially focused on selected counties in Hunan province, institutional innovations will be captured systematically so they can be transferred to other counties and provinces and inform broader reforms of the intergovernmental system in China, thereby increasing impact.

### **Technical soundness**

13. **The PforR is based on solid analytical work conducted around the areas of engagement, along with in-depth technical assessments commissioned during preparation.** Continued policy dialogue following the 2017 Hunan Fiscal Sustainability DPO provided a strong understanding of fiscal management in the province. Subnational PEFA assessments were conducted for the first time in China for the eight pilot counties in 2020 which are to be reviewed by the PEFA Secretariat for quality assurance. The first two reports for Liuyang and Pingjiang counties already received endorsement from PEFA Secretariat. These assessments provide a comprehensive analysis of the performance of county governments' PFM systems against all the indicators covered by the PEFA 2016 methodology to inform the design of the operation as well as to provide a baseline against which future developments in the technical areas targeted by the operation can be measured.

14. **The program design is informed by in-depth technical assessments and the expenditure framework assessment.** Bank staff across multiple global practices contributed to an integrated approach across both the cross-cutting and more sector specific results areas. The work in the sectors was further informed by two background studies on rural roads maintenance and compulsory education. A technical assessment on the accessibility, comprehensiveness and timeliness of the budget information released to the Public in Hunan was completed following the methodology of the Open Budget Index (OBI). This helped understand the factors that are undermining the fiscal transparency efforts and hindering public understanding and use of the of fiscal and financial information both at the provincial and county level. The baseline study commissioned by the Hunan Education Department shed light on gaps existing between urban and rural school in terms of school conditions, teacher quality and students' learning outcomes across the eight counties. Similarly, the baseline study conducted by the Hunan Transport Planning and Design Institute – along with several rounds of technical discussions with Hunan

DOF, DOT and relevant county government agencies – confirmed that there is a continued imbalance in term of an excessive part fiscal (public budget) funds spent on asset creation versus maintenance.

15. **This operation is built on the Bank’s knowledge partnership for the government of China and the Hunan province.** The Mid-Term Review of China’s fiscal and taxation reform program in the 13th Five-Year Plan (FYP) period and a follow-up policy paper on Modernizing Fiscal and Governance Institutions in the 14th FYP revealed the high reversal risk of fiscal reform. These findings highlighted the need for adopting a whole-of-government approach, strong leadership and inter-departmental coordination, being mindful of the shock to the economy and financial sector during transformation, and the challenge of reform implementation at subnational governments. The recommendations emphasize the need to build a fiscal governance system that provides the following functions: clear, consistent and sufficient signals and mandates to subnational government to achieve fiscal effectiveness, efficiency and sustainability; ensuring incentive compatible with the set objectives; balancing expenditure responsibilities and revenues and providing stable and predictable revenues/resources for local governments to carry out their responsibilities; building capacity needed for delivering infrastructure and social services in an effective and sustainable manner; ensuring accountability and adequate coordination; and monitoring and evaluating the performance and using the evaluation information to inform policy decisions. Going forward, grassroots government such as counties—the front line of public service providers – are expected to get the most needed support of empowerment, financing and technical assistance.

16. **The operation also draws upon key lessons emerging from past Bank operations and ASA work as well as from international good practices.** The design of sub-result area of compulsory education draws significantly from the WB report on “Result-based Financing in Education – Learn from what works” (2018). The report describes the several key criteria that should be considered when introducing result-based financing in WB operations (i.e. improving monitoring and information systems, invest upfront in verification, and be adaptive and flexible in order to address realities on the ground). Along the same lines, relevant experiences from Brazil and Indonesia were applied in the reform dialogue with Hunan. The experience of the Ceara State in Brazil focused on introducing fiscal incentives for municipalities and school autonomy with results-based accountability to improve student learning and reduce disparities across the state. The experience of Indonesia related to the introduction of a performance-based component into Jakarta's school grants and the increase in competition among schools to earn the performance-based grants. The design of the sub-result area of rural roads builds on China-Anhui Rural Roads Resilience PforR (P158733). While this Operation will further support China moving from infrastructure “asset builder” to “asset manager”, it addresses the key institutional bottlenecks and emphasizes empowering and enabling grassroots county governments to play a significant role in rural road asset management.

17. **Finally, the selection of the targeted counties was led by the aim of piloting of innovative institutional innovations across different income levels and development settings.** The criteria used for selecting the eight pilot counties included: 1) geographical size, 2) population, 3) socio-economic context and 4) different levels of fiscal and administrative capacity, and 5) clustering in a particular area of Hunan. Disparities among the selected group is represented by their Per capita GDP which ranges from above RMB 100 thousand in the richest county (Luiyang) to RMB 20.4 thousand in the poorest one (Guidong). By working with a control group of heterogeneous counties will help generate practical and transferable institutional solutions tailored to different levels of development (not one solution fits all) allowing a faster replicability elsewhere in Hunan and China.

18. **Results Area 1: Strengthened institutions for intergovernmental fiscal management and transparency.** This Results Area will contribute to enhancing the fiscal sustainability and enabling strategic allocation of public finance. Hunan will pilot a comprehensive PFM reform in the eight selected counties. A reform action plan is under development based on the findings of the PEFA assessments. Assessments of subnational public financial management revealed mixed performance of county-level PFM system. As part of the preparation of this operation, systematic indicator-led PFM assessments were carried out in eight selected pilot counties, deploying the internationally accepted Public Expenditure and Financial Accountability (PEFA) methodology. These assessments aimed to benchmark local government financial management performance in China against international standard. While there is some variation across counties, the assessments paint a mixed picture. While results are generally robust in terms compliance systems and downstream treasury operations, execution and basic financial accounting and reporting, challenges pertain to weak budget credibility, rooted in volatile intergovernmental transfer system, incomplete budget comprehensiveness and transparency and generally weak links between budget allocations and results. Challenges also exist around fiscal risk management especially associated with the broader public sector balance sheet, including large quasi-fiscal operations.

19. The interventions supported under this result area focus on addressing the intergovernmental fiscal management challenges. They are clustered in three parts described below.

#### RA 1.1 Enhanced Subnational Debt Management

20. **Subnational debt plays an important role in financing infrastructure investments both at provincial and county levels.** Subnational debt plays an important role in financing infrastructure investments both at provincial and county levels. Hunan Province has a track record of maintaining fiscal discipline and prudent control of on-budget liabilities. The reported consolidated budget deficit of Hunan Province has remained below 3 percent of GDP. Reported on-budget debt is relatively low at 24 percent of regional GDP in 2018. However, like in other provinces, there are fiscal risks associated with operations of public corporations providing public goods and services outside the core budget. Bonds issued by these public corporations (formerly classified as Local Government Financing Vehicles) are estimated at 15.6 percent of regional GDP in 2020, based on publicly available data. In addition, total PPP investment accounted for 12.7 percent of regional GDP in 2019. Among the eight pilot counties there is some variation in fiscal capacity and the poorest ones face more acute fiscal pressures. Direct debt in Guidong and Rucheng counties is high at 43.3 and 86.4 percent of regional GDP respectively. Direct government debt is below 20 percent of regional GDP in the other 6 pilot counties.

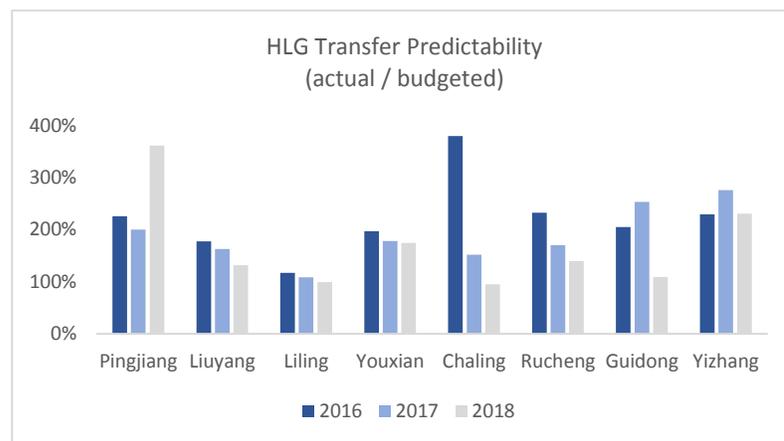
21. **Under this PforR, Hunan will strengthen its monitoring of contingent liabilities and fiscal risks.** While Hunan has made progress in tightening aggregate fiscal control and reining in off-budget borrowing by LGFVs, the current debt management framework, especially at the county level remains incomplete. The current debt management system provides basic debt recording and accounting functions for direct on-budget debt but does not capture contingent liabilities and provides limited support to active debt management. Hunan will roll out a comprehensive debt monitoring and management system to record and monitor debt liabilities including those associated with leveraged project bonds (used for paid in capital). In addition, the eight county governments will institutionalize an annual debt performance report to inform decisions on the allocation of bond quota across county governments while containing excessive leverage and risk taking. Reforms will be sequenced in a phased approach over the timespan of this operation. The institutionalization of the comprehensive debt

management system would include quality control processes for concerned projects, and the provision of training to county government officials to adopt this monitoring system, and finally lead to the development of medium-term debt strategy at the county level.

