

INSTITUTIONAL DEVELOPMENT PLAN

1. The road institutions of Yunnan are increasingly tasked with delivering larger work program, within limited budgets, and for a higher level of performance. Economy-wide reforms, such as market orientation, stronger attention to environment and human health, and the creation of social safety nets, will be challenging the way Yunnan's road institutions carry out their tasks. This will put significant pressure on YHAB, and particularly on its manpower. There is a need for applying modern and new thinking, which can be introduced through trainings, new equipment, the use of new management principles and systems.

2. During project preparation, it was agreed that the following objectives will be pursued through institutional development and policy reform activities:

- (i) To improve the cost-effectiveness of maintenance works by stimulating competition;
- (ii) To pay greater attention to the environmental and social impacts of the road sector;
- (iii) To reduce the safety risk associated with the roads;
- (iv) To increase planning efficiency by developing and using modern road asset management software;
- (v) To enhance accountability at all levels of the organization through the use of results-based management; and
- (vi) To continually increase the knowledge base of the staff.

A. Commercialization of Road Maintenance

3. The commercialization of road maintenance is a long-term objective of the Ministry of Transport. In Yunnan, road construction works, and the maintenance of expressways and county roads is largely commercialized. Maintenance of the trunk highway network under YHAB's management is carried out by force-account by YHAB. The heavier rehabilitation works are carried out by companies set under YHAB's general section, or by the general sections' equipment stations, through contracts awarded through limited bidding, internal to YHAB. Routine maintenance works are carried out by the maintenance sections of YHAB. The Yunnan Integrated Roads Development Project introduced the use of National Competitive Bidding for highway rehabilitation works. Early results showed that outsourcing maintenance may bring cost reductions of 20–25%.

4. Actions Agreed:

- (i) Contract-out a share of the works under the Project through National Competitive Bidding;
- (ii) To stimulate competition, open the eligibility criteria to companies with Class II construction certification, and consider transforming the largest companies under YHAB's general sections into fully independent state-owned companies; and
- (iii) Evaluate the cost-efficiency of outsourced rehabilitation works compared with traditional delivery methods (report communicated to ADB by 2016).

B. Environmental and Social Management

5. While Yunnan is endowed with a strong environmental and resettlement management policy framework for road construction works, road maintenance works are excluded from environmental regulations, and there is no mechanism for addressing social concerns except for land acquisition and demolition impacts, which are rare. Due to the fragmentation of the administration into very specialized agencies, YHAB has not had staff with environmental management or social development functions. Environmental and social considerations are not explicitly considered during planning, design and implementation of maintenance works. This situation contrasts with developed countries, where road agencies are held accountable for their environmental and social impacts, and as a result have developed advanced processes and skills to manage these impacts.

6. Actions Agreed:

- (i) Create an Environmental, Social and Safety Unit in YHAB, and staff it with at least one environmental, one social and one road safety staff; subject to evaluation of their action, the unit would be strengthened and formalized after a few years;
- (ii) Nominate focal points for environment and social management in each general section of YHAB;
- (iii) Implement environmental management plans or standard environmental operating procedures on all project roads;
- (iv) Systematize consultations with local communities before and after works on Project roads;
- (v) Identify opportunities for enhancing the positive impacts of intermediate and heavy maintenance through social development actions, and coordinate their implementation;
- (vi) Based on the lessons learnt, prepare and approve environmental management guidelines applying to all intermediate and heavy works carried out by YHAB;
- (vii) Define environmental and social performance measures for the intermediate and heavy maintenance program and carry out regular monitoring of results; and
- (viii) Revise performance evaluation framework of general sections and maintenance sections to introduce environmental and social indicators.

C. Road Safety

7. Road safety is a priority agenda for the Yunnan Provincial Government. Despite some improvements, the institutional structure for road safety remains weak. Only the public safety bureau (PSB) is held accountable for road safety results, even though it is only in charge of the enforcement of road safety regulations on users. Other actors, namely the Yunnan Provincial Department of Transport, the Health Bureau and the Department of Education, have only a limited commitment to this agenda, and tend to work in silos. During project preparation, YHAB has not been able to receive detailed road safety statistics for the road targeted under the project, nor accident analysis records. YHAB itself has a safety division, which is in charge of the safety of the works, but not of safety programs. Road safety engineering programs are carried out under MOT funding, but without formal policies or institutional structures.

