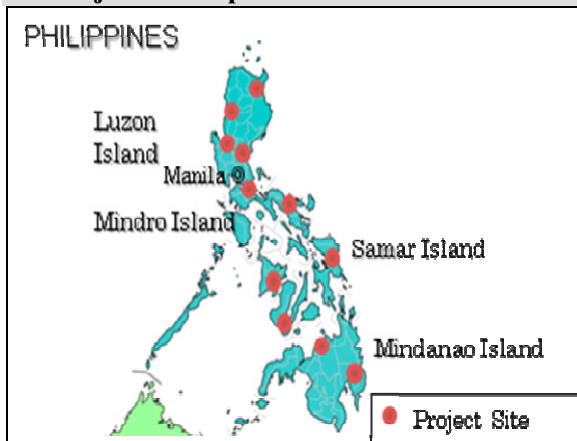


1. Project Description



Project Site



Project Road (Iloilo Province)

1.1 Background

In the Philippines, the arterial road network expanded quantitatively by intensive investment after independence until the 1980s, in response to the increasing road traffic demand. Because consideration of the functionality of road and the grade of pavement was not prioritized, aging temporarily-built bridges, unpaved and/or narrow roads had inhibited traffic efficiency. There was a strong need to improve qualitative conditions such as the modification of unpaved roads to paved and improving the temporary bridges into permanent bridges to secure an efficient, safe and reliable road network. Road improvement projects, however, had primarily focused on establishing the major arterial road network rather than rural roads, as mentioned above.

1.2 Project Outline

The objective of this project is to realize a safe and efficient regional road network in 11 provinces of the Philippines by improving National Secondary Roads which were connected to major arterial road links, thereby contributing to the promotion of regional industries and the improvement of the living standards of inhabitants.

Approved Amount / Disbursed Amount	12,895 million yen / 12,514 million yen
Exchange of Notes Date / Loan Agreement Signing Date	July, 1995 / August, 1995
Terms and Conditions	Interest Rate: 2.7%, 2.3% (consulting service) Repayment Period: 30 years (Grace Period: 10 years), General Untied
Borrower / Executing Agency(ies)	Philippine government / Department of Public Works and Highways
Final Disbursement Date	June, 2006

¹ This project was jointly evaluated with National Economic and Development Agency (NEDA) of the Philippines government.

Main Contractor (Over 1 billion yen)	China GEO Engineering Corporation (China) / Dongsung Construction Company Limited (the Republic of Korea) /Italian-Thai Development Public Company Limited (Thailand)
Main Consultant (Over 100 million)	United Technologies (Philippines) /Demcor Inc. (Philippines) /Multi-Infra Konsult, Inc. (Philippines) /Techniks Group Corp. (Philippines) /Katahira Engineering International (Japan)
Feasibility Studies, etc.	2 Feasibility studies conducted by JICA (one completed in February, 1989 and another completed in October, 1990)
Related Projects (if any)	Formulation of “Rural Road Network Development Project (RRNDP) – Phase 2” by JICA’s SAPROF (Special Assistance for Project Formation)

2. Outline of the Evaluation Study

2.1 External Evaluator

Ryujiro Sasao, IC Net Limited

2.2 Duration of Evaluation Study

Duration of the Study: January 2010 - December 2010

Duration of the Field Study: 17 March - 10 April 2010, 8 June - 7 July 2010,
5 - 18 September 2010

2.3 Constraints during the Evaluation Study

None in particular

3. Results of the Evaluation (Overall Rating: B)

3.1 Relevance (Rating: a)

3.1.1 Relevance with the Development Plan of the Philippines

In the “Medium-term Philippine Development Plan(MTPDP), 1993-1998” and
“Medium-term Philippine Public Investment Program, 1993-1998” effective at the time of
appraisal, the cited targets were to increase the paved ratio of arterial roads up to 85% and
that of second national roads up to 60% by 1998, the last year of the plan.

This target reflects the intention to invest in order to improve the quality of the road network,
which had already been well formulated quantitatively and the plans were suitable for the
current situation of the Philippine road sector.

This project focuses mainly on the second road² and is an attempt to conduct improvement
works. The project is confirmed to be one of those clearly mentioned in the above plans.

At the time of the ex-post evaluation, in the “Medium Term Philippines Development Plan
(2004-2010)”, the development goals and strategies of transport infrastructure sector are set
out as follows:

- Improve access to domestic and international markets to ease poverty in local and

² Other strategically important roads were also included in the plan.

- remote areas.
- Enhance peace and security in areas of conflict through efficient traffic and commerce.
- Enhance national solidarity, family bonds and sightseeing by ensuring swift, economical and safe forms of transfer for people.
- Build a transportation logistics system which achieves efficient access between the business centre of the Manila metropolitan area and nearby states to ease traffic congestion in the metropolitan area.
- Develop transport infrastructure at a minimum budget and debts.

In addition, in order to rationalize the allocation of scarce public resources, the 2004-2010 MTPDP prioritizes the following activities in the road sector: a) maintenance of existing assets; b) rehabilitation of damaged sections; c) improvement and widening of heavily used roads; and d) construction of new roads and missing links in the road network in that order.

As above, after as well as before the project is conducted, the importance of developing the rural road network remains.

3.1.2 Relevance with the Development Needs of the Philippines

In the Philippines in the 1990s, there was a strong need to improve qualitative conditions such as the modification of unpaved roads to paved and improving the temporary bridges into permanent bridges to secure an efficient, safe and reliable road network. Road improvement projects, however, had primarily focused on establishing the major arterial road network rather than rural roads, as mentioned in the above 1.1 Background.

Therefore, there was a future need to promote the expansion of the rural road network, which links the local towns and villages and the main arterial road network, in addition to improving the arterial road network. The expansion of the rural road network was necessary to activate the local economy, leading to reduced income disparity between residents in urban and local areas.