RA 1.2 Enhanced predictability of intra-provincial transfers

22. **Fiscal transfers from higher level governments contribute the lion share of revenue in most counties.** However, the PEFA assessment suggests that the credibility of county budget remains relatively weak, as both aggregated and composite expenditure outturns tend to deviate significantly from the budget approved at the beginning of the year. This is to a large extent due to the lack of predictable higher-level government (HLG) transfers. The PEFA assessments in eight pilot counties found that actual received HLG transfer as percentage of the budgeted amount in the year beginning was as high as 167.8 percent on average in 2018. The lack of predictability in HLG transfer represents a critical bottleneck for further improvement of counties’ public finance management.

**Figure 2: HLG Transfer Predictability, 2016-2018**



Data source: PEFA assessment reports of the eight pilot counties

23. **This operation will support Hunan province and the eight pilot counties to adopt an improved approach to budgeting High-Level Government (HLG).** A comprehensive and reliable budget that gives due consideration to policy objectives and fiscal constraint is critical for the strategic allocation of fiscal resources. This would help ensure overall policy commitments are affordable within the available fiscal envelope. This requires enhancing resource predictability including of intergovernmental transfers to support expenditure prioritization. Hunan province will increase the share of transfers that are allocated based on formulas to increase predictability. Provincial authorities will also provide timely information to counties on the projected transfer allocations early in the budget process to enable counties to prepare their budgets based on expected HLG transfers in the beginning of the year. In conjunction with these steps Hunan will also develop a system to track and monitor the timeliness of appropriation of transfer funds.

RA 1.3 Enhanced budget transparency and citizen engagement

24. **The Hunan Province, stands-out as one of the leaders with regard to fiscal transparency in China and is looking for more innovative ways to make information available to the public through its main website.** There is a strong commitment from DOF to advance current efforts and to increase

availability of fiscal data as well as the depth of the information released. The PEFA assessments revealed that county governments' financial reports are generally comprehensive and cover core budget operations. However, the budget documentation meets only minimum standards. While reports contain basic information such as previous year's budget outturn and the current fiscal year's budget data, critical information are missing. Budget documents in most counties do not provide the macroeconomic assumptions that underpin the projections of revenues and expenditure; information on assets, liabilities and fiscal risks; or explanation of budget implications of new policy initiatives and major new public investments. Moreover, the public has limited access to fiscal information. While enacted budgets, annual budget execution and financial reports are generally published on time, there is no clear simple summary of the enacted budget easily accessible to citizens (referred to as "citizen budget" hereafter), the in-year budget execution report or the performance information of frontline service delivery units. The aftermath of the COVID-19 crisis, where improving expenditure efficiency to respond to people needs has become even more prominent, is giving increased weight to timely and comprehensive fiscal transparency.

25. **This operation will support Hunan to improve budget transparency by disclosing more comprehensive and timely budget through the provincial portal and to make it more easily accessible for citizens.** Hunan will develop guidelines for unified budget disclosure methods to support the standardization of budget content disclosure across counties. It will also implement a dynamic and interactive "one stop open budget portal" and institutionalize a Citizen Budget both at the provincial (interactive/online format) and county levels to strengthen the publication and visualization of budget information related to social needs. Counties will implement relevant activities targeting different stakeholder groups to raise public awareness on budget issues.

26. **Results Area 2: Result-Oriented Financing for more Equitable and Efficient Public Service Delivery.** The goal of RA 2 is to improve the intergovernmental public financial management and the quality of rural roads maintenance and compulsory education.

#### RA 2.1 Enhanced asset management and financing of rural roads.

27. **Effective, efficient and climate resilient rural transport services are crucial to economic development, public health and safety, and social integration.** During the past decades, Hunan – along with many other provinces in China – invested heavily in expanding the network of rural roads. These significant road network infrastructure investments significantly improved physical village access to-date. As the road network infrastructure has both grown and matured, the institutional financing arrangements now need to be better aligned to secure efficient and equitable outcomes across all counties. To secure broad-based rural transport infrastructure with fiscal sustainability, the province and counties will need to re-align road financing to more optimal infrastructure asset maintenance expenditure profiles while limiting excessive capital commitments to new roads.

28. **The technical assessment has confirmed the current rural roads management in Hunan suffers from 1) institutional fragmentation; 2) imbalance between optimal maintenance expenditure and new road construction; and 3) lack of capacity in asset management.** Hunan's rural road network currently falls into two main categories- registered roads and unregistered roads. As the provincial DOT only supervises the registered roads, there is no complete inventory of road assets available. As a result of the rural road network expansion, by 2019, Hunan Province has some 202,000 km of registered rural road network, including 36,000 km of county roads, 58,000 km of township roads, and 108,000 km of

village roads. These are recognized by higher levels of government for maintenance transfers. In addition, there is still some 100,000 km of unregistered rural roads. Unregistered roads were either extended independently by local governments in new capital expenditures, or risk further stretching the already thinly spread maintenance transfers across the registered network.

**Table 4. Rural Roads Assets and Conditions in eight pilot counties, 2019**

County	Registered rural roads (km)	Unregistered rural roads (km)	Percentage of PQI in or above fair condition*			
			Average	County road	Township road	Village road
Liling	2,707	297	66.07%	77.97%	79.01%	43.99%
Yizhang	1,934	592	36.67%	44.66%	43.12%	26.57%
Liuyang	3,621	3,685	31.89%	38.75%	12.13%	15.43%
Pingjiang	3,457	1,171	49.68%	76.82%	40.99%	8.64%
Guidong	745	174	33.66%	57.43%	3.76%	11.37%
Rucheng	1,978	407	79.00%	97.30%	49.30%	70.40%
Youxian	2,802	229	42.11%	80.79%	10.14%	5.46%
Chaling	2,397	1,768	23.72%	34.23%	5.33%	14.20%
<b>Sum</b>	<b>19,641</b>	<b>8,323</b>	<b>45.34%</b>	<b>63.50%</b>	<b>30.47%</b>	<b>24.51%</b>

*Note: results of sample assessment for registered rural roads only*

*Source: Hunan Department of Transport*

29. **Imbalance between optimal maintenance expenditures and new road construction prevails, driven by an apparent misalignment of intergovernmental finance and functional responsibilities for rural transport.** County governments on average spent around 80 percent of their total rural transport budget on road construction. The subsidies from province to counties for rural road maintenance budget are calculated based on the mileage of the registered roads (i.e. RMB 7,000/km for county roads, RMB 3,500/km for township roads, and RMB 1,000 yuan for village roads). Unregistered roads were unaccounted for.

30. **This has constrained county governments from using fiscal resources to achieve optimal rural transport service.** Based on the results of a road condition survey conducted by DOT in 2019, even for roads with grant financing from high-level government, only 45.34 percent of rural roads in the eight counties reached fair condition or above (Table 4), which is significantly lower than the sectoral target of 80 percent. These in turn will prematurely generate mounting costs to rebuild existing assets, enhance road asset vulnerabilities to climate change, and squeeze the ability to upgrade the quality of road network access where gaps still exist.

