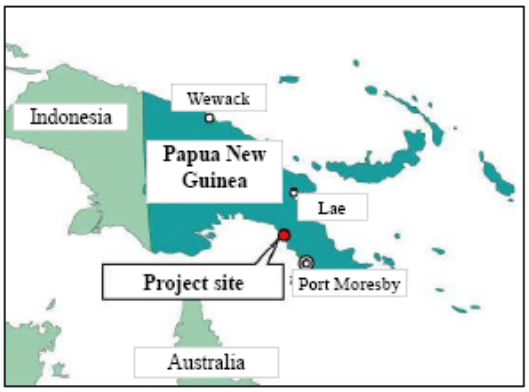
Ex-Post Monitoring Report
Trans-Island Highway Construction Project (I) (II) in Papua New Guinea

Evaluator：Atsushi Hashimoto (Maenam Advisory)
Field Survey: June 2008

1. Outline of the Project and Japan's Yen Loan



Project Site

A section of the Bereina-Malalaua Road

1.1 Project Objective

The objective of this project is to build the foundation for a highway network linking PNG's capital, Port Moresby, the second largest city, Lae, and the Highland Province, in order to stimulate flows of people and goods, improve living standards in local communities and promote industrial development, through the construction and improvement of an all-weather road in southern and central areas of the country.

1.2 Outline of the Project

Loan Amount / Loan Disbursed Amount	Phase I: 4,691 million yen / 4,423 million yen Phase II: 5,461 million yen / 5,255 million yen
Signing of Loan Agreement / Final Disbursement Date	Phase I: March 1991 / March 2000 Phase II: March 1991 / May 2001
Ex-post Evaluation	Fiscal 2002
Executing Agency	Government of the Independent State of Papua New Guinea/Department of Works (DOW)
Main Contract	China National Overseas Engineering Corporation (China)
Consultant Contract	Nippon Koei (Japan)

1.3 Background and Reasons for Conducting Ex-post Monitoring Study

This project was subjected to a monitoring study because of the following reasons.

(Effectiveness) The volume of traffic that shows the effectiveness of the project was lower than

it was originally planned (40 vehicles per day compared to the estimated 180 vehicles per day at appraisal in 2001). Since the effect was not recognized at the evaluation, it became necessary to grasp the subsequent effect.

(Sustainability) A monitoring study needed to be conducted due to a concern over possible insufficient maintenance and management resulting from a lack of budget.

2. Monitoring Results, Outline of the Project and Japan's Yen Loan

2.1 Effectiveness

The traffic volume has increased significantly from the time of evaluation. The improvement in access of local rural residents along the road to the market and social services helped create opportunities of cash income and improve their living standards.

(1) Traffic Volumes

In the project, an 80-kilometer road from Bereina, 200 kilometers northwest of PNG's capital, Port Moresby, to Malalaua was constructed (see map on the right).

Table 1 shows the traffic volume between Bereina and Malalaua.

Chart 1: Project site

Table1: Traffic Volume between Bereina and Malalaua

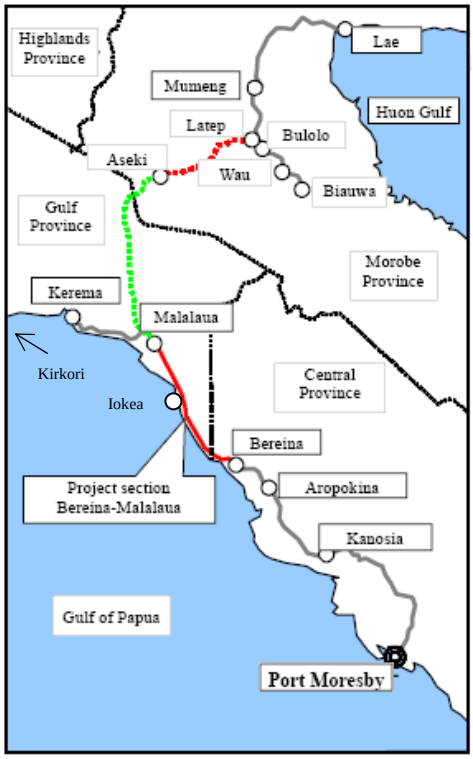
	Average traffic (vehicles per day) *1		
	Estimate at appraisal (2001)	At evaluation (2001)	At monitoring (2008)
Ordinary cars	13	4	5
Utility vehicles, etc. (PMV*, jeeps, etc.)	153	34	88 (58PMVs)
Trucks	14	2	19
Total	180	40	112

