

## Summary of the Terminal Evaluation

1. Outline of the Project	
Country : The Republic of South Sudan	Project title : Capacity Development on Sustainable Road Maintenance and Management in Juba City
Issue : Transportation	Cooperation scheme : Technical Cooperation
Division in charge : Economic Infrastructure Department	Total cost (includes the planned budget for FY 2013) : JPY510 Million
Period of Cooperation	1 <sup>st</sup> October 2011 – 31 <sup>st</sup> March 2014 (R/D):4 <sup>th</sup> July 2011
	Partner Country's Implementing Organization : Ministry of Transport, Roads and Bridges(MTRB), Ministry of Physical Infrastructure(MoPI) of Central Equatoria State(CES)
	Supporting Organization in Japan : CTI Engineering International CO.,LTD
	Related Cooperation Juba Urban Transport Infrastructure and Capacity Development Study in South Sudan (2008-11)
<p>1-1 Background of the Project</p> <p>Devastated by decades of civil wars South Sudan has suffered from lack of basic infrastructure. Even in the capital city Juba many road sections are unpaved, and without drainage they become impassable for days during rain season. The Ministry of Transport, Roads and Bridges (MTRB) manages the national road network and the Ministry of Physical Infrastructure (MoPI) of the Central Equatoria State is responsible for its regional road network including Juba. Both seriously lack technical and managerial capacity in planning and design, procurement, construction and supervision. Moreover, road policies, regulations, manuals and guidelines were non-existent. This Project for “Capacity Development on Sustainable Road Maintenance and Management in Juba City” is targeted at enhancing technical capacity of government officials and engineers of MTRB and MoPI to perform a series of tasks necessary to make the road maintenance management cycle (inspection, planning, maintenance and repair) work, thereby contributing to sustainable road maintenance and road safety in South Sudan. The Project was implemented over the project period from October 2011 to March 2014 with assignments of short term experts.</p>	
<p>1-2 Contents of Cooperation</p> <p>(1) Overall Goal :</p> <p>To achieve the proper and sustainable maintenance and management of all roads in South Sudan.</p> <p>(2) Project Purpose :</p> <p>To enhance the road maintenance and management capacities of MTRB and MoPI with</p>	

the establishment of a cycle of road maintenance and management; namely, road inspection, management/repair plan, and maintenance/repair work.

(3) Outputs :

- 1) The enhancement of capacity MTRB/MoPI to conduct road inspection and to prepare road inventory.
- 2) The enhancement of capacity of MTRB/MoPI to formulate road maintenance /repair plan in accordance with the road inventory.
- 3) The enhancement of capacity of MTRB/MoPI for road management (ROW, overloaded vehicles, traffic volume).
- 4) The enhancement of capacity of MTRB/MoPI to conduct road maintenance/repair work in accordance with the road maintenance/ repair plan.

(\*Output 3 was added in 2012 to 'enhance road management capacities 'which was approved by the Joint Coordination Committee (JCC) in February 2012.)

(4) Inputs (At the Terminal evaluation ):

Japanese side :

Number of experts dispatched : Sixteen (16) Short term experts 77.1 MM

One (1) long term expert 13.0 MM

Two (2) foreign experts

Equipment provided : 36 kinds of equipment and machines (PCs include software, road maintenance equipment and machines), JPY 79 million

Local Operation Cost : JPY 36 million

Number of trainees dispatched to Japan : 15

Number of trainees dispatched to Kenya: 3

South Sudanese side :

Number of Counterparts : 27

Office space for the Project: Project compound at MoPI, One office at MTRB

2. Outline of the Evaluation team

Japanese side	Team Leader	Mr. Jitsuya ISHIGURO	Advisor, Transport and ICT Division 2, Economic Infrastructure Department, JICA
	Evaluation Analyst	Ms. Jun KAKINUMA	Senior Consultant, Earth and Human Corporation
South Sudanese	Co-leader	Mr. WAIWAI Philip Marlow	Deputy Director of Road Maintenance, Ministry of Transport, Roads and Bridges (MTRB)

