

Country Name	District and Urban Roads (DUR) Mapping and Roads Database Project				
Republic of Uganda					
I. Project Outline					
Background	Road network in Uganda consists of national roads, district roads, urban roads and community access roads. At the time of ex-ante evaluation (2011), the Ministry of Works and Transport (MoWT), an organization responsible for policy formation for road development, maintenance and planning, did not have district and urban roads (DUR) database which includes basic road information such as road name, class, distance, location, and condition of DUR (regarding national roads, Uganda National Roads Authority (UNRA) had developed the road database connected with geographical information system (GIS) database). This kind of situation brought difficulties for District Urban Councils (DUCs) to prepare an appropriate budget plan for road maintenance and secure necessary budget allocation from the Uganda Road Fund (URF) which was established by the Government of Uganda (GoU) in 2008 for road maintenance funding.				
Objectives of the Project	<p>Through developing the DUR database which includes geographical information and road inventory data nationwide and strengthening the capacities of MoWT and DUCs to maintain the database, the project aimed at improving their capacities to manage DUR assets, thereby strengthening their capacities to rehabilitate and maintain DUR in the whole country.</p> <ol style="list-style-type: none"> Overall Goal: MoWT's and DUCs' capacity for DUR rehabilitation and maintenance is strengthened in the whole country. Project Purpose: MoWT's and DUCs' capacity for ensuring DUR assets is improved through the effective utilization of DUR database including GIS and road inventory data. 				
Activities of the Project	<ol style="list-style-type: none"> Project Site: the whole country Main Activities: (1) Conduct site surveys, produce digital base map of DUR and conduct training on basic skills for GIS for MoWT; (2) Prepare formats and manuals for road inventory, conduct training on road inventory for MoWT and DUCs, conduct site surveys and prepare road inventory; and (3) Establish DUR database by integrating the road inventory data into digital base map, prepare a manual on maintenance of DUR database and conduct training on skills for updating and maintaining DUR database for MoWT and other road sector agencies etc. Inputs (to carry out above activities) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Japanese Side</p> <ol style="list-style-type: none"> Experts: 13 persons Trainees Received: 10 persons Equipment: handy global positioning system (GPS), visible and infrared mapping spectrometer (VIMS) system software, auto computer aided design (CAD) map and digital cameras etc. Local operation cost: local employment, transport, training etc. </td> <td style="width: 50%; vertical-align: top;"> <p>Uganda Side</p> <ol style="list-style-type: none"> Staff Allocated: 19 persons Local operation cost: project office, pilot project etc. </td> </tr> </table> 			<p>Japanese Side</p> <ol style="list-style-type: none"> Experts: 13 persons Trainees Received: 10 persons Equipment: handy global positioning system (GPS), visible and infrared mapping spectrometer (VIMS) system software, auto computer aided design (CAD) map and digital cameras etc. Local operation cost: local employment, transport, training etc. 	<p>Uganda Side</p> <ol style="list-style-type: none"> Staff Allocated: 19 persons Local operation cost: project office, pilot project etc.
<p>Japanese Side</p> <ol style="list-style-type: none"> Experts: 13 persons Trainees Received: 10 persons Equipment: handy global positioning system (GPS), visible and infrared mapping spectrometer (VIMS) system software, auto computer aided design (CAD) map and digital cameras etc. Local operation cost: local employment, transport, training etc. 	<p>Uganda Side</p> <ol style="list-style-type: none"> Staff Allocated: 19 persons Local operation cost: project office, pilot project etc. 				
Project Period	March 2012 – March 2015	Project Cost	(ex-ante) 290 million yen, (actual) 305 million yen		
Implementing Agency	Ministry of Works and Transport (MoWT)				
Cooperation Agency in Japan	Eight-Japan Engineering Consultants Inc.				