8. **Actions Agreed:**

- (i) Create and staff the Environmental, Social and Safety Unit in YHAB (see para. 6);
- (ii) Carry out safety assessments, and design safety measures on all subprojects to limit the safety risk to a moderate level;
- (iii) Create procedures and guidelines for road safety audits, and gradually systematize road safety audits on heavy maintenance works;
- (iv) Initiate coordination with the PSB for accident data analysis;
- (v) Draft and approve guidelines for road safety engineering under road maintenance works;
- (vi) Develop, implement and evaluate road safety treatments new to Yunnan for overtaking, junction design, directional signing, traffic calming, and roadside safety;
- (vii) Formulate network speed limit strategy;
- (viii) Review overloading control strategy and prepare overloading station development plan for YPG approval; and
- (ix) Implement road safety awareness programs in communities affected by heavy maintenance works.

D. **Road Asset Management System**

9. The basic prerequisite for modern management of roads is precise and timely information on the road network characteristics, condition and traffic. This information is used on a day to day basis for planning, construction and maintenance activities. YHAB has gradually developed several road databases and survey processes covering each of those aspects. However, their accuracy is yet imperfect, the various systems do not communicate with each other, and a large body of information is generated outside of the system (e.g. maintenance sections carrying out works without informing the headquarters, or construction works planned by other layers of government). In the early 2000's, YHAB also tried to implement a pavement management software. However, because of the limitations of its basic information systems, it was not able to sustain the effort. Also, the maintenance planning tool included in the system was too basic to be of a real use to YHAB. There are now much more advanced software platforms available in PRC and elsewhere. The Chinese Pavement Management System (CPMS-2007) is a good tool for managing road data information and generating standard reports. The Highway Design and Management IV software, created initially through World Bank and ADB efforts, has strong pavement condition prediction and works planning capacity.

10. **Actions Agreed:**

- (i) Create a unified road database covering all road inventory, equipment, bridges, condition and traffic; create a new spatial reference system using a geographic information system;
- (ii) Implement a pavement management system, a routine maintenance management system and a road information system (using the CPMS architecture); develop an export/import function between the system and HDM-IV for planning purposes;
- (iii) Carry out annual surveys of road network inventory, condition and traffic;
- (iv) Make available some online information on road condition (traffic information system);
- (v) Prepare each year a three-year rolling investment program using the CPMS and/or HDM-IV, on the basis of updated road condition information;
- (vi) Update the road maintenance strategy before each five year plan; and

- (vii) Ensure that the Yunnan Scientific Research Institute of YHAB is given sufficient authority to centralize the information on ongoing and planned road works.

E. Results-Based Management

11. Results-based management in the public sector is essentially about providing a government that works better and costs less. Result-based management systems are based on a culture of accountability rather than compliance. General accountability means that a large share of the administration can be held for what it has achieved, given its goals, priorities and means. By these standards, the YHAB has already a strong backbone of results-based management systems. It is fully accountable for delivering its five-year plan, its management is motivated on results and receives specific targets. This structure is replicated at all levels of YHAB. The performance of general sections and maintenance sections is assessed each year on a long list of indicators, ranging from the condition of the road network to the implementation of government orders. This assessment is linked to a bonus/penalty system. The systems has however some limits, namely a limited emphasis on cost-control or on long-term results, the difficulty to evaluate results in a context of limited budgets, the silo organization of the administration, the weight of a norms and standards, and the lack of transparency or user information.

12. Actions Agreed:

- (i) Implement two performance-based road maintenance pilots, under which contractors / maintenance sections get paid for delivering an expected level of service to users, instead of for inputs;
- (ii) Design an annual Performance and Sustainability Assessment report providing a comprehensive picture of YHAB's maintenance program, and the comparison of targets and results for each year;
- (iii) Set up a Sector Roadmap under the Project setting targets for the period 2013-2017 for a selected number of indicators under the Performance and Sustainability Assessment; and
- (iv) Jointly review the progress over the Sector Roadmap each year with ADB, update it and agree on any remedial action as needed to meet the targets.

F. Training Plan

13. A draft training program has been prepared for each area part of the institutional development plan. On-the-job training will be provided throughout the project by a project management consultant. About 100 person-months of overseas training and 500 person-months of domestic training will be provided through the project.