In addition, the change in the paving rates of major roads confirmed at the ex-post evaluation was as follows:

Table 1. Paving rates of major roads (Unit:%)

Type of road	1992	2009
National roads	50	75.15
- PCC (concrete paving)	27	47.45
- AC (Asphalt paving)	23	27.70
- Gravel	49	24.56
- Earthen roads	1	0.29
Provincial roads	12	41.99
- PCC	3	36.00
- AC	9	5.99
- Gravel	71	50.25
- Earthen roads	17	6.26

Source: Department of Public Works and Highways

During the period of about 20 years to date, the paving rates have grown drastically. According to the statistics of the Land Transportation Office, Department of Transportation Communications, the number of registered vehicles in the Philippines had increased from 3,701,173 in 2000 to 5,891,272 in 2008, which is about 1.6 times the figure in 2000.

In addition, as seen in the following, the traffic volume on the project roads has also increased steadily.

This project is suitable for the development needs (road usage needs) from the time of appraisal to date. The selection of project roads was very systematic and detailed.

3.1.3 Relevance with Japan's ODA policy

According to the "Overseas Economic Cooperation Policy" issued by JICA (former JBIC) in 1999, the following statement was included related to the Republic of the Philippines:

"Emphasis is placed on the support for strengthening the economic structure for the purpose of sustainable growth, poverty alleviation and improvement of economic gap among regions, the support for environment protection including disaster prevention, and human resource/institution development."

This project is in line with the then Japan's ODA policy.

This project has been highly relevant with the country's development plan, development needs, as well as Japan's ODA policy, therefore its relevance is high.

3.2 Efficiency (Rating: b)

3.2.1 Project Outputs

The following chart shows the distribution of the project sites.

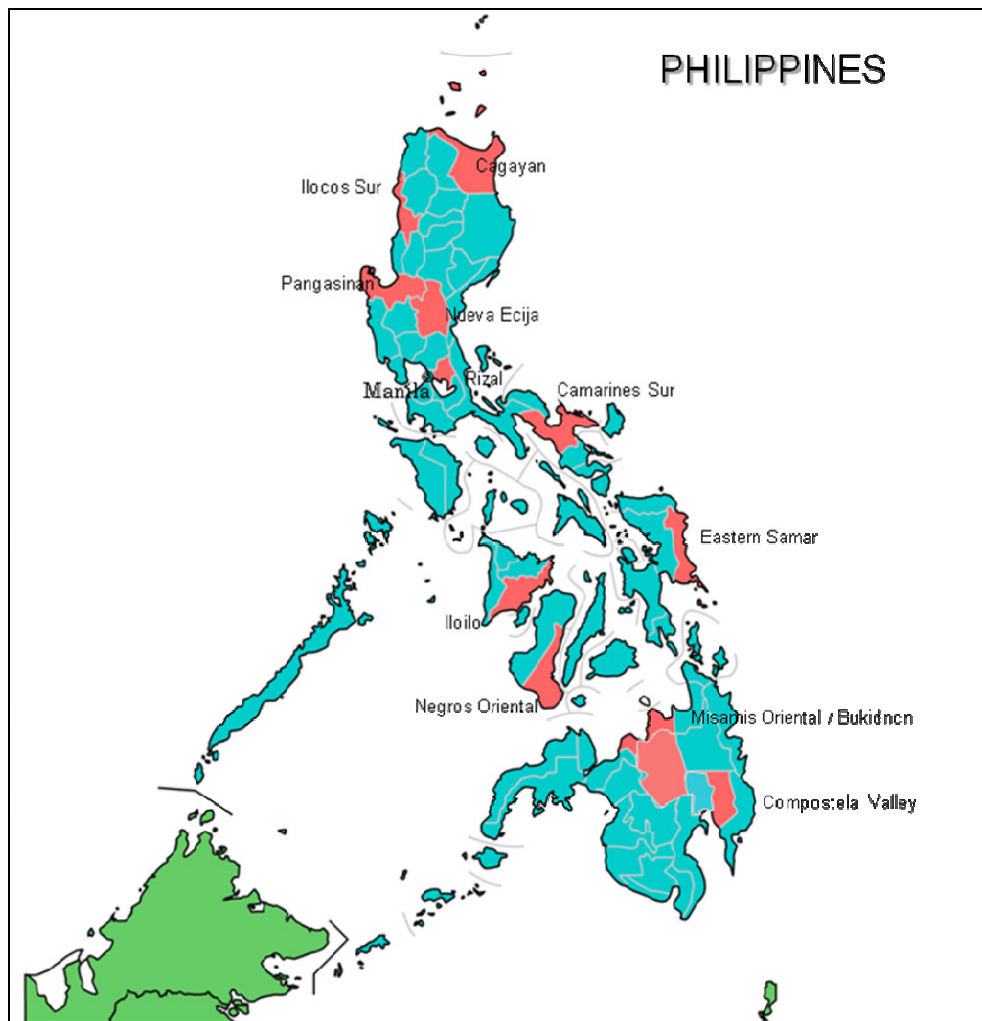


Chart 1. Location of project sites (Red portions)

As seen in the following “Table 2. Comparison of outputs”, although the plan and actual outputs differ, the overall project scale is almost the same.

Table 2. Comparison of outputs

Province	Plan			Actual		
	Total length (km)	Number of road sections	Target bridges	Total length (km)	Number of road sections	Target bridges
1. Ilocos Sur	36.1	4	4	17.33	1	3
2. Pangasinan	40.6	4	2	86.38	10	3
3. Cagayan	39.7	2	5	31.43	2	0
4. Nueva Ecija	31.6	1	6	53.45	4	4
5. Rizal	28.8	3	1	17.90	2	0
6. Camarines Sur	9.5	1	1	19.95	1	4
7. Iloilo	43.7	4	2	35.93	3	5
8. Negros Oriental	48.7	2	3	17.29	1	1
9. Eastern Samar	16.2	2	0	19.47	2	0
10. Misamis Oriental	41.2	1	0	24.71	2	0
11. Compostela Valley* ¹	29.3	2	4	34.43	2	0
12. Bukidnon* ²	—	—	—	8.0	1	0
Total	365.4	26	28	366.27	28	20

*1. The name of province “Davao del Norte” at appraisal was changed to “Compostela Valley”.