31. **This sub-result area will support a shift away from higher level provincial mandates for the counties to build new roads, to a set of enabling measures that would allow the counties to gear their program toward road asset management and give due consideration to climate resilience and road safety.** The main intervention introduced under this operation will be piloting of a more performance-based transfer for rural roads. The overall size of the performance-based fund will total the amount of budget transfers on rural road maintenance works in the eight pilot counties. The operation will support the eight pilot counties in adopting a road asset management system, comprising all publicly funded rural roads and structures. Each participating county will designate a leading agency for coordinating all rural roads related affairs in the county, develop and regularly update a comprehensive inventory of road assets and establish policies, objectives, and associated service levels including standards for asset

condition, climate resilience and road safety. County governments will integrate program budgeting for rural transport and develop annual road maintenance programs to set specific targets considering the financing constraint. In addition, Hunan province will pilot a result-based transfer for rural roads maintenance work. The design of the new financing rules will incentivize county governments to improve the use of all available funds and address maintenance gaps and climate resilience and road safety, given existing baseline road infrastructure assets while ensuring equity.

RA 2.2 Improved service delivery in Compulsory Education (CE).

32. **As China achieved universal access to compulsory education (99.8 percent enrollment rate as of 2011), equitable access to quality compulsory education has become one of priorities in the government rural revitalization program.** Despite of national and Hunan province’s great effort to equalize the finance for compulsory education, both intra-county disparity and within-county disparity remain high in terms of the education quality. Only 87.7 percent of counties in Hunan province reached the national standards for equalized compulsory education provision in 2018, lower than the national average of 92.7%. Substantial transfers are provided by provincial governments to counties in the sector, but the current transfer system is largely financing the existing input structure rather than focusing on school performance or learning outcomes. Moreover, urban-rural disparities within counties persist not only in terms of spending levels and school conditions (figure 3 and 4), but also in school management, teacher quality and consequently in educational outcomes.

Figure 3 Fiscal transfers do not affect per student spending across counties...

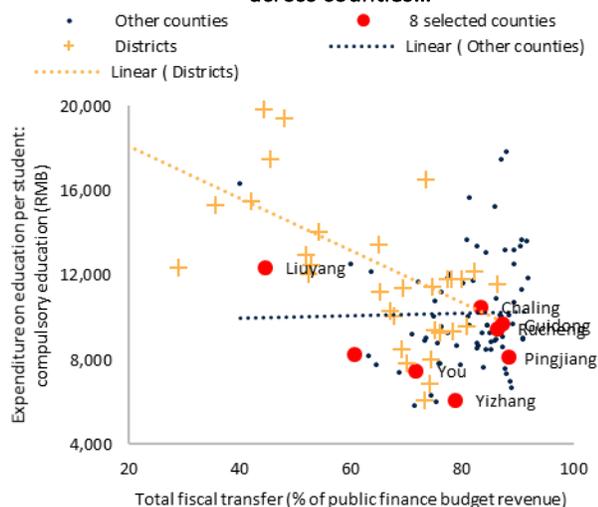
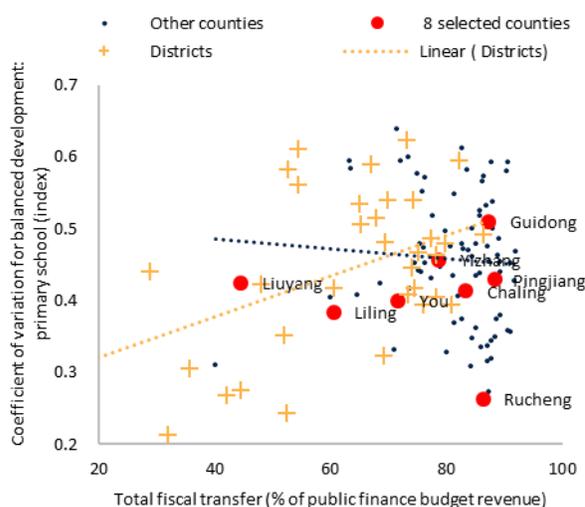


Figure 4...nor school disparities within counties



Source: World Bank Staff based on official data from Hunan Department of Education;  
[http://jyt.hunan.gov.cn/jyt/sjyt/xxgk/tzgg/201912/t20191219\\_992655.html](http://jyt.hunan.gov.cn/jyt/sjyt/xxgk/tzgg/201912/t20191219_992655.html)

33. **This sub-result area aims to promote equitable and effective compulsory education in rural counties by supporting the province in strengthening intergovernmental fiscal transfers for compulsory education and conducting annual comprehensive evaluation of education performance in the eight pilot counties.** A performance-based transfer will incentivize counties to focus on improved school performance and facilitating convergence in school conditions and learning outcomes. The overall size of this performance-based fund is expected to be around 8 percent of the total discretionary government expenditures on compulsory education in the first year and may be increased in later years. The transfer program will link the allocation of funding to the county's performance in delivering

equitable and quality compulsory education services. The formula to allocate the transfer will be based on measurable performance indicators including: improvements in school conditions (teaching space and possession of teaching equipment per student) of lagging rural schools; percentage of classrooms equipped with remote learning facilities and teachers capable of using remote learning facilities; reduction in variance coefficient of education services across schools; percentage of qualified teachers; and percentage of qualified teachers rotating to lagging schools. In addition, the distribution of this transfer will also be adjusted according to the fiscal capacity of the county to mitigate cross-county disparities.

34. **The introduction of result-oriented transfers will be complemented by a comprehensive annual evaluation mechanism.** This mechanism will assess education performance and identify weaknesses in education management by reviewing allocation of fiscal resources, physical conditions of schools, education activities and student learning outcomes. Student learning outcomes will be assessed with standardized test rolled across the eight pilot counties. The results of the evaluation will inform county and provincial governments to better target financial and technical support to lagging schools and tailor it to their specific needs (i.e. support to improve quality of the teaching workforce, support to improve learning equipment, etc.). Finally, the program will support the roll out of a basic education learning assessment and establishment of an integrated education monitoring and evaluation database.

35. **Hunan will monitor the gender gap in learning outcomes as part of the comprehensive evaluation mechanism.** There is evidence that gender achievement gaps exist among Chinese students: one study found gender academic achievement gaps in favor of girls in all of the three main subject areas of Chinese, English and math, while another found that boys outperform girls in math in Shaanxi and Gansu provinces. Currently, a sex-disaggregated data collection system does not exist to track gender gaps in student learning outcomes in Hunan. Establishing a sex-disaggregated data collection system in the 8 pilot counties as part of the comprehensive evaluation mechanism would enable county and provincial governments to track potential gender gaps in student learning outcomes, and analyze and address gender inequalities if they exist and take action to address them. Progress will be measured through an intermediary result indicator.

### III. Description and Assessment of Program Expenditure Framework

36. **The Expenditure Framework Assessment (EFA) was conducted based on information provided by Hunan Provincial Government, transport and education departments, and all eight pilot counties.** The technical assessment was anchored in the preliminary findings from the eight county PEFAs, as well as the review of performance evaluation reports and audit reports of compulsory education and rural transport sectors. The EFA focuses on compulsory education and rural roads in eight pilot counties, as they account for 99.8 percent of total Program expenditures. The remaining expenditures focus on the enhancement of key cross-cutting fiscal system and capacity building. (Table 5 and Table 6) They are assessed from the following four dimensions: 1) the implications of the intergovernmental fiscal context; 2) adequacy of Program expenditure reporting; 3) financial sustainability; and 4) incentives for efficient service delivery and value for money.

**Table 5: The Program Expenditure Framework by Results Areas, 2020-2024 (US\$ million)**

	<b>Total Amount</b>	<b>Share</b>
<b>The PforR Total</b>	6,186	100%
<b>RA 1: Fiscal Institution</b>	10	0.2%
<b>RA 2: Delivery of Public Services</b>	6,176	99.8%
2.1 Rural Transport	1,845	29.8%
2.2 Compulsory Education	4,331	70.0%

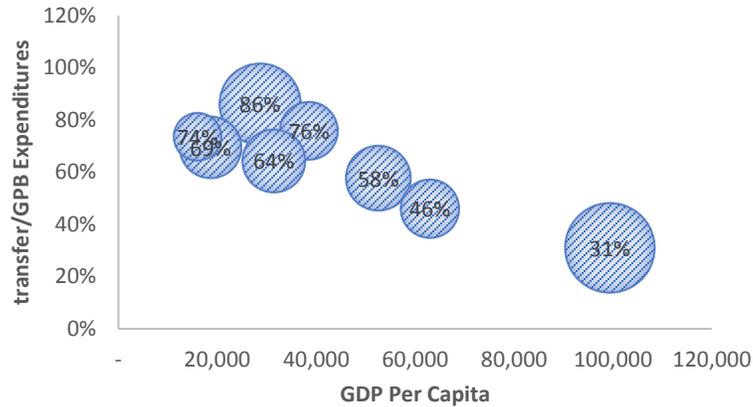
**Table 6: The Program Expenditure Framework by Sponsoring Governments, 2020-2024 (US\$ million)**

