

Country Name	The Project for the Capacity Development of Road Maintenance in the Republic of Mozambique
Republic of Mozambique	

I. Project Outline

Background	<p>In Mozambique, it heavily depended on road transportation with 58% of freight transportation and 98% of passenger transportation. On the other hand, only 3% of the local road was paved while 20% of the national roads were paved. In particular, for the rainy season, there were many sites where became impassable on the local roads.</p> <p>Having 480 staff in total, the National Road Administration (Administração Nacional de Estradas: ANE:) had been responsible for the construction, maintenance and repair of roads in Mozambique. However, the development partners concurrently considered that a decline in the institutional and technical capacity of ANE became an issue of major concern. Although ANE contracted out all the road maintenance works to consultants and civil contractors, it was deemed that ANE should have preferably carried out the works by themselves. And there was an urgent need in ANE to capacitate its technical staff for properly supervising subcontractors to ensure their road maintenance works.</p>										
Objectives of the Project	<p>Through the preparation of repair and maintenance records, preparation of guidelines for repair works and a management manual for ANE staff, implementation of seminars on maintenance management, and implementation of pilot projects for road maintenance and repair method, the project aimed at strengthening the institutional capacity of road maintenance, and thereby contributing to properly conducting road maintenance work.</p> <ol style="list-style-type: none"> Overall Goal: Road maintenance work is properly done. Project Purpose: The institutional capacity of road maintenance is strengthened. 										
Activities of the Project	<ol style="list-style-type: none"> Project Site: Maputo and Gaza provinces Main activities: 1) Review and revision of a manual on provincial road maintenance, 2) Preparation of history of repair and maintenance records, 3) Preparation of guidelines for repair works and a management manual for ANE staff, 4) Implementation of seminars on maintenance management, 5) Implementation of pilot projects for road maintenance and repair method, etc. Inputs (to carry out the above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Japanese Side</td> <td style="width: 50%;">Mozambican Side</td> </tr> <tr> <td>1) Experts: 12 persons</td> <td>1) Staff allocated: 32 persons</td> </tr> <tr> <td>2) Trainees received in Japan: 20 persons</td> <td>2) Land and facilities: 3 project offices in ANE</td> </tr> <tr> <td>3) Equipment: vehicle, copy machine, printer, etc.</td> <td>3) Equipment: utility cost for the project offices, cost for pilot project activities, etc.</td> </tr> </table> 			Japanese Side	Mozambican Side	1) Experts: 12 persons	1) Staff allocated: 32 persons	2) Trainees received in Japan: 20 persons	2) Land and facilities: 3 project offices in ANE	3) Equipment: vehicle, copy machine, printer, etc.	3) Equipment: utility cost for the project offices, cost for pilot project activities, etc.
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Project Period	August 2011 – August 2014	Project Cost	(ex-ante) 240 million yen, (actual) 381 million yen								
Implementing Agency	National Road Administration (ANE)										
Cooperation Agency in Japan	West Nippon Expressway Company Limited Katahira & Engineers International										

II. Result of the Evaluation

< Special Perspectives Considered in the Ex-Post Evaluation >

[Limited causal relation between the Project Purpose and indicator 2 in the project design]

Due to its weakness in the logical linkage to the project activities as pointed out in the terminal evaluation, (Indicator 2: improved percentage of budget execution) had not adequately captured nor accounted the achievement of the Project Purpose. Furthermore, the definition of “improved percentage” as well as the nature of the improvement was not clearly defined in the framework. Also, it should have required to expand the original project scope beyond the enhancement of the ANE’s managerial capacity in road maintenance, to the extent of the improvement of performance and capacity of all the local contractors in the country. Thus, it did not adopt the indicator to measure the achievement in the ex-post evaluation. Therefore, alternatively proposed to refer to other quantitative time-series data, “the total road length of inspection and maintenance conducted using the manuals/guidelines/method developed by the project” to assess the achievement in the ex-post evaluation of the project.

1 Relevance

<Consistency with the Development Policy of Mozambique at the Time of Ex-Ante Evaluation and Project Completion>

The project was consistent with Mozambique’s development policies of “the Poverty Reduction Action Plan (PARP)” (2011-2014) that was put into operation through “the Five-Year Government Program” (2010-2014) which addressed to increase the mobility of people and goods throughout the country. Specifically in the sector, “Integrated Program for Roads Sector (PRISE)” (2007-2009) Phase I was prepared to implement the “Road Sector Strategy (RSS)” (2007-2011).

<Consistency with the Development Needs of Mozambique at the Time of Ex-Ante Evaluation and Project Completion >

The project was consistent with Mozambique’s development needs that were to secure necessary mobility for productivity improvement to establish consolidated society and economy through the development of the road network as well as the expansion of the qualified road network across the country. There was no change in the needs by the time of project completion.