side	Member	Mr. Charles HAKIM Milla	Acting Director of Planning, Ministry of Physical Infrastructure (MoPI) of Central Equatoria State(CES)	
Period of Evaluation	24 <sup>th</sup> November-8 <sup>th</sup> December 2013		Type of Evaluation	Terminal evaluation
3. Results of Evaluation				
<p>3-1 Project Achievement</p> <p>(1) Achievement of Project Purpose :Almost Achieved</p> <p>Indicator: <u>Level of road maintenance and management capacity of the trained personnel.</u></p> <p>1) Inspection: Counterparts are able to carry out road inspection activities using equipment in accordance with the maintenance manual which was produced through active participation of counterparts.</p> <p>2) Plan: Counterparts have basic understanding on planning methodologies for road maintenance. They can prepare a short list of road maintenance sections in accordance with priorities.</p> <p>3) Maintenance/Repair: Counterparts have attained the skills of conducting routine road maintenance and small scale repair works in accordance with the manuals.</p> <p>(2) Achievement of outputs</p> <p>&lt; Output 1: Achieved &gt;</p> <p>Indicator 1-1 <u>The number of team who can conduct series of inventory in accordance with manual (survey work, road inspection, data management) for road inventory.</u></p> <p>Currently 4 teams each comprising about 4-5 staff are capable of conducting road inspection. The achievement test conducted in March 2013 confirmed the levels of understanding on road inspection with the average score of the all trainees reaching at more than 90%. With technical support and training provided by the expert team the counterparts completed the road inventory study covering 136km of the targeted road network in Juba.</p> <p>Indicator 1-2 <u>The number of updated inspection items specified in manuals.</u></p> <p>The following eight (8) inspection items were introduced by the Project and updated in three phases: Preparation of paper-based information, verification by VIMS and digitizing and storing on GIS.</p> <p>Inspection items: 1)Road Network Map,2)Road Diagram, 3)Road Inspection, 4)Structure Inspection, 5)Road Distress Map, 6)Road Registration List, 7)Traffic Volume Distribution Map &amp; Report, 8)Axle Load Survey Report</p>				

< Output 2: Almost Achieved >

Indicator 2-1 Required standard and criteria are prepared and updated by MTRB/ MoPI

To prepare a road maintenance plan the following standards, criteria and manuals were jointly prepared by the expert team and counterparts: (1) Definition of Service Level, (2) Standard Procedure of Road Condition Assessment, (3) Definition of Road Maintenance Work, (4) Unit cost, (5) Standard Process for Priority Assessment, (6) Standard annual road maintenance program. Unit costs are to be updated using the actual cost obtained through the pilot project.

Indicator 2-2 The number of teams who can conduct series of work (preparation of a long list, evaluation, prioritization) of road maintenance plan in accordance with manual (monitor by skill test, long list and short list)

One team (3 persons: one director, 2 technicians) in MTRB and one team (3persons: 2 Deputy Director and 1 technician) in MoPI acquired knowledge on maintenance planning through the lectures, workshops and pilot projects and have potential capacity to carry out the series of planning work referring to the manuals. As for the enhancement of planning capacity of MTRB/MoPI, preparation of a short list of prioritized roads was completed.

< Output 3: Achieved >

Indicator 3-1 The number of proposed counter measures realized to solve the Right of Way (ROW) problem.

To solve the ROW problem, three counter measures (ROW markers, ROW records and cleaning campaigns) were proposed and implemented.

Indicator 3-2 The number of teams who can identify overloaded vehicles by simplified axle load scale (number of overloaded vehicles)

Two counterpart teams are able to conduct the whole process of axle load survey, including planning, preparation, weigh measurement, data processing and reporting. They surveyed about 1,100 vehicles and identified 400 over loaded vehicles.

Indicator 3-3 The number of teams who can conduct traffic survey ( number of routes for traffic survey percentage of coverage of traffic survey)

Four counterpart teams can conduct the traffic count survey including planning, preparation, traffic counting and report preparation. (13 survey sites in Juba City on 8 major trunk roads)

< Output 4: Almost Achieved >

Indicator 4-1 The number of teams who can implement road maintenance work and quality control in accordance with manual

Due to the human resources constraint the number of teams that the Mechanical Department and the Road Maintenance Department of MOPI can organize was limited to one. This team can conduct various works ranging from simple tasks such as road cleaning to works requiring skills and knowledge such as pothole patching, *donor*-road repair, pedestrian crossing painting, and culvert making under their own supervision and quality control.