	<b>The Program Total</b>	<b>RA 1: Fiscal Institution</b>	<b>RA 2: Delivery of Public Services</b>	<b>2.1 Rural Transport</b>	<b>2.2 Compulsory Education</b>
<b>Total Amount</b>	<b>6,186</b>	<b>10</b>	<b>6,176</b>	<b>1,845</b>	<b>4,331</b>
Province	10	10			
<b>Sum of 8 selected counties</b>	<b>6,176</b>		<b>6,176</b>	<b>1,845</b>	<b>4,331</b>
Pingjiang	1,323		1,323	629	694
Liuyang	1,663		1,663	231	1,432
Youxian	578		578	255	322
Rucheng	577		577	222	355
Yizhang	604		604	79	524
Liling	654		654	185	469
Guidong	247		247	89	158
Chaling	530		530	155	375

#### A. Intergovernmental Fiscal Context

**37. Overall, the HLG transfer finances over 50 percent of general public budgetary expenditures, its share ranging from 31 percent to 86 percent among the eight pilot counties.** The counties receive a mix of general and specific purpose transfers, contributed by the central and provincial governments. Some of the HLG transfer are allocated based on formulas, and tend to favor poorer provinces (e.g., education), while others are discretionary (some earmarked grants) or linked to specific policy objectives (capital grants). There are however notably differences in own revenue fiscal capacities across the counties (e.g., including land lease revenues). China’s fiscal transfers are also often inter-twined with higher level mandates or directives, which county governments then seek to meet through a mix of revenue sources.

Figure 5: Reliance on HLG transfer in 8 counties, 2018



38. **Hunan province is undergoing a major intergovernmental fiscal reform under the overall framework established by the national MOF.** The first major change is the delineation of the expenditure responsibility between the central government and provinces and between Hunan province and county governments. Compulsory education, being viewed as one of the basic public services, is classified as a shared functionality of the central, province and city/county governments. Rural transport, where benefits are more confined to local residents, is classified as local functionality. The second change takes place in the financing scheme of these functions and the role of high-level governments (HLG). The CG has allocated more budget to general transfer programs and consolidated many earmarked transfer programs that share policy objectives. By 2019, the remaining earmarked programs will fall to less than ten percent of total transfers from the central to SNGs. Meanwhile, the CG is committed to provide advance notification to provinces on no less than 90 percent of general transfers prior to the budget year. Building on the national scheme, the Hunan province is reforming its transfer scheme with the sub-provincial governments within its jurisdiction.

39. **Hunan needs to enhance its intergovernmental fiscal management in order to reap the benefits from the changes in intergovernmental fiscal relations.** In theory, the above mentioned intergovernmental fiscal reform will increase the predictability of revenues and the mandates imposed on SNGs and clarity of accountability. To reap the benefits, significant challenges are still to be overcome in terms of the intergovernmental public financial management. While the overall HLG transfer, a major source of county governments' revenue, is stable and steadily growing over time, the county's capacity in projecting the HLG transfer was determined to be quite low.

#### Program Budget Structure and Classification

40. **All counties adopt the budget classification code and the reporting template that are centrally formulated by the national MOF.** Irrespective of the assignment of the functionalities, county governments are responsible for delivering all public services within their jurisdiction, including compulsory education and rural roads. The sectoral expenditures are therefore reported in the county governments' budget following the instructions of the MOF.

41. **The budget report of education sector provides adequate information about Program implementation.** In Hunan, the Bureau of Education in each county is in charge of the delivery of compulsory education and compiles an integrated budget expenditure reporting that consolidates the whole education sector. The expenditures for education are presented by functions and by economic classification. The functional expenditure categories include primary education and junior secondary

education. They can be further broken down by economic categories including salaries and welfare, goods and services, subsidies, debts repayment, construction expenses, capital expenses, etc.

**Table 7: Expenditure on compulsory education of eight pilot counties**

Budget line	million RMB				Share in Total			
	2016	2017	2018	2019	2016	2017	2018	2019
<b>Compulsory Education</b>	<b>4631.1</b>	<b>4978.2</b>	<b>4773.0</b>	<b>5036.8</b>				
2050202 <b>Primary education</b>	<b>2768</b>	<b>2921</b>	<b>2821</b>	<b>2877</b>	100%	100%	100%	100%
<i>breakdown by economic category</i>								
Composition to labor	1863	2025	1935	2103	67.3%	69.3%	68.6%	73.1%
Goods and Services	417	394	432	368	15.1%	13.5%	15.3%	12.8%
Subsidies	289	312	226	217	10.4%	10.7%	8.0%	7.6%
Capital expenditures	200	190	229	188	7.2%	6.5%	8.1%	6.5%
2050203 <b>Junior-secondary education</b>	<b>1863</b>	<b>2057</b>	<b>1952</b>	<b>2160</b>	100%	100%	100%	100%
<i>breakdown by economic category</i>								
Composition to labor	1155	1388	1327	1498	62.0%	67.5%	68.0%	69.4%
Goods and Services	<b>263</b>	<b>291</b>	<b>290</b>	<b>308</b>	14.1%	14.1%	14.8%	14.3%
Subsidies	341	250	193	194	18.3%	12.1%	9.9%	9.0%
Capital expenditures	103	128	143	157	5.5%	6.2%	7.3%	7.3%

*Data source: Finance Bureaus of the eight pilot counties*

42. **Expenditure reports concerning rural roads have been fragmented.** Beyond the Department of Transport, other departments were engaged in the rural roads sector. The budget classification code did not provide for a clear distinction across different types of roads, or capital versus different types of maintenance. Given the lack of a “whole of county” reporting practice for roads, the 8 counties faced challenges in providing more systematic tally of expenditure in this sector. In each of the eight project counties, there is more than one first-tier budgetary spending unit involved in the delivery of rural roads services, including, but not limited to, Bureau of Transport, Bureau of Highway Management and Townships. While the Bureau of Transport plays a coordinating role for the transport sector, it compiles the budgetary expenditure report that covers the expenditures of itself, not consolidating expenditures on rural roads implemented by any other budgetary units such as Bureau of Highway Management. In addition, the budgetary expenditure classification is not codified according to the actual functions of the transport sector. The most commonly used budget lines in which the expenditures of rural roads are defined by their sources of funding, are not reflecting the nature of activities (Table 8). Hunan province agreed to pilot a satellite account in the eight pilot counties to track all rural roads expenditures, their sources of finance and outlays by function. The WB team has worked with Hunan DOT and DOF to develop a report template (see Table 9) for rural roads program and collected the data of 2019 in the eight pilot counties.

Table 8: Budget lines used by the county governments to record expenditures on rural roads

Code	Budget lines
213	Agriculture, forestry and water expenditure
21301	agriculture
2130142	Rural road construction
21307	Comprehensive Rural Reform
2130701	Subsidy to village level
21305	Poverty alleviation
2130504	Rural infrastructure construction
21307	Comprehensive Rural Reform
2130701	Subsidy to village level
214	Transportation expenditure
21401	Highway waterway transportation
2140101	Administrative operation
2140102	General administrative affairs
2140104	Highway construction
2140106	Highway maintenance
2140110	Road and transportation safety
2140112	Road transport management
21404	Subsidies for transportation reforms in refined oil price reforms
2140402	Subsidies for rural road passenger transport
2140499	Refined oil price reform subsidizes other expenditures
21406	Vehicle purchase tax expenses
2140601	Vehicle purchase tax for highway and other infrastructure construction expenses
2140602	Vehicle purchase tax for rural road construction expenditure
2140699	Vehicle purchase tax other expenses
21499	Other transportation expenses
2149999	Other transportation expenses

Table 9: Expenditures on rural roads by functions, 2019, mil RMB

	On-plan roads	Off-plan roads	Subtotal
<b>Construction</b>	<b>850</b>	<b>617</b>	<b>1,467</b>
New construction	3	351	354
Upgrading	847	266	1,113
<b>Maintenance</b>	<b>464</b>	<b>150</b>	<b>614</b>
Routine inspection	10	0	10
Routine maintenance	32	0	32
Minor repair	35	8	43
Preventive maintenance	3	0	3
Repair and maintenance	45	99	144
Emergency maintenance	72	12	84
Dangerous bridge rehabilitation	90	13	103
Safety features	166	9	174
Road management	5	4	8
Road operation	2	-	2
Others	7	5	12
<b>Total</b>	<b>1,314</b>	<b>767</b>	<b>2,081</b>