II. Result of the Evaluation

<Special Perspectives Considered in the Ex-Post Evaluation>

- In order for Overall Goal to be achieved, all DUR in Uganda needs to be covered in the DUR database. Thus, in this ex-post evaluation, it was checked whether all DUR in Uganda has been covered in the DUR database by the time of ex-post evaluation. (1) If the database has been updated by MoWT every year and the database covers 80%-100% of DUR in the country, continuation status of Indicator 1 of Project Purpose is to be evaluated "continued", (2) if the database has been updated by MoWT and the database covers 50%-79% of DUR in the country, continuation status of Indicator 1 is to be evaluated "partially continued", and (3) if the database has not been updated by MoWT or the database covers 49% or less DUR in the country, continuation status of Indicator 1 is to be evaluated "not continued".

I Relevance

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

The project was consistent with Uganda's development policies such as "improvement and maintenance of rural road infrastructures" as set forth in "The National Development Plan (NDP) (2010/11-2014/15)", "The National Transport Master Plan (NTMP) (2008-2023)", "The Second 10 Year Road Sector Development Program (RSDP2) (2002-2012)" and "RSDP3 (2012-2022)" etc.

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

The project was consistent with Uganda's development needs for developing the DUR database to improve DUR maintenance and rehabilitation at the times of both ex-ante evaluation and project completion.

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

The project was consistent with Japan's ODA policy, as one of the four priority areas of Japan's assistance for Uganda (confirmed in

the economic cooperation policy dialogue in October 2006) was basic economic infrastructure development focusing on roads¹.

<Evaluation Result>

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 had been achieved by the time of project completion. The DUR database was updated daily, completed by January 2015 and approved by MoWT in February 2015 (Indicator 1). The road inventory survey data completed by DUCs (District Offices, Municipal Councils (MCs) and Town Councils (TCs)) was submitted to MoWT every year and the data submitted was input into the database by MoWT (Indicator 2). The DUR database completed in 2015 was ready to be utilized for preparing work plans (road maintenance plans), investment plans (budget plans) and annual report with the initiatives of DUCs (Indicator 3).

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

The project effects have partially continued to the time of ex-post evaluation. 100% of both district roads and urban roads have been covered in the DUR database, and the database has been partially updated by MoWT every year since project completion. Reasons for the database having been 'partially' updated are that while all DUCs conduct road inventory survey and submit the data to URF every year, the number of staff and capabilities of many DUCs are not sufficient to collect and submit sufficient data for MoWT to update the database², and that while MoWT collects necessary data by itself, funds for such survey has not been adequate (Indicator 1). Due to the same reason stated above, approximately 10% only of DUCs have submitted road inventory data to MoWT every year since project completion (Indicator 2). The DUR database has been utilized for preparing work plans (road maintenance plans) by DUCs and annual reports and road rehabilitation work plans by MoWT, however, it should be noted that these plans do not reflect the latest road information fully, as the database has not been fully updated every year (Indicator 3).

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

The Overall Goal has been achieved by the time of ex-post evaluation. All DUCs have prepared and submitted road maintenance plans with updated data to URF every year, though these plans do not reflect the latest road information fully (Indicator 1). DUCs have submitted the list of roads which require rehabilitation to MoWT, and MoWT has prepared the rehabilitation plans and annual budget plans for DUR network³, though these plans also do not reflect the latest road information fully due to the same reason above (Indicator 2). The amount of budget for DUR allocated by URF (for the purpose of road maintenance) has been almost the same since project completion. On the other hand, the amount of budget for DUR allocated by MoWT (for the purpose of road rehabilitation) has been increased by 96% from UGX 393 billion in FY 2010/11 to UGX 771 billion in FY 2017/18, in accordance with the intension of the Uganda government to prioritize road rehabilitation through its direct management (Indicator 3).

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

The paved road ratio including national roads, district roads and urban roads in Uganda was approximately 4% at the time of ex-ante evaluation, which has been improved to 20% of national roads and 11% of district and urban roads by the time of ex-post evaluation. While it is difficult to explain to what extent this project has contributed to this improvement, the actual road network which had been underestimated was revealed to a large extent by the project, and thus the project is considered to have contributed to the improvement to a certain extent.