*2. Bukidnon was added because of change of a project road.

Details of the change of scope are as follows:

With regard to sub-projects, many road sections were deleted/cancelled in the provinces³. The reason for the change of scope of sub-projects is that the many road sections that were part of the original plan had already been repaired by the Philippine Government. Because of the time having elapsed between the appraisal and the detailed design, which was more than two (2) years, the localities could not wait for the project to start. Accordingly, repair works which were similarly necessary were separately implemented. These alternative roads satisfied the 4 criteria decided as preconditions during the appraisal, e.g., that the EIRR should be higher than 15%.

With regard to each road section improved as planned, the scope was occasionally changed to better suit the site conditions, based on detailed design research.

There is no particular change about the content of consulting services. The implementing agency, DPWH highly evaluates the performance of the consultants. Although M/M of Project Management Consultants (PMO) and local consultants exceeded the original plan, this is owing to the extension of the entire construction period, as stated below in 3.2.2.1 Project Period.

With regard to the influence of the change of scope on the project purpose, the project seems to have been conducted in line with the project purpose, despite the change of scope.

³ According to the replies of questionnaire to the implementing agencies, as far as the number of road sections is concerned, about half of the original plan was cancelled, as the construction was conducted by the Philippine government. Other road sections were improved by the use of remaining budget of this project.

3.2.2 Project Inputs

3.2.2.1 Project Period

For this project, the planned schedule was 5 years and 4 months from the L/A (Loan Agreement) signing (July 1995) to the completion of civil engineering work (October 2000). The actual L/A signing was in August 1995, while the overall civil engineering work was finished in April 2007. In other words, the project period actually became 141 months, significantly longer than the planned 64 months, which means the rate of actual period to the plan is 220.3%.

(Breakdown of period by stages)

Stage	Plan (months)	Actual (month)	Ratio of Actual to Plan
1. Selection of consultants (Project management)	12	4	33%
2. Selection of consultants (Local consultants)	18	11	61%
3. Selection of sub-projects	6	9	150%
4. Detailed design	12	20	167%
5. Selection of contractors	30	31	103%
6. Construction	34	80	235%
7. Construction management	34	82	241%
8. Land acquisition	12	16	133%

As shown above, the critical factor of the delay was the extended construction period. This was due to the following factors, of which “Change in scope based on the actual field condition” was the most influential.

- Additional roads in 6 provinces⁴
- Bad weather
- Change in scope based on the actual field condition⁵
- ROW problem
- Problematic Contractor’s performance (very partial)⁶

Other factors behind the difference between the plan and actual period are as follows:

The reason for the longer detailed design period is also due to the major change of scope (road extensions) in some areas. The reason for the consultant selection shorter than plan is that the mode of procurement for consultants was through a Negotiated Contract. The loan effectiveness also took 10 months, much longer than the usual 3-4 months⁷.

3.2.2.2 Project Cost

The originally planned project cost was 8,925 million yen in foreign currency and 2,002 million pesos in domestic currency (8,268 million yen*), which totaled 17,193 million yen. Among the 17,193 million yen, 12,895 million yen was a yen loan, and the remaining 4,298 million yen was planned to be shouldered by the Philippine government.

⁴ “Additional roads” were, in many cases, replacements for roads that had been cancelled from the original plan, as they were constructed by the Philippine government. Therefore, the construction is time consuming, because the activity has to start from scratch, i.e. from project identification, which resulted in a longer implementation period.

⁵ When considerable time passes after the F/S, there is potential for geological conditions to change due to typhoons or other factors. Consequently, it becomes inevitable to modify the scope.

⁶ Based on PCR (Project Completion Report) and the interview to the executing agency.

⁷ This is due to the addition of preconditionalities by the Japanese government to the Philippines’ side.

* Exchange rate: 1 peso=4.13 yen (as at January, 1995)

The actual project cost was 4,893 million yen in foreign currency and 4,470 million pesos in domestic currency (11,622 million yen*), a total of 16,516 million yen, of which 12,514 million yen was a yen loan, and the remaining 4,002 million yen was shouldered by the Philippine government.

* Exchange rate: 1 peso=2.6 yen (weighted average during the project period)

As shown above, although the degree of change of scope is considerable, when we look at the overall length, number of road sections and target bridges as a whole, there is little difference before and after the project. Accordingly, in calculating the rate of actual cost to planned cost, the scope change was not reflected.

In terms of the Japanese yen, the actual cost is significantly lower than planned and the rate of actual to planned cost is as low as 96.1%. For information, in peso terms, however, the rate of actual to plan is 152.6%. In other words, the actual cost exceeded the plan but because of the considerable appreciation of the Japanese yen in terms of foreign exchange, the cost appears to be under-budget.

There are 2 major factors behind the cost increase as follows:

1. Extended construction period owing to many changes of scope and the addition/replacement of sub projects
2. Considerable increase of the cost of materials, labor and fuel and so on

With the above in mind, although the project period was significantly longer than planned, the project cost was lower than planned, therefore efficiency of the project is fair.

3.3 Effectiveness (Rating: a)

3.3.1 Quantitative Effects

3.3.1.1 Results from Operation and Effect Indicators

AADT (Annual Average Daily Traffic) has steadily increased as compared with the forecasted figures at appraisal. For example, while the forecasted annual average traffic growth rate is 2.91%, the actual growth rate is 2.40%. (Actual growth rates are slightly lower than forecast in general. But the period of actual growth rates does not include 1997-2000. According to the census, this period during 1997-2000 shows very high population growth rate as compared with the following period. If we could include the period during 1997-2000 in the calculation of actual growth rates, the rates would have been higher than the figures in the table.)