Data source: Finance Bureaus of the eight pilot counties

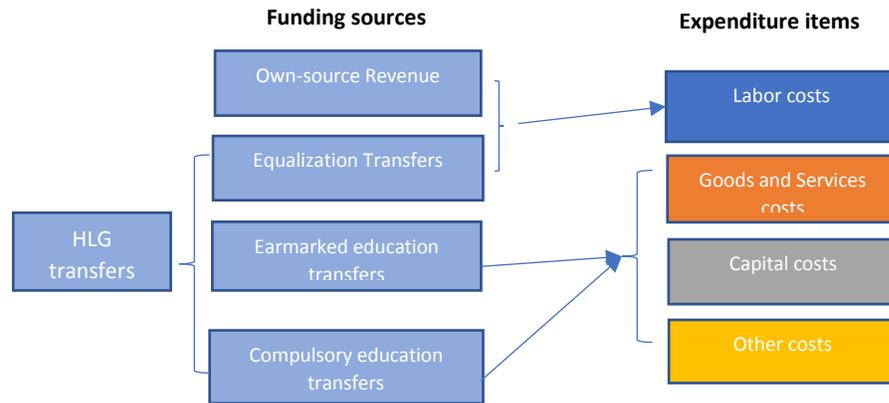
## B. Financial Sustainability and Funding Predictability

43. **The overall fiscal situation in Hunan Province is sustainable but some of the poorer counties face fiscal pressures.** Hunan has exhibited robust growth in recent years, with an average GDP growth rate of 9.3 percent in 2011-2019. While COVID-19 has led to a sharp slowdown this year, Hunan – like the rest of China- has started to recover. This has supported solid fiscal performance and Hunan Province has a track record of fiscal discipline and prudent control of on-budget liabilities. The reported consolidated budget deficit of Hunan Province has remained below 3 percent of GDP. Reported on-budget debt is relatively low at 25.6 percent of regional GDP in 2019. However, like in other provinces, there are significant quasi-fiscal operations outside the core budget. By 2019, total PPP investment accounted for 12.7 percent of regional GDP. Among the pilot counties there is some variation in fiscal capacity and the poorest ones face more acute fiscal pressures. Direct debt in Guidong and Rucheng counties is high at 86.4 and 43.3 percent of regional GDP, due primarily to high public investment in these two poor countries. Direct government debt is lower than 20 percent of regional GDP in other 6 pilot counties. The PforR is supporting both province and counties to further solidify their overall fiscal frameworks to ensure sustainable financing including to key public services such as education and transport.

44. **The sources of funding for the supported sub-program -both compulsory education and rural roads- have been relatively stable.** The share of compulsory education expenditure in total general public finance budget has averaged about 10 percent among eight pilot counties, and the share of compulsory education expenditure in GDP stood at slightly above 2.5 percent. Expenditure on rural roads was equivalent to 0.6 percent of GDP or 4.4 percent of public spending.

45. **Compulsory education expenditures are financed by county own-source revenue and HLG transfers.** These include equalization transfers, the compulsory education transfers and other ear-marked education transfers. As illustrated in Figure 6, the labor costs are covered by the county own-source and the equalization transfers, while the non-labor costs are covered by the compulsory education transfers and other ear-marked education transfers. The central and provincial governments stipulate the minimum expenditures for most items and provide substantial share of financing to counties. For instance, the minimum operation expenditure per student per year is set at 600 yuan for primary school, 800 yuan for junior secondary school, and additional 200 yuan for boarding school. Of these, the central government finances 60 to 80 percent and Hunan province finances 16 to 26 percent pending on the financing status of the county. For the poorest counties classified in category III such as Yizhang, Rucheng, Pingjiang, Guidong and Chaling, the county governments shall provide only 4 percent co-finance, while the most advanced county such as Liuyang will have to co-finance 16 percent, and the counties in category II co-finance 26 percent.

**Figure 6. Funding sources of compulsory education**



46. **While rural transport is devolved to county governments, HLG still finances a big share, 31.4 percent in 2019.** The central and provincial transfer was allocated through two main transfer programs and both programs were linked with tax revenues: vehicle purchase tax and fuel tax. The vehicle purchase tax revenue is earmarked for roads construction, including new roads and upgrading of existing roads. The fuel tax revenue is earmarked for roads major maintenance (routine maintenance is not eligible to finance with fuel tax revenues).

**Table 10: Expenditures of rural roads by source of funding, 2019, mil RMB**

	Source of funding				Subtotal	Percent
	central and province transfer	Prefecture transfer	County own revenue	non-budget fund		
<b>On -plan roads</b>	<b>371</b>	<b>111</b>	<b>448</b>	<b>384</b>	<b>1,314</b>	<b>63.1%</b>
<b>Construction</b>	167	89	245	349	850	40.8%
New construction	-	-	3	-	3	0.1%
Upgrading	167	89	242	349	847	40.7%
<b>Maintenance</b>	204	23	203	35	464	22.3%
<b>Off-plan roads</b>	<b>96</b>	<b>75</b>	<b>426</b>	<b>170</b>	<b>767</b>	<b>36.9%</b>
<b>Construction</b>	93	73	344	107	617	29.7%
New construction	46	28	222	55	351	16.9%
Upgrading	47	45	121	53	266	12.8%
<b>Maintenance</b>	4	2	82	63	150	7.2%
<b>Total</b>	<b>468</b>	<b>186</b>	<b>874</b>	<b>554</b>	<b>2,081</b>	<b>100%</b>
% of total	22.5%	8.9%	42.0%	26.6%	100.0%	

Data source: Finance Bureaus of the eight pilot counties

47. **Financial sustainability is not a major concern for the Program.** While the COVID-19 pandemic is anticipated to have impacts on overall financial situation in Hunan province and in the eight pilot counties this year, this is not expected to put the overall financial sustainability of the program at risk. To ensure adequate resources to finance public services and cushion the impact on jobs and households' income, the national government in 2020 increased transfers to county governments.

48. **Nevertheless, the review of the county governments' expenditures on rural roads revealed the prevailing presence of unfunded mandates.** The off-budget funds financed about 26.6 percent of total expenditures on rural roads. This may bring potential risks to the county finances. The interventions supported under this Operation will harden the budget constraint (DLI 1) and effectively decentralize the decision making of rural roads (DLI6). These measures will strengthen the fiscal sustainability.

### C. Expenditure Performance

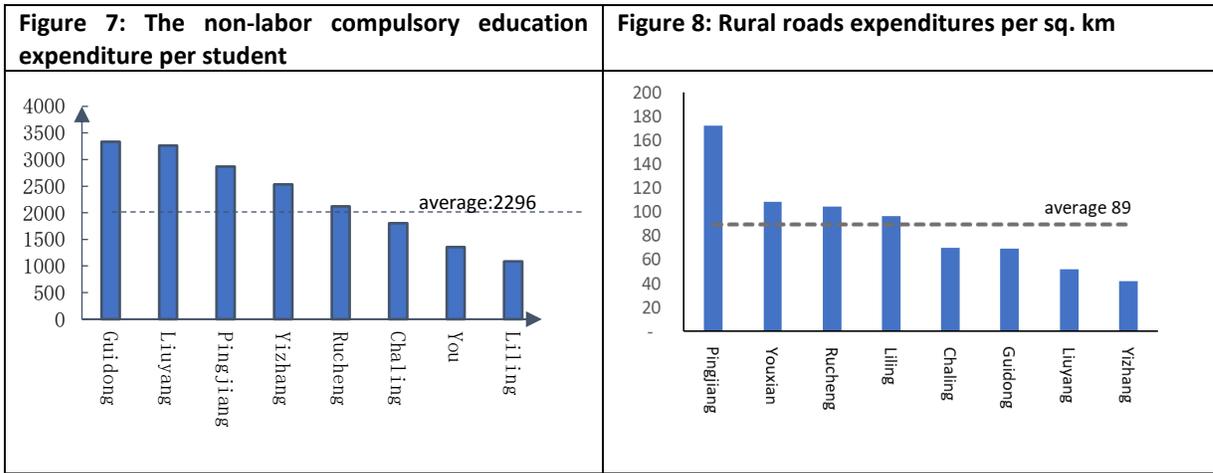
49. **Hunan province has adopted performance evaluation for budget expenditures including in compulsory education and rural roads.** Indicators are widely used in assessing the performance. However, in most cases, the outcome indicators are defined vaguely. For example, in evaluating the outcome for the school building maintenance and renovation fund in Yizhang, there are three outcome indicators: creation of conditions for local students to enjoy quality education services; sustainable impact of subsequent operation and effectiveness of the project; satisfaction of students with the implementation effectiveness of the project. All the three indicators are measured subjectively as significant, good, general, poor and very poor. So far, no indicators related to the student performance are adopted in the performance evaluation of the expenditures on compulsory education. As for the rural roads, the provincial transport department only monitors and evaluates the county's performance related to on-plan roads. The province relies on the self-reporting of counties on the performance of rural roads. According to the sample survey conducted by the PDOT, the performance of rural roads services reported by the counties is generally over-stated.