Indicator 4-2 Average of deteriorate rank of the maintenance road

The road sections repaired under the pilot projects are 1) Manua Road, 2) Lologo Road, 3) Ocerem Road, 4) Cololo Road, 5) Pedestrian crossing repair. The conditions of the above road sections are fair and regularly monitored through site inspection. The road cleaning campaign implemented under the Project covered 4.2km road sections, and after that, MOPI cleaned 6.9km road sections. The Juba City Council took over the campaign as their regular task with their own budget for the city road network and drainage.

(3) Possible Achievement of the Overall Goal

Indicator: Lengths of roads whose maintenance and repair work were done applying the cycle of road maintenance and management established by the Project.

See 3-2 (41)

3-2 Summary of evaluation result with five evaluation criteria

(1) Relevance : High.

The Project is in line with the development policy of the Government of the Republic of South Sudan (RSS) and Japanese aid policy to support infrastructure development for South Sudan. This has not been changed since the commencement of the Project.

Relevance to the Government of South Sudan Policy & Needs

The RSS has an infrastructure sector development plan entitled 'Budget Sector Plan 2011-2013: Infrastructure Sector.' As for road development, the plan envisages 600 km of the inter-state roads converted from earth to asphalt in 2013 and improved road conditions from 'poor' to 'fair' to make it possible to drive at a speed around 60km/hr. The Project aims to enhance the road maintenance and management capacities of MTRB and

MoPI, contributing to realization of South Sudan's infrastructure development plan.

Relevance to the Government of Japan Policy

Improvement of infrastructure (transportation and social infrastructure) is one of the priority areas of Japan's ODA policy for South Sudan, contributing to peace building within South Sudan and its neighboring countries. The TICAD IV Action Plan (Yokohama Action Plan 2008) highlights the need for infrastructure development as well as regional transport infrastructure including roads and ports. On TICAD V infrastructure development also remained high on its agenda.

(2) Effectiveness : Almost high.

During the course of the Project technical capacities of the individual counterparts for road maintenance were improved. All the outputs contributed to achieve the Project Purpose. However, compared to the success of the project at technical level, there is need to further develop institutional and administrative capacities to bring the road cycle management into action. The counterparts are ready for this. As a first step, the manuals prepared under the Project including the concept on road maintenance management cycle are expected to be authorized by MTRB and MoPI in January 2014.

(3) Efficiency : High.

Although the period of cooperation was relatively short, the Japanese side procured required equipment and dispatched experts on schedule. Short-term experts were flexibly assigned to cope with various needs arised during implementation. As for the South Sudan side, many counterparts participated in the project activities, and their attendance remained high. Depending on the activities there was slight reduction in the number of participants due to other assignments, but this was not a degree to affect the delivery of the project outcomes.

Despite the seriously limited budget under the austerity policy, the South Sudan side continued to bear the cost of fuel required to operate the Project office. This is a notable example of their commitments and strong eagerness to acquire new knowledge and skills to improve their road networks.

The Project collaborated with other Japanese projects and supplemented each other's activities. Training on right of way was organized in collaboration with the New Nile Bridge Project; inventory training was implemented with the Lologo bypass Project;

Counterparts participated preliminary design, construction and supervision of road drainage structure under the PKO projects on Juba-na Bari road.

(4) Impact : Moderate.

1) Likelihood of overall goal to be achieved

It is hard to say that the overall goal was set out at the level that can be achieved through the impacts emerged from the project outcomes. Considering the contents of the Project, improvement of the road network in Juba might have been more appropriate as an overall goal. Possible indicators in this case can be suggested as the number of road repair works using technologies appropriate for local needs and situation such as frequency and coverage of road cleaning, road drainage work by culvert construction and leveling earth roads. These alternative indicators may be achievable, provided that the local security conditions are improved and the budget allocation to Juba's roads is resumed.