Table 3. Change of AADT (Annual Average Daily Traffic) over time

Province	Project Road	Before the project (2000)	After the project (2009)	Actual Annual Growth Rate (%) (2000-2009)	Forecasted Annual Growth Rate (%) (1997-2009)*
1. Ilocos Sur	Tagudin-Suyo	1,294	1,548	2.01	n.a.
	Santiago-Lidlidda	2,407	2,872	1.98	3.00
	Candon-Salcedo	4,648	5,539	1.97	n.a.
2. Pangasinan	Carmen-Bayambang	8,677	11,079	2.75	n.a.
	Bayambang-San Carlos	8,677	11,079	2.75	3.00
	Jct. Agno-Agno	1,850	2,326	2.58	3.00
	Lingayen-Labrador	4,902	6,180	2.61	3.00
	San Carlos-Manat	8,677	11,079	2.75	3.00

	Manaoag-Jct.Pao Road	2,807	3,536	2.60	3.00
	Binalonan-Jct.Pao	2,807	3,536	2.60	3.00
3.Cagayan	Jct.Gattaran-Capissayan	1,065	1,291	2.16	3.00
4.Nueva Ecija	Laur-Gabaldon and other	n.a.	n.a.	n.a.	2.03
5.Rizal	Marikina-Rodriguez-Wawa and other	n.a.	n.a.	n.a.	3.00
6.Camarines Sur	Sipocot-Calabanga Road	4,068	5,028	2.38	3.00
7.Iloilo	Barotac Viejo-San Rafael Road	2,116	2,586	2.25	3.00
	Tigbauan-Cordova-Leon Road	3,083	3,792	2.33	3.00
	Miagao-Igbaras Road	387	474	2.28	2.28
8.Negros Oriental	Bayawan-Basay Road and other	n.a.	n.a.	n.a.	3.00
9.Eastern Samar	Dolores-Oras-San Policarpo	1,139	1,416	2.45	3.00
10.Misamis Oriental	Cagayan de Oro-Tikalaan and other	n.a.	n.a.	n.a.	3.00
11. Compostela Valley	Compostela-New Bataan and other	n.a.	n.a.	n.a.	3.00
Simple average				2.40	2.91

Source : DPWH

*Note : At appraisal

3.3.1.2 Results of Calculations of Internal Rate of Return (IRR)⁸

According to the re-calculation of EIRR (Economic Internal Rate of Return) based on the actual construction cost and the AADT, based on the same method as the appraisal, the entire situation is comparable to the EIRR estimated at appraisal and the required level of 15% to conduct a project was satisfied for almost all project roads. Hence the economic profitability of the project is estimated.

3.3.2 Qualitative Effects

The summary results of the beneficiary (Residents' and Passengers') survey⁹ conducted in Pangasinan and Nueva Ecija are as follows. Increase of shipping volume of products and improvement of access were confirmed.

The total number of resident respondents was 379, who were residents living at the roadsides or neighborhoods of the project roads. The main occupations of the respondents were those with no regular job/housewives, employers (storekeepers and so on), farmers, blue-collar workers and public servants. Over 70% of them (280) use those project roads daily.

The following are the responses concerning the direct benefits of this project:

- This project has brought an increase in the shipping volume of goods (mainly crops).

⁸ The financial internal rate of return (FIRR) shall not be calculated because this project does not generate income without toll fare collection.

⁹ We could not conduct beneficiary survey in all the project sites. Accordingly, we selected the survey sites carefully based on such criteria as budget scale of sub-project (preference on bigger projects), geographical distribution of projects (we tried not to select nearby sub-projects) and security (preference on less dangerous area).

225 respondents, who are nearly 60% of the total, agreed on this.

- The smoother traffic realized by this project has contributed to the distribution of goods to and from further destinations. In “distribution of goods to further destinations”, nearly 50% of the respondents agreed and in “distribution of goods from further destinations” more than 50% agreed.
- Reduced travel time were realized. 276 people, more than 70% of the total, agreed. In addition, 200 replied that the previous 1 hour travel had been shortened by 15 minutes or more.
- Improved access was demonstrated by the following rates:

Destination	Rate of respondents who said access was improved (%)
Markets and stores	90.5
Social services (schools and so on)	78.1
Hospitals	70.2
Government offices	74.1
NGO offices	46.2
Others	20.3

The total number of passengers responding was 68, of whom the main occupation was driver. Over 90% of them (66 people) use the project road daily.

The following are responses concerning the direct benefits of this project:

- This project has brought an increased shipping volume of goods (mainly crops). 37 people, more than 50% of the total agreed on this.
- The smoother traffic realized by this project facilitated the distribution of goods to and from further destinations. More than 50% of the respondents agreed on the facilitation of the distribution of goods to further destinations, while nearly 50% agreed on the facilitation of the distribution of goods from further destinations.
- Reduced travel time were realized. 62 people, more than 90% of the total, agreed. In addition, 40 people replied that the previous 1 hour travel had been shortened by 15 minutes or more.
- Improved access was reflected in the following rates:

Destination	Rate of respondents who said access was improved (%)
Markets and stores	88.2
Social services (schools and so on)	88.2
Hospitals	70.6
Government offices	73.5
NGO offices	39.7
Others	30.9

With the above in mind, this project has largely achieved its objectives, therefore its effectiveness is high.

3.4 Impact

3.4.1 Intended Impacts

First, information related to impact on 2 areas where the site survey was conducted is as follows:

① Pangasinan: Data on the impact which the project roads may have made was obtained as follows. Indicators show the development after the project completion (June, 2006) in aspects of agriculture, business activities and tourism. According to the interview with the related governmental staff, improving the project roads is estimated to have contributed to the positive indicators to a certain degree.