50. **The Program preparation worked to assess the impact of HLG transfer in incentivizing the counties' expenditure performance.** The general review of the inter-government fiscal transfers suggests that counties were being granted greater general autonomy in how to use transfer financing. The existing system of specific purposes transfers have tended to be based on input-based parameters. The province itself is interested in building in more elements of performance-based allocations, including by having the counties more systematically and credibility report back on key areas of public service delivery (including the actually state of the whole road network for ensuring village transport access). In moving to performance, the authorities are also wanting to ensure that these fiscal transfers would ensure that lagging counties catch-up, while leading counties continue to do well. The proposed PforR supports in both the roads and education sectors is therefore paying careful attention to ensure that disparities are not increased by a shift away from rigid input-based allocations to more outcome performance support.

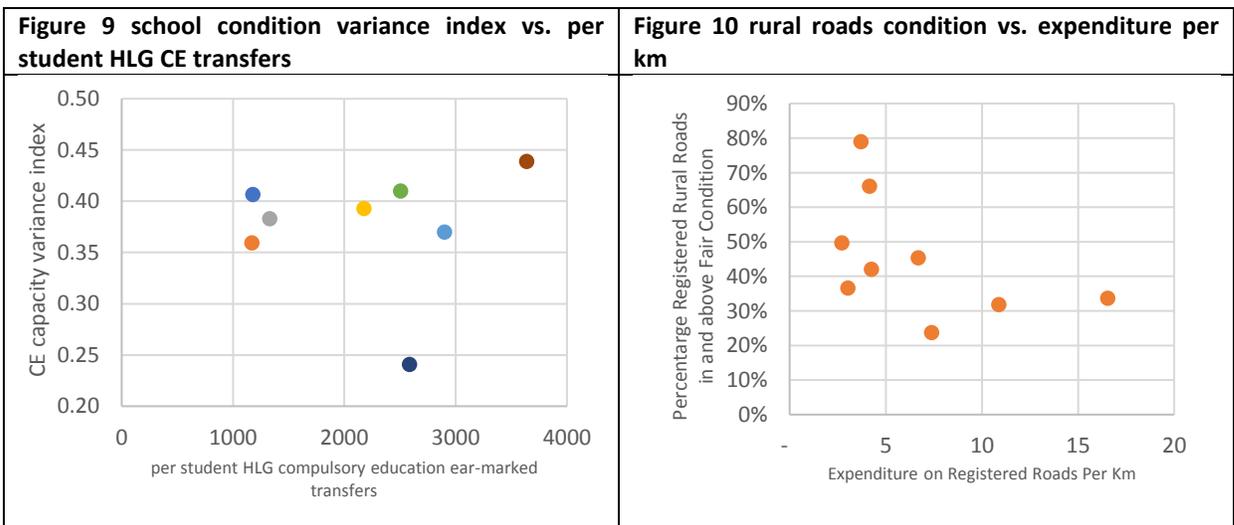
51. **The budget outlay in eight pilot counties are generally in compliance with the policies and instructions of the high-level government.** China national government sets up unit costs for many expenditure items, including the per student operating expenditure at primary and junior secondary school, the routine maintenance cost of rural roads per mileage and the construction cost of new roads per mileage. Counties are allowed to top up according to their local priority and up to the availability of their own revenues. Compulsory education consists of primary education and junior secondary education, which account for 60 percent and 40 percent of the total expenditures respectively. By the expenditure economic classification, labor cost (salary and welfare) is the biggest item accounting for about 71.5 percent, and the subsidies takes a share of 8.2 percent in 2019. The discretionary expenditures (goods and services and capital spending) account for around 20 percent. Rural roads management is bifurcated into on-plan roads and off-plan roads with an expenditure ratio of 63:37. Transport sectoral specialists acknowledged that the maintenance, particularly proactive maintenance, is significantly under-funded. Of the total expenditure, the ratio of construction to maintenance is around 70:30. And of the total expenditure on maintenance, the proactive maintenance, including routine inspection, routine maintenance, minor repair and other proactive maintenance, accounts for only 15.7 percent in total maintenance expenditure.

52. **The expenditure framework assessment revealed that there is considerable variance in budget expenditures on compulsory education and on rural roads across the counties.** As Figure 7 shows, the

non-labor expenditures per student vary significantly across counties. That of Liling and Youxian is only about one third of that of Guidong and Liuyang. As Figure 8 shows, the expenditure on rural roads per square kilometer also varies across counties.



53. **The HLG transfer to finance compulsory education is formula-based, but appears to fall short in achieving the policy target of quality and equitable compulsory education.** Since 2017, the central government has emphasized the quality and equality as two main targets of compulsory education development in China. However, the majority of HLG transfers are based on the number of students. For few exceptional items that base the transfers on performance, the performance is mainly measured by the school conditions. As illustrated in Figure 9, the variance of school conditions is high within each county, except for Rucheng. Counties with high per student HLG transfers doesn't outperform other counties. As there is no monitoring of student performance, it is not clear how the variation in inputs affects the education outcome.



54. **The HLG transfer to finance rural roads is based on input parameters that can fall short in providing optimal rural transport services for available fiscal resources.** While the rural transport is assigned as county government responsibility, the provincial government still provides strong control

through a network plan, setting targets of construction, and financing. All transfers for rural roads were allocated to counties based on input costings. Counties could receive 1.4-million-yuan per kilometer subsidy for the construction of key county and township roads (or 1.6-million-yuan for poverty counties), 7-thousand-yuan per kilometer for the maintenance of county roads, and 3500 yuan per kilometer for the maintenance of township roads, and 1000 yuan per kilometer for the maintenance of village roads. This subsidy to maintenance is limited to major maintenance and not for proactive maintenance. The province also provides additional subsidies for reconstruction of dangerous bridges which is also input based. The HLG subsidies are limited to the roads on the recognized on the network plan. Roads that were constructed at the mandate from another line ministry (such as Poverty Reduction Office and Ministry of Agriculture) or the county's own initiative are generally off the plan and have to be financed with other funds such as poverty reduction transfer or county's self-source revenues. Counties in general provided even less finance for the maintenance of off-the-plan roads. In terms of the actual access that county networks currently provide and how their maintenance financing is secured, the bifurcation of the on-plan versus off-plan systems point to the fragmentation in budgeting/transfer/institution.

#### D. Recommendation

**55. The expenditure framework presents an adequate basis for the government to deliver rural public services.** Budgets appear largely adequate relative to expected results and aggregated fiscal sustainability issues were not identified as a core concern associated with the expenditures. The central and provincial governments finance over 50 percent of compulsory education and close to one-third of rural roads in 2019. Both the central and provincial governments are committed to gear more budgets toward the poverty counties to cushion the impact of COVID-19 pandemic.

**56. The expenditure framework is deemed adequate, with following points need to be addressed during implementation:**

- Though county governments provide the majority of the budget funding for compulsory education and rural roads, higher-level transfers are indispensable and constitute important policy leverage. Sound design of transfer formula can help to provide right incentives for achieving the desirable policy targets of the higher-level governments and realizing overall value for money for the budget funds and will be addressed.
- In compulsory education, local performance evaluation and HLG transfers are not based on sound outcome indicators, and HLG transfers appears to fall short in achieving the policy target of quality and equitable compulsory education. The performance-based transfer programs should help address this gap, if it is complemented with a comprehensive monitoring and evaluation of education performance including student learning performance. Comprehensive evaluation along the results chain from education inputs, outputs and outcomes (inspection and assessing learning outcome) will be critical to inform policy making.
- In rural roads, the introduction of performance based HLG transfer should be combined with measures to empower county governments in decision making while holding them accountable for results. The transfer needs to be designed in the way that is conducive for county government to manage the rural transport and motivate them to deliver policy objectives. In tandem, the county government can improve the efficiency of rural transport expenditures starting with producing an integrated transport sector budget report and by developing the institutional capacity that is needed to achieve optimal level of road service within the budget envelope.