<Consistency with Japan’s ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with the 6th Japan-Mozambique Policy Dialogue in March 2011, that was to revitalize regional economy including corridor development¹.

<Evaluation Result>

¹ Ministry of Foreign Affairs, “ODA Data book”, (2011)

In light of the above, the relevance of the project is high.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the time of Project Completion>

The Project Purpose was achieved by the project completion. According to the survey results, it was confirmed the capacity of ANE was substantially strengthened among engineers, technicians, inspectors and the related private sector in many aspects of road inspection/planning/maintenance. By the same token, the inputs and manuals produced by the project enhanced the assessment capacity of the “Road Fund²”. Thus, strengthened capacity in terms of road inspection/planning/maintenance (Indicator 1) was achieved. Based on the analysis of collected data regarding Indicator 2, it was observed that the actual disbursement ratio generally dropped in the year experienced the severe rainy season as emergency works were prioritized to be addressed instead of maintenance. Also, other external factors interfered such as technical and financial capabilities of private contractors and consultants, and delays in the process of contract approval by the Administrative Court. Nevertheless, it was numerically increased from the previous year in 2014, although there was no definition to stipulate the improved percentage per se in the project design, thus it was not applicable for verify the achievement level of the Project Purpose in any case as stated above.

<Continuation Status of Project Effects at the time of Ex-post Evaluation>

The project effects have been continued since the project completion. According to the survey results, strengthened capacity in terms of road inspection/planning/maintenance (indicator 1), has been sustained as the tools and database have been used on a regular basis and updated by ANE staff as needed. Also, the Road Inspection Handbook by the project has been widely used and validated as good technical reference and information for ANE engineers, technicians, inspectors and relevant private companies. Despite the financial crisis, a considerable amount has been channeled to implement ANE’s road maintenance as the total road length of inspection and maintenance over the years have been performed at a constant level throughout the period. It was concluded that on the whole data/information manifest the continued commitment and priority to improve road maintenance.

<Status of Achievement for Overall Goal at the time of Ex-post Evaluation>

The Overall Goal has achieved at the time of ex-post evaluation. According to the survey results, the percentage of roads in Mozambique in a good or fair condition (indicator 1) was an average of 68%, showing an upward trend. Moreover, a difference between the target and actual values has decreased from 6% to only 2% from 2015 to 2017. ANE has conducted road maintenance for any road on a regular basis, in addition to the road rehabilitation as needed. As a part of its routine inspection, ANE has carried out specific inspections to focus the damage caused by flooding during the rainy season so that repair work can be immediately done to normalize public transportation.

<Other Impacts at the time of Ex-post Evaluation>

Some positive impacts were confirmed. As gender and cross-cutting issues addressed by the project have been acknowledged by the concerned service providers, ANE has encouraged women participation in road-related activities as laying out a goal to recruit women up to 25% of the labor force in its policy. With respect to whether ANE has arranged to make the digitized as-built drawing data widely accessible within ANE, including its provincial offices by solving the problems on the i-DOC³; Although it was not yet the benefit of all provincial offices, it was reported the as-built digital drawings have served to promote work efficiency as they help understanding road deficiencies and identifying appropriate maintenance input to be provided. In the meantime, rest assured that no negative impact was confirmed.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is high.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) The institutional capacity for road maintenance is strengthened.	(Indicator 1) Strengthened Capacity in terms of road inspection/planning/maintenance	<p>Status of the Achievement: Achieved (Continued) (Project Completion)</p> <ul style="list-style-type: none"> The manuals and guidelines strengthened ANE’s maintenance engineers as well as the private sector’s capacity for road inspection and maintenance⁴; The Introduced Image Processing System of Road Conditions (IPSRC) was used for road condition survey; The digitization of the as-built drawings of the past road projects became mandatory information for maintenance engineers and have been a valuable support in road repair planning and implementation; The experimental work and the pilot project created awareness among ANE, contractors, and consultants on do-ability and advantages of the appropriate repair methods; The maintenance equipment kit has been used for training young engineers from ANE, local Government, consultants, contractors, and students. <p>(Ex-post Evaluation)</p> <ul style="list-style-type: none"> The tools and database have been used and updated by ANE staff to refer to the design and operational information on the roads to be maintained and repaired; The Road Inspection Handbook has been widely used by ANE engineers, technicians, inspectors as well as private companies as technical reference and information in the field; The project documents have been used as the guidance in the ANE’s road

² Known as FE: Fundo de Estradas. The financial source of ANE consists of internal and external portions. The main internal financial source is from government and the Road Fund (FE).

³ The name of the ANE’s internal digital library system.