*1 The traffic at monitoring is the actual volume of 24-hour on-site survey.

Source: Evaluation report and on-site monitoring

The traffic volume has increased since the ex-post evaluation. The volume at the monitoring (number of passing vehicles) is below the estimate at appraisal and thus the economic impact is not significant when only the volume is taken into consideration. However, the majority of the traffic is PMVs, transformed city buses from trucks. The traffic of utility vehicles, which include the city bus, and other vehicles exceeds the volume projected in the plan. A PMV usually carries 30 passengers and baggage. It is more effective in increasing the number of people who are benefited from the road usage than a rise in the number of ordinary cars. One PMV also benefits 30 people in terms of the effect of time saving. It used to take 3 to 4 hours between Malalaua and Lae by sea before the road construction, which now takes 1 hour. This has a significant economic impact. It also enabled the participation of people residing along the road who were not in the money economy zone in economic activities. Business opportunities have been created and their access to social services has been improved.

The section between Bereina and Malalaua was originally a part of the plan to link Lae and Port Moresby. No construction work of a general road between Malalaua and Lae was implemented after the completion of the project and before the monitoring. Although there is a road between Lae to Aseki for lumber transportation, there is no connecting road from Aseki to Malalaua (green line in map on the right). There still exists a plan of linking Lae with Malalaua. The feasibility study (F/S) that completed in 2007 identified the construction of two routes, one from Aseki to Malalaua and the other from Wau to Malalaua. Its feasibility is now being studied. Although the route between Aseki and Malalaua is shorter than the other, it costs more because it is a rough route and it was concluded that the route between Wau and Malalaua is more economically viable. A total construction cost of 115 million kinas is estimated. Although the F/S has been completed, there is no plan of detailed design or construction of the road.



Area Map (Conceptual Diagram)

Highland Province (inland) in the central region of PNG produces petroleum, natural gas and mineral resources such as gold, while it is also a production site of such agricultural produce as highland vegetables and fruits. The distribution route from the area is land transport to Lae (second biggest city in PNG) in the eastern region by road and transport by air or sea from Lae to Port Moresby. There is a pipeline for petroleum from Highland stretching to the south to Kirkori on the Gulf of Papua (Port Moresby side), from which the petroleum transported to the gulf via the pipe is exported. There is a plan to construct a road from Highland Province to Kirkori along the pipeline and from Kirkori to Kerema along the Gulf in order to connect Highland Province with Port Moresby. There is a road from Kerema to Malalaua, although not paved. Construction of a road from the Highland

region to the Gulf of Papua is now under investigation and planning. Although it is yet to become a project, this road is higher priority than the road to connect Port Moresby with Lae according to the DOW.

(2) Reductions in Traveling Times

The monitoring result of the effect of time saving was the same as that in the ex-post evaluation. The road can be traveled at 70 kilometers per hour, which is the design speed. It takes about 1 hour and 10 minutes to travel between Bereina and Malalaua. Before the project was implemented, it used to take about 3 to 4 hours via the unpaved coastal route between Bereina and Iokea and from Iokea to Malalaua by boat.

2.2 Impact

(1) Impact on Economic Development

From the interview with people living along the road, we confirmed that the impact reported in the ex-post evaluation still remained. The improved access to Port Moresby has also changed the living in rural areas. The residents in remote rural communities who had had no cash income before began to have cash income by taking their produce (mainly fruit called betelnut, a luxury grocery item like chewing tobacco) to Port Moresby. This has enabled them to purchase more goods and their life has become more convenient. On the other hand, drinking habit and drugs were also introduced.