57. **Hunan should make recourse to a 25 percent PforR advance disbursement to manage the transition to performance-based transfer.** The province will need to manage a fiscal transition to full performance-based transfers at the margin, requiring some additional fiscal resources. The transition strategy will need to particularly ensure that poorer localities are not adversely impacted by the transition.

#### IV. Economic Justification

##### Expected Program Outcomes

58. **The program provides the framework and financing to strengthen institutions for intergovernmental fiscal management and delivery of key rural services in selected 8 counties of Hunan Province.** Some benefits of the program are more easily amendable to quantification, while others are difficult to measure. The primary direct economic benefits pertain to improved efficiency and effectiveness of public spending, and hence improved service delivery at the subnational level. In addition, better public services are expected to be associated with additional indirect effects. For example, improved compulsory education will contribute to more equitable human capital formation including in rural areas which is expected to generate long term economic and social returns, in terms of higher wages and economic growth. Similarly, improved road asset management and more balanced spending mix with adequate operation and maintenance will reduce the lifecycle costs of road assets, enhance connectivity and contribute to expanded economic opportunities. Given the complexity of the underlying results chains, not all benefits can be readily attributed to program interventions and quantified.

59. **The cost benefit analysis focuses on measurable sources of economic benefits that are generated through increased operational efficiency and reduced administrative costs.** Specifically, a break-even analysis is conducted to determine the necessary rate of improvement in spending efficiency that would need to be achieved through the program in the selected 8 counties to cover the incremental, loan-financed cost of the program (the IBRD loan) so that the net present value (NPV) of the economic benefits is equal to the debt related cashflow.

##### 60. Key Assumptions are as follows:

- **Program costs:** Total program financing is US\$6.168 billion, including US\$5.968 billion Government funded and US\$200 million financed by an IBRD loan. However, government funded expenditures would occur no matter whether the program will be conducted or not. The incremental spending of conducting this program is the IBRD loan of US\$200 million, which is assumed to be disbursed according to the estimated disbursement schedule based on the targeted DLI achievement provided in the PAD.
- **Cost of financing:** We assume the NPV discount rate (cost of financing) would be 3.25 percent, equal to the historical average of the yield of the 10-year treasury bond from January 2016 to November 2020. We also assume that cost of financing is held constant over the program implementation period (2020~2044).
- **Foreign exchange rate:** The exchange rate of EUR/RMB is 7.8811 at the month-end prior to the negotiation date. During this period, the exchange rate of EUR/USD is 1.1988. The FX rates are assumed to hold constant over the program implementation period (2020~2044). The assumption will be altered

in the sensitivity analysis.

- **Interest rate:** Estimated loan interest rate is 0.47 percent, based on the applied spreads, which is EURIBOR minus 0.53 percent plus 1 percent spread. The interest rates are assumed to hold constant over the program implementation period (2020~2044).
- **Government spending:** The total government spending of the 8 counties in 2018 is 72.5 billion RMB, including 9.5 billion RMB spent on education and transportation. Taken into account of the COVID-19 impact and the slowing trends of China's growth, we assume the nominal growth rates of government spending in 2020-2024 would be 3.0, 8.9, 7.0, 6.8 and 6.8 percent, respectively. Nominal growth rates in government spending are assumed to be averaged at 5 percent from 2025-35 and 3.6 percent from 2036-44, respectively. Spending on education and transportation is projected to grow proportionally with the total spending.
- **Repayment schedule of the IBRD loan:** According to commitment-linked amortization repayment schedule listed in the Loan Agreement, the authorities will repay the IBRD loan starting from 2026 in a duration of 19 years. The annual principal payment will be US\$10.52 million from 2026-2043 and US\$10.64 million for 2044. Interest will be charged on such principal amount withdrawn and outstanding from time to time at a rate equal to the rate of interest assumed above.

## Results

61. **Under baseline assumptions, the analysis suggest that the break-even point is achieved when the efficiency of government spending of the 8 counties improves by less than 0.05 percent, or less than 0.3 percent if only education and transport spending are considered.** That is, to guarantee a positive NPV, the governments of the 8 counties need to save operating costs by at least 0.03 percent of total fiscal spending of the 8 counties or 0.24 percent of government spending on education and transportation over the period of 2020-44 (Table 11).

## Sensitivity analysis

62. **These results are robust to sensitivity analysis across key variables which would raise the breakeven point to 0.03~0.04 percent efficiency gains of overall government spending or 0.24~0.29 percent, if just education and transport spending is considered.** The analysis for three alternative scenarios is carried out: (1) a higher RMB-to-EUR exchange rate at 8.67 over the project life cycle; (2) lower growth of government spending after 2025; (3) a 20 percent rise in project costs to US\$240 million. Key assumptions and results of the sensitivity analysis can be found in Table 11 and 12 below.

Table 11: Summary of Benefits and Cost, Baseline Scenario (Million EUR, Nominal)

		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
<i>Inflows</i>	Spending efficiency gains	3.3	3.6	3.9	4.1	4.4	4.7	5.0	5.3	5.6	5.9	6.2	6.5	6.8
	Disbursement of the IBRD loan	0.0	43.0	18.9	44.0	43.0	17.9							
	<b>Total Inflows</b>	<b>3.3</b>	<b>46.6</b>	<b>22.8</b>	<b>48.1</b>	<b>47.4</b>	<b>22.6</b>	<b>5.0</b>	<b>5.3</b>	<b>5.6</b>	<b>5.9</b>	<b>6.2</b>	<b>6.5</b>	<b>6.8</b>
<i>Outflows</i>	Project investment	0.0	-43.0	-18.9	-44.0	-43.0	-17.9							
	Repayment of the IBRD loan	0.0	0.0	0.0	0.0	0.0	0.0	-9.5	-9.5	-9.5	-9.4	-9.4	-9.3	-9.3
	<b>Total Outflows</b>	<b>0.0</b>	<b>-43.0</b>	<b>-18.9</b>	<b>-44.0</b>	<b>-43.0</b>	<b>-17.9</b>	<b>-9.5</b>	<b>-9.5</b>	<b>-9.5</b>	<b>-9.4</b>	<b>-9.4</b>	<b>-9.3</b>	<b>-9.3</b>
<i>Net Cash Flow</i>	<b>Net Cash Flow</b>	<b>3.3</b>	<b>3.6</b>	<b>3.9</b>	<b>4.1</b>	<b>4.4</b>	<b>4.7</b>	<b>-4.5</b>	<b>-4.2</b>	<b>-3.9</b>	<b>-3.5</b>	<b>-3.2</b>	<b>-2.9</b>	<b>-2.5</b>
		2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
<i>Inflows</i>	Spending efficiency gains	7.0	7.3	7.6	7.9	8.2	8.5	8.8	9.1	9.4	9.8	10.1	10.5	
	Disbursement of the IBRD loan													
	<b>Total Inflows</b>	<b>7.0</b>	<b>7.3</b>	<b>7.6</b>	<b>7.9</b>	<b>8.2</b>	<b>8.5</b>	<b>8.8</b>	<b>9.1</b>	<b>9.4</b>	<b>9.8</b>	<b>10.1</b>	<b>10.5</b>	
<i>Outflows</i>	Project investment													
	Repayment of the IBRD loan	-9.3	-9.2	-9.2	-9.1	-9.1	-9.1	-9.0	-9.0	-8.9	-8.9	-8.8	-8.9	
	<b>Total Outflows</b>	<b>-9.3</b>	<b>-9.2</b>	<b>-9.2</b>	<b>-9.1</b>	<b>-9.1</b>	<b>-9.1</b>	<b>-9.0</b>	<b>-9.0</b>	<b>-8.9</b>	<b>-8.9</b>	<b>-8.8</b>	<b>-8.9</b>	
<i>Net Cash Flow</i>	<b>Net Cash Flow</b>	<b>-2.2</b>	<b>-1.9</b>	<b>-1.6</b>	<b>-1.2</b>	<b>-0.9</b>	<b>-0.6</b>	<b>-0.2</b>	<b>0.1</b>	<b>0.5</b>	<b>0.9</b>	<b>1.3</b>	<b>1.5</b>	
<i>Results</i>	Share of cost reduction in government spending on education and transportation	<b>0.24%</b>												
	Share of cost reduction in total government spending	<b>0.03%</b>												