⁴ The copies of manual and guidelines have been distributed to more than 400 engineers including ANE and private sector through workshops, seminar or etc at the time of ex-post evaluation.

		condition survey conducted twice a year in all road network																																												
	(Indicator 2) Improved percentage of budget execution	Status of the Achievement: Not applicable																																												
(Overall Goal) Road maintenance work is properly done.	(Indicator 1) The good or fair condition of the roads	<p>(Ex-post Evaluation) Achieved</p> <ul style="list-style-type: none"> As shown an average of 68%, with an increasing trend, despite the macroeconomic crisis and flood episodes during the period. <p><Table 1: the total inspected road network and the percentage of good and fair conditioned roads ></p> <table border="1"> <thead> <tr> <th colspan="4">Inspected national road network by type (Unit: km)</th> </tr> <tr> <th></th> <th>2015</th> <th>2016</th> <th>2017</th> </tr> </thead> <tbody> <tr> <td>Primary highway</td> <td>6,052</td> <td>5,984</td> <td>5,915</td> </tr> <tr> <td>Secondary highway</td> <td>4,904</td> <td>4,889</td> <td>4,886</td> </tr> <tr> <td>Tertiary highway</td> <td>12,681</td> <td>12,603</td> <td>12,739</td> </tr> <tr> <td>Vicinal road</td> <td>6,732</td> <td>6,726</td> <td>6,716</td> </tr> <tr> <td>Total (km)</td> <td>30,369</td> <td>30,202</td> <td>30,257</td> </tr> <tr> <th colspan="4">% of good or fair condition out of the inspected road network</th> </tr> <tr> <th></th> <th>2015</th> <th>2016</th> <th>2017</th> </tr> <tr> <td>Overall (%)</td> <td>65</td> <td>68</td> <td>71</td> </tr> <tr> <td>National Target (%)</td> <td>71</td> <td>72</td> <td>73</td> </tr> </tbody> </table> <p>Source: ANE, Directorate of Maintenance</p>	Inspected national road network by type (Unit: km)					2015	2016	2017	Primary highway	6,052	5,984	5,915	Secondary highway	4,904	4,889	4,886	Tertiary highway	12,681	12,603	12,739	Vicinal road	6,732	6,726	6,716	Total (km)	30,369	30,202	30,257	% of good or fair condition out of the inspected road network					2015	2016	2017	Overall (%)	65	68	71	National Target (%)	71	72	73
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Source: Answered questionnaire provided by ANE, Directorate of Maintenance

3 Efficiency

Although the outputs were produced, and the project period was as planned (ratio against the plan: 100%), the project cost exceeded the plan (ratio against the plan: 159%) as a chief advisor took over coordinator's role and extended the term. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

The road sector has remained one of the key components of the development policy of the country. "The Five-Year Program of the Government" (2015-2019) refers to the necessity of routine maintenance of 20,000 km per year and periodic maintenance of 5,000 km to ensure their sustainability and durability. The RSS (2007-2011) has been still valid to date and it emphasizes the maintenance of the road network as a fundamental principle in the road policy as well-maintained road network impartially enables efficient and safe transportation. Further, the activities undertaken by the road sector are to be carried out based on the implementation of the extended PRISE which is harmonized with the Economic and Social Plan (PES) in 2018. The PES addresses the target for routine maintenance with the earmarked budget.

<Institutional Aspect>

ANE has been an implementing agency under the Ministry of Public Works Housing and Water Resources⁵ (Ministério de Obras Públicas Habitação e Recursos Hídricos: MOPHRH). The major role of the MOPHRH has continued to ensure the financial resources for the implementation of the road maintenance program and monitor its implementation. ANE has remained engaged in the management and maintenance of all the classified road in the country. The Maintenance Directorate of ANE has currently with 20 staff, specialized in providing technical support to the 10 Provincial Roads Delegations for their road maintenance activities in each province. The Delegations (368 staff in total) are, in effect, in charge of the management of road maintenance, inspection, planning, and implementation. According to the survey results, ANE perceives that manpower in both head and delegation offices has been insufficient for the ever-increasing required workload. With respect to the Road Fund, aside from securing the budget at the central level, the Road Fund at the provincial delegations has been in a position to monitor each subcontracted task and to ensure the compliance to settle the payment as the actual maintenance and repair work is done by subcontracting companies. The Road Fund also perceives a manpower shortage to cover and process a large number of maintenance contracts in a timely manner.

<Technical Aspect>

According to the survey results, ANE perceives that they have sustained that the technical level to implement the required work. The reason for the retention of the capacity, most ex-counterpart engineers trained in the project still have remained in place and actively engaged at ANE. Furthermore, the handbook/manuals/guidelines/method introduced by the project have been disseminated within ANE and to the private sector. As a case in point, one official workshop for dissemination was held in Maputo with the participation of ANE engineers and also from the private sector. ANE's provincial representatives have been disseminating the documents as standard to the contractors and consultants. On the other hand, there is a concern in the Road Fund that their tasks on contract monitoring and assessment could have been more effectively operationalized if they could participate in the training of the project to acquire the necessary knowledge of roadworks to properly assess the monetary value of subcontracting.