When we look at the results of the beneficiary survey, more than 40% of residents reported the increase of job opportunities and household income. It also shows that more than 40% of respondents answer “Yes” to both the following questions: “Do you think that the project has had an impact on expanding the destination of agricultural or industrial products?” and “Do you think that the project has had an impact on expanding the origin of agricultural or industrial products?”. This may be interpreted as evidence of the project’s contribution to agriculture. (The total number of resident repliers is 199 and they live along or near the project roads. The detail of beneficiary survey is attached as APPENDIX 1.)

Table 4. Indicators on the impact brought by the project (Pangasinan)

Indicators	2003	2004	2005	2006	2007	2008	2009
Rice production within the province (MT= Metric tons)	800,438	809,240	835,874	976,198	1,011,115	1,027,289	n.a.
Corn production within the province (MT)	113,792	130,675	188,957	199,227	199,120	211,229	n.a.
Number of registered business establishments by sector in Pangasinan	n.a	n.a.	5,805	5,991	6,135	7,114	6,611
Number of persons by Registered Business Establishments in Pangasinan	n.a	n.a.	18,346	15,969	18,093	19,710	16,640
Investments of BN registered establishments (Million Peso)	n.a	n.a.	3,612.8	7,586.6	5,720.7	11,456.3*	1,406.9
Total tourist arrivals	n.a	n.a.	43,392	53,404	56,505	58,200	n.a.

Source : Bureau of Agricultural Statistics, DTI-Pangasinan, Department of Tourism, Regional Office 1

*Note : There was a series of construction of large scale commercial facilities this year.

Agricultural production has been increasing continuously since early 2000s and business activities have also been active since 2005. The slowdown of business activities in 2009 may have been caused by typhoons that year. The number of tourists has also been increasing since 2005.

According to the DTI-Pangasinan, improvement of roads may have not only realized easier transport of agricultural products but also reduced the transport time, contributing to total agricultural production. In addition, the improved roads may be contributing to activate business activities by reducing the transport cost. Road improvement has also contributed to securing alternative roads for transport during large scale natural disasters, by improving the

local road network.

The Bureau of Agricultural Statistics (Pangasinan) states that the potential of the project roads' contribution to agricultural production is strong, as the farmland is spread over the entire Pangasinan, although it is difficult to find a clear cause-effect relationship from the statistics.

The Engineering Office in the Pangasinan Provincial government also mentioned that, as a benefit of the project road, farmers' access to market had improved.

A summary of the other interviews is as follows:

- Transport companies (staff of 14 companies such as drivers of vehicles, bus conductors): All the companies pointed out the benefit of the reduced transport time. 5 companies replied that they had also increased company profit.
- Companies and shops along the road (various business sectors, total 13): 12 companies mentioned the benefit of the reduced transport time. 6 companies replied that they had also increased company profit.
- Barangay captains of barangays near the road (6 people): The population of barangays varies from 669 to 3,658. All the barangay captains mentioned benefits such as reduced travel time and also the decrease of floods during the rainy season. In their overall evaluation results, in terms of 5 grade evaluations, 4 captains chose "Excellent" (5), 1 chose "Good" (4) and 3 captains chose "Neutral" (3).

② Nueva Ecija: Data on the impact which the project roads may have had was obtained as follows. Indicators show the development after the project completion (May, 2003) in terms of agriculture and business activities. According to an interview with the related governmental staff, improving the project roads is estimated to have contributed to the positive indicators to a certain degree.

When we look at the results of the beneficiary survey, about 30% of residents reported the increase of job opportunities and more than 40% reported the increase of household income. It also shows that more than 50% of respondents mentioned "Yes" to both the following questions: "Do you think that the project has had an impact on expanding the destination of agricultural or industrial products?" and "Do you think that the project has had an impact on expanding the origin of agricultural or industrial products?". This may be interpreted as evidence of the project's contribution to agriculture. (The total number of resident repliers is 180 and they live along or near the project roads. The detail of beneficiary survey is attached as APPENDIX 1.)

Table 5. Indicators on the impact brought by the project (Nueva Ecija)

Indicators	2003	2004	2005	2006	2007	2008	2009
Rice production within the province (MT= Metric tons)	716,168	733,246	738,805	777,844	881,505	892,046	884,595
Onion production within the province (MT)	53,315	42,810	37,177	29,994	77,850	70,289	n.a.
Number of registered business establishments by sector in Nueva Ecija	n.a	4,221	4,499	4,265	4,787	5,528	4,727
Employment Generated	n.a	15,163	15,377	16,013	15,521	16,464	12,983
Investments of BN registered establishments (Million Peso)	n.a	1,742	1,473	1,485	1,846	2,123	1,281

Source: Nueva Ecija Provincial government (Agricultural Dept.), Bureau of Agricultural Statistics (Cabanatuan city), DTI – Nueva Ecija

According to the Nueva Ecija Provincial government (Agricultural Dept., City Planning Dept.) and the Bureau of Agricultural Statistics (Cabanatuan city), Zaragoza – Jaen Road (Segment 3 of project sites in Nueva Ecija, Chart 2 of the next page), one of the project roads is used as follows. Goods going to Zaragoza are eventually delivered to Manila and those going to Jaen are delivered to Cabanatuan (local major city, near Sta Rosa in the Chart 2). In that sense many rice farmers around the road section are estimated to be benefiting in terms of easier access to market and reduced transport time. Tablang (Laur) – Gabaldon Road (Segment 1 of project sites in Nueva Ecija, the following Chart 2) may also be contributing to the active transport of agricultural products in the direction of Laur / Tablang. In this area, onions, which are the major product of Nueva Ecija, are widely produced in addition to rice. The transport of goods between Nueva Ecija and its neighboring province in the east, Aurora, is expected to be improved by the project. Aurora faces the sea and there are ports and beach suitable for swimming and marine sport near the end of the project road. Therefore, the transport of fishery products will be boosted and also the flow of tourists from Nueva Ecija to Aurora, as Nueva Ecija is landlocked.