Table 12: Key Assumptions for the Baseline and Alternative Scenarios

Assumptions	Baseline	Case1	Case2	Case3
FX Rate, EUR/RMB	7.88	<b>8.67</b>	7.88	7.88
Total IBRD Loan, USD mn	200	200	200	<b>240</b>
Growth in fiscal spending	4.1%	4.1%	<b>3.4%</b>	4.1%

Table 13: Summary of Results for the Baseline and Alternative Scenarios

Results	Baseline	Case1	Case2	Case3
Annual cost reduction to achieve the breakeven point, EUR mn	3.33	3.97	3.69	4.00
Annual cost reduction as share of government spending on education and transportation, %	0.24	0.28	0.26	0.29
Annual cost reduction as share of total government spending, %	0.03	0.04	0.03	0.04

## V. Technical Risks and Mitigation Measures

63. **The technical risk of this proposed PforR is deemed moderate with significant mitigation measures.** Major risks stem from 1) potential constraints imposed by national laws and regulations; 2) inadequate coordination across departments and across various tiers of governments; and 3) weak and uneven institutional capacity among eight pilot counties. Both the client and the World Bank are committed to both the successful execution of the Program and ensuring the sustainability of the reform processes beyond the lifetime of the project. Significant efforts have been made to mitigate the identified risks, particularly to ensure that reforms are mainstream in government processes and systems at the provincial and county levels.

64. **Hunan has set up institutional arrangements with a strong focus on central leadership.** Strategic guidance will be provided by the steering committee chaired by Director-General of DOF, who directly reports to the governor of the province, and is comprised of Deputy Director-Generals of PDOF, PDRC, PDOT, PDOE and PAGS. At the county level the mayors have overall responsibility for the Program implementation within their jurisdiction. Moreover, in order to ensure coordination for project preparation and implementation as well as political commitment in the reform areas proposed 4 thematic working groups: 1) comprehensive coordination group, 2) county public finance group; 3) compulsory education group; and 4) rural roads, have been set at the PMO level.

65. **A capacity building strategy has been developed to mitigate risks associated with capacity gaps in selected counties.** The strategy will take into account both the ‘supply side demand’ (responding to the Bank team’s recommendations based on the capacity gap analysis) and the ‘demand side demand’ (responding to the needs of pilot counties and departments to address their specific capacity challenges). Hunan PMO will prepare annual capacity building plans and biannual progress reports during the implementation stage. The Bank team will monitor progress and provide implementation support where necessary.

66. **The operation through the DLIs and PAP will support specific actions to mitigate the risks associated with inadequate systems or limited data availability.** Inadequate systems as well as asymmetries in data collection and reporting both at the provincial and county levels have been assessed as a critical challenge for the Hunan province to advance the implementation of the rural revitalization program. To mitigate such a risk, this Operation will support revamping the current government system for improved debt recording, monitoring and management, development of guidelines on open data protocols to address information asymmetry with regard to collection, curation and publication of budget information in the selected counties, support a complete inventory of rural road assets and support the adoption of an evaluation system as well as a comprehensive database for transmitting data to the PDOF and PDOE. The Provincial Administration of Government Services (PAGS), while not a direct

beneficiary of the Operation will have an advisory and supervisory role regarding the IT systems to ensure system interconnectivity.

67. **Essential steps have been incorporated in the PAP.** The PAP has been developed containing key actions that will help mitigate shortcomings and supports the objectives of the two result areas in addition to addressing fiduciary, environment and social issues as per the assessments performed. Moreover, as the support required to strengthen the technical capacity of the selected counties has not been linked to a particular DLI, the preparation, execution and monitoring of the annual capacity building plan has been included as a core activity in the PAP.

68. **The project has adopted a programmatic and sequential approach for defining the Disbursement Linked Results (DLRs).** The DLRs are designed in a way to incentivize progression over the four-years around important milestones instead of focusing on the final output or outcome. In order to address the risk associated with the heterogeneity of the selected counties, DLIs and DLRs are also designed to offer incentives for stronger counties that achieve the DLI in a timely manner to improve performance further, while rewarding weaker/lagging counties for strong commitment. Moreover, the multi-year program measuring results across four fiscal years will help to mitigate technical risk associated with weak capacity of the selected counties that might jeopardize the realization of the DLIs. It will also provide time for implementing the complex reforms and incentivizing the institutionalization of the reform measures and for scaling them up across the entire province.

69. **An adaptive-learning approach will be considered to allow evidence-based course corrections during the implementation of the project.** In order to mitigate the risks that performance-based transfer mechanisms to be implemented for rural roads and CE do not deliver the expected results or lead to the expected changes in behavior, the built-in of an evaluation system has been proposed as part of the operation. This evaluation system will allow result information to be collected and used by the county governments to design targeted measures to improve their ongoing management and performance as well as to inform the province to introduce modifications and possible adjustments to the provincial transfer mechanism. The Bank team will provide technical support during the implementation to ensure that the due adjustment is made in a sound manner and supported with strong evidence, and the principle of performance-orientation is stick to.

## VI. Conclusion

70. **In summary, the technical assessment concludes that the proposed PforR is strategically relevant, technically sound, and financially sustainable.**

## Annex 1: Proposed Capacity Building Activities

<b>DLIs/RIs</b>	<b>Areas of Capacity Building</b>	<b>Deadline</b>	<b>Focal Agencies</b>
	Develop program operation manual	March 2021	PMO
<b>DLI 1</b>	TA on subnational debt risk assessment	November 2021	PDOF
	TA on developing subnational debt management strategy	November 2022	PDOF
	International workshop and study tour on debt management		PDOF
	Training to county governments on subnational debt management	At least once a year	PDOF
<b>DLI 2</b>	Training on projection of HLG transfer and preparation of budget plan	December 2020	PDOF
PDO Indicator 1 & PAP	TA on drafting county-level government public financial management reform action plan, based on the findings from PEFA reports 2020	December 2020	PDOF
	Training to county governments on the implementation of PFM reform and peer learning events	No less than once a year	PDOF
	PEFA assessment for 8 counties in 2024	March 2024	PDOF
<b>DLI 3</b>	International Workshop on Open Budget Protocols - International Standards	March 2021	PDOF
	TA support for drafting Guidelines on Open Data Budget Protocols	June 2021	PDOF
	Training and TA on centralized dynamic "One" open budget portal	June 2021	PDOF
	TA for developing manual for guiding counties to develop Citizens' budget produced	March 2021	PDOF
	Workshop(s) on communication strategies and tools for awareness raising and dissemination of budget information	June 2021	PDOF and Counties
	Training to counties on the preparation of the CB and dissemination	June 2021	PDOF and Counties
	TA support the production of the citizen budget in counties	October 2021	PDOF and Counties
<b>DLI 4</b>	International workshop on rural roads asset management	June 2021	PDOT
	TA on developing guideline on rural roads asset management	September 2021	PDOT
	TAs to counties on developing rural roads asset management strategy	Once a year in 2021-2024	PDOT and counties
	Study tour on rural roads management	June 2022	PDOT

<b>DLI 5</b>	TA for developing a performance-based financing implementation guideline for rural roads maintenance	October 2021	PDOF & PDOT
<b>DLI 6</b>	TAs for developing a performance-based financing implementation guideline for compulsory education;	October 2021	PDOF & PDOE
<b>DLI 7</b>	TAs for developing a comprehensive monitoring and evaluation approach and design a computerized monitoring system for collecting and analyzing all the data	October 2021	PDOE
	Conduct some studies on CE	June 2024	PDOE
	Conduct overseas study tours and training to Canada, Japan, European countries etc. on improving quality and equity of compulsory education; Organize and join some workshops, forums and field studies	Before May 2024	Provincial DOE/DOF and counties
<b>PDO Indicator 4</b>	Conduct case studies for systematic identification, capture and sharing of lessons	2023	PMO, PDOF, PDOT, PDOE