Under the situation where road maintenance budget was not available due to the oil export ban, the attainment of the project output for maintenance planning remained limited. Also the occurrence of crimes and conflicts in many areas hampered counterparts from expanding the project activities outside of Juba. These are external factors that cannot be controlled by the Project. Removal of accumulated sand and garbage on the roadside is taken by the Juba city council as regular activity – a remarkable impact realized by the project under the human and financial resource restrictions. The Project conducted a series of trainings aimed to share the project outputs with other regions. Counterparts began to carry out an International Roughness Index (IRI) survey using VIMS outside the project area. Also, the project deliverables like manuals were shared with other development partners for wider use across the country.

2) Indirect impacts of the Project

Pilot projects were carried out to give opportunities for counterparts to get exposed to actual road work on the OJT basis. Community road improvement done by the pilot project brought many positive impacts on local people. Examples are as follows.

- Security was improved after the road improvement and culvert construction because police vehicles were able to get access to the community. The improved road gave local residents easy access to schools, markets, water and relatives even in rainy season.
- Construction of drainage solved flooding and improved the environment of the community.
- The construction works under the pilot project created employments in the local

community.

#### (5) Sustainability : Moderate.

Sustainability in terms of the policy aspect is high since the RSS government recognizes the importance of road maintenance as it is explicitly included in the 'Infrastructure Plan 2011-2013.' Although financial sustainability is low at present due to the current austerity budget, technical sustainability is nearly high owing to successful technical transfer to MoPI staff on maintenance work which is expected to be retained within MoPI. The Project assisted both MTRB and MoPI in institutionalization of the project experiences and outcomes.

#### 3-3 Factors that promoted realization of effects

- 1) Motivation of counterparts was high, partly because the Project provided new skills and working places for counterparts – many were returnees from the war.
- 2) Other stakeholders also supported the Project activities. Juba municipality, business communities and schools collaborated with the Project for road cleaning campaigns.

#### 3-4 Factors that hindered realization of effects

- 1) The austerity budget affected the operation of the Project, especially diminishing counterpart's motivation for road maintenance planning.
- 2) Insecurity and harassment in the field caused the delay of inspection activities.
- 3) Some trained counterpart left for seeking other jobs. There were several cases of sudden transfer of counterparts to other regions during training programs.

#### 3-5 Conclusion

The relevancy of the Project is high, since it is in line with the RSS's development policy and Japanese aid policy. Effectiveness of the Project is almost high judging from the achievement of the project purpose and outputs. Efficiency is high owing to the inputs that were mobilized as planned. Impacts are moderate, because the austerity budget limited the possibility to expand the project outputs. Sustainability is also moderate due to the financial constraints imposed on the counterparts although they keep the level of their acquired technical capacities. However, it can be said that given the limited 2 year and half project period the project successfully delivered expected outputs. The evaluation team proposes that the Project end in March 2014 as planned.

#### 3-6 Recommendations



(1) Institutional Strengthening

It is recommended to establish an institutional mechanism in MTRB/MoPI to maintain and elaborate the achievements of the Project. Both counterparts and JICA experts should discuss ways forward as to how MTRB/MoPI can strengthen their institutional capacities to respond to road maintenance needs.

(2) Mainstreaming the road maintenance cycle with the government

Mainstreaming the road maintenance cycle at the higher administration level in MTRB and MoPI is critical to sustainable road maintenance across the country. The manuals prepared under the project are based on the concept of the road management cycle. Dissemination of the manuals is an important step to establish the cycle within the road administration in South Sudan. It is recommended that MTRB/MoPI take actions to widely share the outcomes of the Project within and outside of MTRB/MoPI.

3-7 Lessons Learned

- (1) For a fragile state like South Sudan, projects need to be designed by assessing its needs based on its situation. Also, implementation of project activities should be flexible, reflecting the changes in external conditions. At the beginning of the Project it was found that main counterparts had not had the opportunities for basic education due to the civil war. Under this Project the initial approach to strengthen computer-based skills were amended, and much focus was given to paper-based approach, since many lacked mathematical knowledge and computer skills. Also, facing sudden reduction in the road budget, the Project switched from asphalt road repair methods to simpler and cheaper methods for earth road maintenance.
- (2) The project entrusted the responsibilities to the counterpart teams and allowed them to make mistakes, giving them opportunities to learn from their own experience. This process enhanced their technical expertise and formed mutual respects between counterparts and Japanese experts. This good rapport was maintained throughout the project period both in official and private activities.