Other provincial data is also listed above. It is not clear how much the project roads directly contributed due to a lack of information. The abovementioned improvement of efficiency in transport, however, may have also contributed to industries other than agriculture.

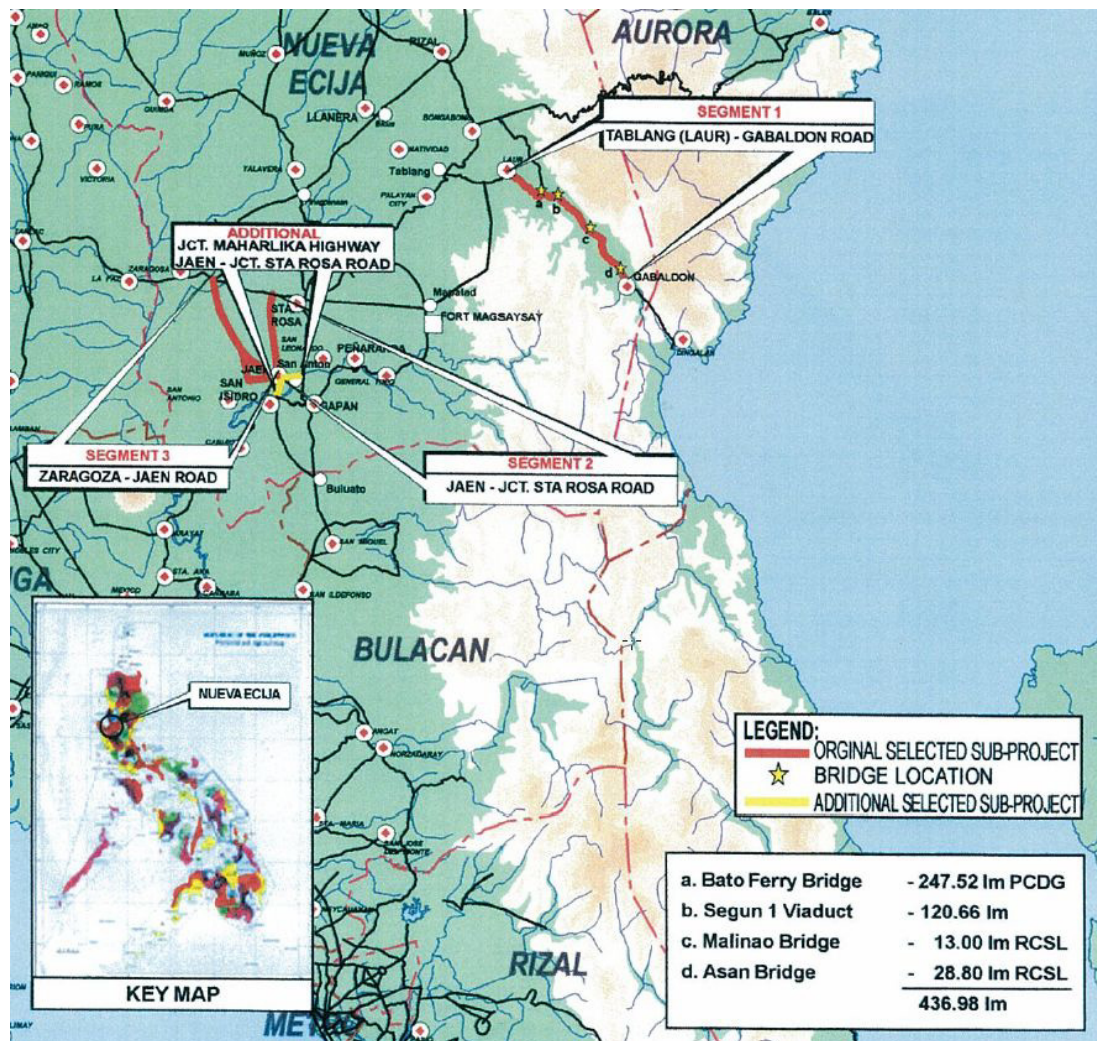


Chart 2. Project sites in Nueva Ecija province

*Note: “KEY MAP” means the entire Philippines.

Finally, almost all the indicators deteriorated in the year 2009 and the influence of the typhoon was considerable, particularly on agriculture. The following table shows the number of typhoons which struck this area, in which 2009 stands out.

Year	2005	2006	2007	2008	2009
The number of typhoons which struck this area	1	3	1	1	6

Source: Information of Philippine Atmospheric Geophysical and Astronomical Services

The results of other interviews are summarized as follows:

- The provincial government of Nueva Ecija, Director, Office of Civil Works: This project has had a certain benefit for the local community. The transport of agricultural products from farm to market has become easier. In addition, the time needed for transport has been reduced and the mobility of local people has increased. In a comprehensive 5 grade evaluation, he gave the second-highest level “Good”, mentioning it would have been better, if the road and shoulder were wider.
- Transport companies (3 drivers or owners of tricycle, jeepney or truck): All the interviewees mentioned benefits such as reduced transport time and the ability to transport heavier cargo than before, while 2 interviewees stated that the competition among companies had intensified.
- Companies and shops along the road (various business sectors, total 6): All 6 interviewees mentioned benefits such as reduced travel time, the ability to transport heavier cargo than before and the decreased damage by typhoons. All 6 interviewees also mentioned the increase of company profits.
- Barangay captains of barangays near the road (9 people): The population of barangays varies from 1000 to 5000 (approximate figures). All the captains mentioned benefits such as reduced travel time and better access to hospitals. As the comprehensive evaluation of the project, 4 captains gave 5 (Excellent), 3 captains gave 4 (Good) and 1 captain gave 2 (Slightly Negative) with 1 not responding.