<Evaluation Result>

While the Project Purpose and the Overall Goal have been achieved, the DUR database has been updated and utilized in more limited extent than intended during the project implementation (DUCs have not been able to submit necessary data required for updating the database, while MoWT cannot collect necessary data by itself due to lack of budget), and thus, the effectiveness/impact of the project is fair.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results
(Project Purpose) MoWT's and DUCs' capacity for ensuring DUR assets is improved through the effective utilization of DUR database including GIS and road inventory data.	1. DUR database is updated by MoWT every year.	Status of the Achievement: achieved (mostly continued) (Project Completion) The DUR database was updated daily by MoWT and completed in 2015. (Ex-post Evaluation) The DUR database has been (partially) updated by MoWT every year.
	2. DUCs submit road inventory data to MoWT every year.	Status of the Achievement: achieved (not continued) (Project Completion) The road inventory survey data completed by DUCs was submitted to MoWT every year. (Ex-post Evaluation) Approximately 10% only of DUCs have submitted road inventory data to MoWT every year.
	3. DUR database is utilized for preparing work plan, investment plan, annual report, etc. by MoWT and DUCs.	Status of the Achievement: achieved (mostly continued) (Project Completion) The DUR database was ready to be utilized for preparing work plans, investment plans and annual report with the initiatives of DUCs. (Ex-post Evaluation) The DUR database has been utilized for preparing work plans, investment plans and annual report etc., however, these plans do not reflect the latest road information fully.

¹ Source: ODA Country Data Book (2011)

² All DUCs submit road inventory survey data to URF every year, because it is a prerequisite to obtain road maintenance funding from URF. However, DUCs cannot compile the GIS format required for updating the DUR database and thus they submit the simple format including road conditions and inventory data only to URF, which is insufficient for the purpose of updating the DUR database.

³ There are two main types of road interventions. For road sections that are in fair to good conditions, the intervention required is road maintenance, and for road sections that are in poor to bad conditions, the intervention required is rehabilitation. URF provides DUCs with funds only for road maintenance and MoWT conducts rehabilitation works.

(Overall Goal) MoWT's and DUCs' capacity for DUR rehabilitation and maintenance is strengthened in the whole country.	1. All DUCs prepare timely road maintenance plans with updated data every year.	(Ex-post Evaluation) mostly achieved All DUCs prepare and submit road maintenance plans to URF every year, though these plans do not reflect the latest road information fully.
	2. MoWT prepares rehabilitation plan for DUR network with updated data every year.	(Ex-post Evaluation) mostly achieved MoWT has prepared the rehabilitation plans and annual budget plans for DUR network, though these plans do not reflect the latest road information fully.
	3. Allocation of the budgets for DUR by the government is increased.	(Ex-post Evaluation) achieved Allocation of the budgets for DUR rehabilitation has been increased by 96%, while allocation of the budgets for DUR maintenance has been almost the same.

Source: Project Completion Report, questionnaire survey and interview with Department of Roads and Administration, MoWT and district engineers of local governments

3 Efficiency

The project cost exceeded the plan, while the project period was within the plan (ratio against plan: 105%, 100%, respectively). The outputs of the project were produced as planned. Therefore, the efficiency of the project is fair.

4 Sustainability

<Policy Aspect>

“NTMP (2008-2023)” and “RSDP3 (2012-2022)” are still effective at the time of ex-post evaluation, and the needs for improving maintenance of DUR are also stated in “NDP II (2015/16-19/20)”.

<Institutional Aspect>

A principal engineer, a senior engineer and three civil engineers are assigned in MoWT to be in charge of collecting, analyzing, processing and compiling road data, preparation of various reports and maintenance of the DUR database. According to MoWT, the number of staff is sufficient to fulfill these tasks. On the other hand, the number of staff in DUCs is generally insufficient and there is also a high rate of staff turnover (many staff have shifted to the private sector seeking higher income). The major problem caused by the insufficient number of staff is the inadequacy to collect sufficient and reliable data from the road inventory survey and the inability to make appropriate planning decision based on reliable information. In order to mitigate the problem, MoWT is attempting to intensify support for DUCs through capacity building.