<Financial Aspect>

The MOPHRH does not provide a specified budgetary amount to road maintenance as ANE has the autonomy to allocate the given resources to different road sector programs or projects. ANE has two different sources: one is an internal budget on the basis of national tax revenue levied on fuel and the other is external budget funded by donors and international institutes. In total, ANE had a record of their budget earmarked for general road maintenance activities (7,573,389MZN in FY2014, 5,766,532MZN in FY2015, 7,805,753MZN in FY2016, 7,366,201 in FY2017, 5,070,147 in FY2018). Leaving the manpower shortage out of consideration, it may suffice to cover the current level of road maintenance work. However, to achieve the national target of 73% and beyond, according to the Road Fund, the accrual-basis deficit is palpable if it is to upgrade the nationwide network to be in a good or fair condition. Thus, it has still been limited by

⁵ Formerly MOPH before the ministerial restructuring in 2015.

the given budget.

<Evaluation Result>

Therefore, the sustainability of the effects through the project is fair.

5 Summary of the Evaluation

The project achieved the Project Purpose and the Overall Goal. As for sustainability, it has institutionally understaffed, especially at the provincial level. Also, the necessary budget has not been sufficiently secured for achieving the national target of road maintenance. On the other hand, the ANE's capacity enhanced by the project has been technically sustained on their own. As for efficiency, the project cost exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- (1) In order to highlight good practices and lessons learned through the upcoming development policies, it is desirable that ANE together with the Road Fund should approach the MOPHRH at the Coordinating Council meeting before updating the main sectoral guiding instruments, such as the Five-Year Program of the Government (2020-2024) and RSS (2019-2029) to come across their analysis from hands-on experiences; 1) structural constraints in the actual implementation of policies and strategies in the past; 2) substantive recommendations based on project results; 3) promotion of harmonized good practices and lessons learned of updated strategies, methods, and techniques for the implementation of the sector's policies for strengthening institutional and sectoral capacity.
- (2) In order to further improve maintenance works on roads and bridges through efficient financial disbursement, the MOPHRH, and the Road Fund should collectively negotiate with the Ministry of Economy and Finance (Ministério de Economia e Finanças: MEF) how best to synergize administration capacity and capacitated staff to serve public asset preservation in the sector to achieve the developmental goals. They should seize the opportunity at joint coordination meetings during the period of annual elaboration and harmonization of proposals of the PES and the State Budget under the coordination of the National Directorate of Planning and Budget (DNPO), MEF.
- (3) To institutionalize to further promote knowledge sharing/feedback and refresher training as follow-up of the project, it is recommended that ANE and the Roads Training Center "Centro de Formação de Estradas: CFE" collaboratively holds an annual seminar for ANE engineers, technicians, inspectors as well as those of the private sector in each region (South, Center, and North). It may also require opinion exchange sessions for updating and improvement of the curriculum at CFE on a regular basis.

Lessons Learned for JICA:

- (1) Although the introduced approach was much needed and pertinent in the project, the selection of an indicator was not appropriate particularly that the expected outcome of the project was to be measured by the budget execution rate. It may even have superficially devalued the contribution of the project. To select realistic qualitative and quantitative indicators based on logically thought-out linkage with Project Purpose is a key. Those indicators should have been unaffectedly valid under the envisaged adverse conditions such as natural disaster or macroeconomic crises.
If needed to ensure improvement of the disbursement rate which may be seen as a consequence of the main project effect, at least it should have fully taken into consideration of structural facts involved in disbursement decision in the country at the time of planning such as; 1) the MEF has the ultimate power over the planning and state budgeting beyond the jurisdiction of ANE; 2) the MOPHRH, the Directorate of Planning and Cooperation, can only allocate budget for ANE out of its acquired national budgets in each year; 3) the Road Fund is entitled to conduct an appraisal on public investment on road maintenance and make an assessment of compliance with each contract. All the stakeholders above should have been at least included in the project at the time of planning, or if not earlier, before the mid-term review.
- (2) JICA projects would be more effectively implemented and possibly be more impactful if cross-cutting, socio-economic issues such as on the natural environment, land acquisition and resettlement, and gender are featured and mainstreamed from the outset of the project implementation. During the ex-post evaluation survey, it was noted that the potential impact on those issues can be captured and highlighted through in-depth assessment, but it should require a robust comparative analysis between the ex-ante.



< Onsite Training of ANE Staff >



< Joint Coordinating Committee Meeting >