③ Other economic indicators

Agricultural statistics of 8 provinces except Pangasinan, Nueva Ecija and Cagayan¹⁰ are shown as follows.

Production of rice and corn over time is shown below. The project completion dates in these 8 provinces varies from 2003 to 2007. When we compare the data of the traffic amount of Pangasinan¹¹ with other provinces, it is similar and it is estimated that the entire project may have also contributed to the agricultural production to a certain degree.

Table 6. Production of rice and corn in 8 provinces

Item	2005	2006	2007	2008	2009
Rice (thousand tons)	1,630	1,789	1,847	1,941	1,900
Annual growth rate (%)	-7.18	9.74	3.25	5.12	-2.14

¹⁰ Because of the lack of available data, Cagayan is not included.

¹¹ Data for Nueva Ecija was not available.

Corn (thousand tons)	414	481	546	604	493
Annual growth rate (%)	23.02	16.23	13.50	10.65	-18.42

Source : Bureau of Agricultural Statistics website (www.bas.gov.ph)

3.4.2 Other impacts

There is no particular problem as a whole.

- (1) Impacts on the natural environment: In this project, the impact was regarded as “small”, as the project is the improvement of the existing roads and the project received ECC exemptions. According to the questionnaire replies from the DPWH District Offices, there seems to be no negative impact on the natural environment.
- (2) Land Acquisition and Resettlement: According to the questionnaire replies from the DPWH District Offices, no particular problems or disputes occurred in relation to land purchase. In the project, the DPWH was supposed to complete the land acquisition before the JICA’s agreement of the main construction contract, with the smooth implementation in mind. As a result, land acquisition was almost completed before the start of construction. The process of land acquisition was not significantly delayed, either.
- (3) Unintended Positive/Negative Impact: Not particularly reported.

The detailed situations following actual visits to 2 sites were as follows:

(Pangasinan)

- a. Impact on the natural environment: The site condition was checked using JICA’s standard environment checklist in an interview with the implementing agencies but no particular problem was found. The consultant team actually visited sites (part of the project roads) but did not observe any particular problems, either.
- b. Relocation of residents and land purchase: Among the 4 offices in charge of the project roads (3 DPWH District offices and the Pangasinan Provincial governmental office), information was collected from 2 offices. Compensation was paid for about 700 households, in total. With regard to the compensation, it was time consuming but no particular problems or disputes occurred in relation to land purchase. There was no relocation of residents.

(Nueva Ecija)

- a. Impact on the natural environment: The site condition was checked using JICA’s standard environment checklist in an interview with the implementing agencies but no particular problem was found. The consultant team actually visited sites (part of the project roads) but did not observe any particular problems, either.
- b. Relocation of residents and land purchase: There are 2 offices in charge of the project roads (DPWH, District office and the Nueva Ecija provincial government), which the consultant team visited. Around the project roads under the jurisdiction of the DPWH, compensation was paid related to land use for road improvement to 500-1000 households. (NOTE: It was an activity conducted in around 2000 and no detailed records remain.)
With regard to the compensation level determination, the Provincial Appraisal Committee¹² decides the level of compensation considering the land tax, assessment by financial organizations and the market price of the land. To agree compensation, 5 staff members of

¹² The committee consists of the Provincial Assessor’s Office, Provincial Engineering Office and Provincial Treasury Office.

the DPWH District Office, Planning Div. negotiated with residents for about 6 months. No particular problems or disputes occurred in relation to land purchase. There was no relocation of residents.

From the point of view of improvement of economic indicators in regions including the project sites, the results of beneficiary surveys which support such indicators and the results of analysis of interviews to various stakeholders, the expected impact of the project such as the promotion of regional industries and the improvement of the living standards of inhabitants is estimated to be realized to a certain degree. Negative impact on natural environment and others was not observed.

3.5 Sustainability (Rating: b)

3.5.1 Structural Aspects of Operation and Maintenance

The District Offices mainly conducted the operation and maintenance of the project roads and facilities improved/constructed. The number of O&M staff members in all the District Offices was almost sufficient. The turnover ratio is very small and staff are very stable everywhere¹³.

Responsibility for some of the road sections has been transferred to provincial governments. For example, in Pangasinan province, 2 out of 10 project roads are maintained by the Pangasinan provincial government. There was no particular problem in the operations. In Nueva Ecija, 3 out of 4 project roads are maintained by the provincial government but there is no particular problem, either.

3.5.2 Technical Aspects of Operation and Maintenance

The usual O&M methods in use are as follows:

- cleaning & desilting of drainage structures
- resealing of pavement cracks and joints
- vegetation control
- application of concrete epoxy of PCCP blocks with scaling.

According to the questionnaire replies from the DPWH District Offices and interviews with them, O&M staff can conduct their tasks without particular technical problems. O&M manuals are in use in all the offices and they are common manuals issued by the DPWH.

With regard to the skills of the staff, in addition to OJT in each District Office, DPWH Regional Offices periodically conduct training, to which District Offices dispatch their staff.

3.5.3 Financial Aspects of Operation and Maintenance

The road maintenance budget amounts of the entire DPWH in recent years were as follows. Every year a certain maintenance budget is secured.

Table 7. Road maintenance budget of the entire DPWH Unit: million pesos

Year	Routine/ Carriageway maintenance	Roadside maintenance	Preventive maintenance	Total length of national roads (km)
2007* ¹	2,021	1,750	7,300	29,968
2008* ²	4,021	1,850	6,690	30,224
2009	3,500	2,020	7,300	30,594

Source: Bureau of Maintenance, DPWH

¹³ However, the District Office of Nueva Ecija uses an outside contractor for road maintenance and the necessary funds come from a relatively temporary budget ("Employment Creation Program (2004-2010)" under the Arroyo government, which is stated in the following 3.5.3 Financial Aspects of Operation and Maintenance).