<Technical Aspect>

Project counterparts (C/Ps) in MoWT still work in the organization, and five engineers stated above possess undergraduate and/or postgraduate degrees in relevant fields, have received GIS training and have sufficient work experience, and thus the skill level of these staff is sufficient to fulfill above mentioned tasks. On the other hand, according to DUCs, the skill level of staff is insufficient, particularly because there has been a high rate of staff turnover. Several trainings on road inventory and mapping surveys and GIS processing have been conducted for DUCs by MoWT (44 staff participated during 2014 to 2016 and 17 staff participated in 2018, while no training was conducted in 2017 due to lack of budget), however, many DUCs stated that there is a need for continuous training on a more regular basis to enrich capacity of newly employed staff in DUCs to sufficiently conduct the road inventory survey. Manuals prepared under the project and equipment procured under the project are still utilized at MoWT and DUCs.

<Financial Aspect>

MoWT does not have sufficient amount of budget⁴ due to the shortfall in the overall government budget, and consequently it has not been able to fully update the DUR database every year, implement road rehabilitation plans promptly and conduct trainings for DUCs regularly. As for DUCs, DUCs are authorized to use a maximum of 4% only of the total road maintenance funds allocated from URF for administrative cost including the road inventory survey (the rest is to be used for actual road maintenance works), which is not sufficient to conduct the survey properly.

<Evaluation Result>

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

5 Summary of the Evaluation

The project achieved the Project Purpose, project effects have partially continued and the Overall Goal has been achieved: the DUR database had been established and utilized by project completion, it has been partially updated every year and road maintenance plans and rehabilitation plans have been prepared utilizing the database, though they have not reflected the latest road information fully since project completion. For the sustainability, some problems were found such as insufficient number of staff and technical skills in DUCs and lack of budget in MoWT and DUCs. As for the efficiency, the project cost exceeded the plan.

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

III. Recommendations & Lessons Learned

Recommendations for Implementing Agency:

- As stated above, while staff in DUCs possess basic knowledge and skills, the staff turnover rate has been high and many skilled personnel have been lost to the private sector. DUCs stated needs for more regular trainings so as to build their internal capacity. Therefore, MoWT should conduct more comprehensive and periodical trainings for DUCs.
- As stated above, there is the shortfall in the overall government budget, and thus there should be prioritization and meaningful apportioning of financial resources within MoWT to facilitate properly managing and updating the DUR database.

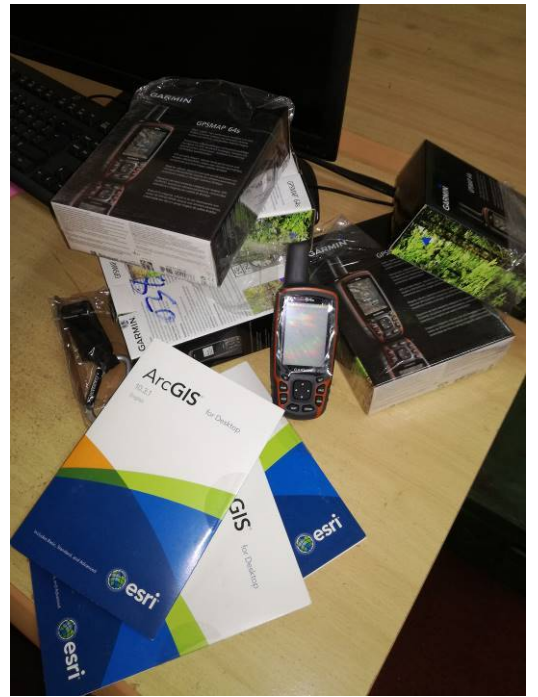
Lessons Learned for JICA:

- As stated above, the staff turnover rate has been high in DUCs and the majority of staff who participated in this project among DUCs have left to the private sector. Thus, when formulating a project in future, changes of human resource allocation within implementing agencies should be carefully checked to ensure sustainability of project effects (it should be checked whether implementing agencies have sufficient human resources and whether they have means to attract sufficiently skilled staff in case of staff turnover).

⁴ The financial data of MoWT was not available.



One of the district roads in Mukono district



Handy GPS procured under the project