(2) Impact on Environment and Local Communities

Iokea, which was the relay station of the boat (dinghy) from Kerema or Malalaua to Port Moresby before the completion of this project, became no longer on the major route and the access to Port Moresby worsened after the completion. The coastal route from Iokea to Bereina (that was originally in a bad condition) is now impassable. Iokea residents takes a PMV that is operated once a week to get to the road constructed under the project and takes another PMV to go to Port Moresby or Malalaua. When the route to the road is not accessible in the rain season, they go west from Iokea along the coast by boat to go up the river to Apanaipi, an almost midpoint of the road.

2.3 Sustainability

There is not sufficient enough maintenance and management work due to a lack of budget. Because the road design life is near the end, the paving can be damaged quickly if no maintenance work is carried out and its function can deteriorate if grass on the road shoulder covers the road.

(1) Technical Capacity

The maintenance and management of the road constructed under the project is not hard technically. Same as in the ex-post evaluation, maintenance and management work is done to

a limited extent. When the monitoring was conducted, weeding on the road shoulder and repair work of potholes were conducted by contractors, yet there was no record of maintenance and management work before the monitoring. The contractors were small and medium-sized construction companies in PNG and the quality of their work was never good from the viewpoint of evaluators. (Weeding was not complete. Two much or too little asphalt for filling in the potholes.)

(2) Structural Organization

There are four DOW employees at each of their local office. One of the four employees is civil engineer in charge of maintenance and management of roads. Even though they reported the need of such work to the head office, it was not carried out due to a lack of budget. The road is under the jurisdiction of DOW office in Central Province for the section from Apanaipi to Bereina and the DOW office in the Gulf Province for the section from Apanaipi to Malalaua.

(3) Financial Status

The use of the RAMS (Road Asset Management System) which introduced with the support from Asian Development Bank began. The system works in such a way that current road conditions data is input and then such information as whether maintenance work is needed or not, its method, timing and cost is output. The data is updated every six months as provided. The budget of maintenance and management calculated by the RAMS is 300 million kinas for the entire roads in PNG and a minimum of 100 million kinas. However, in reality, only 20 million kinas are allocated. The budget for roads in PNG is absolutely in short and the budget for the maintenance and management of this particular road is also insufficient.

(4) Operation and Maintenance

Although the road is usable, some sections are closed because one of two lanes is covered with dirt due to landslide. The dirt was left without being removed for a long time. The road surface has also begun to deteriorate. Not only are there potholes but also there are narrow cracks running on the surface layer. Grass on the road shoulder also grew and only one and a half lane of two-lane road is confirmed in many parts. The design life of this road is 10 years and thus aged deterioration cannot be stopped. It is desired that proper maintenance and management work is conducted in view of its deterioration.

As described above, although the maintenance work is conducted limitedly, the quality of work is not desirable due to the abilities of contractors. Although the PNG government places importance on maintenance and management of existing facilities, it has to depend on donors due to a shortage of government budget.

3. Conclusion, Lessons Learned and Recommendations

3.1 Conclusion

The traffic volume in on a rise and the road has contributed to the vitalization of economic

activities of local residents along the road. However, due to a lack of budget, maintenance and management work is not desirable. Additional measures will be needed in the future.

3.2 Recommendations and Further Follow up Items

There is a need to continue to request to give priority to allocation of budget for maintenance and management work and donor support is also needed.

3.3 Lessons Learned

The construction of a new road in an area, where there was no road existed before, has a significant meaning economically and socially. In PNG where there is little progress in motorization, the economic impact of the new road is spread gradually and thus the evaluation of such impact should be made around five years after the completion. For example, PMVs are operated by private sector and there are more PMV operators or they are increasing the number of their services as they see the trend of the users. Because such impacts appear by degrees, two years after the completion was not long enough to see the impact.

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