Note : *1. In 2007, 720 million Pesos of so-called “Special Road Safety Fund” were also allocated.

*2. In 2008, 663 million Pesos of “Road Safety Projects” were also allocated.

According to the questionnaire replies from the DPWH District Offices and interviews with the offices, many offices¹⁴ in charge state that the O&M budget is not sufficient.

Also according to the Bureau of Maintenance of DPWH, over the last few years, among steady maintenance budgets, the whole “Roadside maintenance” has been completely dependent on the time-limited measure by the former president Arroyo (“employment creation program” for the period 2004–2009) and there is future uncertainty concerning the financial source of this portion. If the program finishes, there will be some influence on the sufficiency of personnel in District Offices in charge of project roads. (There is related explanation in footnote 13.)

3.5.4 Current Status of Operation and Maintenance

According to the questionnaire replies from the DPWH District Offices, interviews with the offices and site visits by consultants¹⁵ and local surveyors¹⁶, it was confirmed that most of the project roads are in use without problems. In a very limited section of the project roads, however, problems such as small cracks were found and need to be repaired. (According to local surveyors, in the Jaen – Zaragoza section, a very limited part of the project road in Nueva Ecija, approximately 20 small cracks were found.)

Also, according to the abovementioned beneficiary survey, 304 people, representing 80.2% of the total respondents, were satisfied with the road maintenance status. (Not satisfied: 5.3%, No reply: 14.5%)

With the above in mind, some problems have been observed in terms of finance; therefore sustainability of the project is fair.

4. Conclusion, Lessons Learned and Recommendations

4.1 Conclusion

The relevance of this project is high because the project is highly consistent with the following three matters: the development policy of the Philippines at the time of both the appraisal and the ex-post evaluation; development needs; and Japan’s aid policy. Project period is significantly longer than planned and project cost is lower than planned, therefore efficiency of the project is fair. The effectiveness as seen in the operation and effect indicators and the internal rates of return is high and an impact was also created. Some problems have been observed in terms of finance; therefore sustainability of the project is fair.

In light of the above, this project is evaluated to be satisfactory (B).

4.2 Recommendations

4.2.1 Recommendation to the executing agency

Allocation of the O&M budget is not sufficient and there is some uncertainty in future with regard to the roadside maintenance budget. Therefore, the budget of O&M should be secured in general.

¹⁴ 7 out of 10 responding District Offices replied the insufficiency of O&M budget.

¹⁵ Consultants (Ex-post evaluation team members) visited the project roads in Pangasinan and Nueva Ecija. The local consultant visited Ilocos Sur, Iloilo and Rizal. Hence 5 out of 11 provinces were covered.

¹⁶ Local surveyors also visited the project roads in Pangasinan and Nueva Ecija more intensively, as they conducted a beneficiary survey.

4.2.2 Recommendation to JICA

Nothing in particular.

4.3 Lessons Learned

One of the reasons why the construction period was extended is the frequent changes of scope due to various findings at the time of Detailed Design (D/D). With regard to this issue, it is not appropriate to stick to the original scope and proceed in order to avoid a prolonged construction period. However, when a long time has elapsed after conducting the F/S, geological conditions may change significantly owing to typhoons, for example. Accordingly, substantial modifications in terms of repair methods, construction period and cost may become inevitable. Such a situation may affect the project in the form of extended project period and fund shortages and also project evaluation.

Therefore, it is worth considering a review of F/S before D/D and making the necessary amendment to the basic elements of the project plan, when considerable time has elapsed after F/S and the geological condition has changed significantly.

APPENDIX 1. The summary of beneficiary survey (Impact)

1. The results of the abovementioned beneficiary survey in Pangasinan are as follows:

The following were the concrete responses by 199 interviewed **residents** concerning the impact of this project:

1. Job opportunity: Did you get any new job opportunities after this project? Yes (45.2%), No (43.7%), No answer (11.1%)
2. Change in income: Did your household income increase after this project? Yes (44.2%), No (33.7%), No answer (22.1%)
3. Has this project brought an increased shipping volume of goods? Yes (50.3%), No (5.5%), No answer (44.2%)
4. Has the smoother traffic realized by this project contributed to the distribution of goods to further destinations? Yes (41.2%), No (5.5%), No answer (53.3%)
5. Has the smoother traffic realized by this project contributed to the distribution of goods from further destinations? Yes (45.2%), No (7.0%), No answer (47.7%)
6. Change in the number of traffic accidents: Increased (91.0%), decreased (3.5%), Unknown (5.5%)
7. Impact on properties and houses: There was an impact (1.5%)
8. Change in environment after construction
(only the main items extracted, response rate: %)

Item	Deterioration	No change	Improvement
Air	4.0	27.1	68.8
Noise	37.2	33.2	29.6
Water quality	0.5	88.9	10.6

9. Comprehensive evaluation of project benefits

Item	Share of respondents (%)
Excellent	8.5
Good	62.3
Neutral	18.6
Slightly Negative	0.5
Very Negative	0
No answer	10.1

The concrete responses by 40 **passengers** concerning the impact of this project were as follows:

1. Has this project brought an increased shipping volume of goods? Yes (45.0%), No (5.0%), No answer (50.0%)
2. Has the smoother traffic realized by this project contributed to the distribution of goods to further destinations? Yes (42.5%), No (5.0%), No answer (52.5%)
3. Has the smoother traffic realized by this project contributed to the distribution of goods from further destinations? Yes (42.5%), No (2.5%), No answer (55.0%)
4. Change in the number of traffic accidents: Increased (92.5%), decreased (5.0%), Unknown (2.5%)
5. Comprehensive evaluation of project benefits

Item	Share of respondents (%)
Excellent	12.5

Good	60.0
Neutral	27.5
Slightly Negative	0
Very Negative	0

2. The results of the abovementioned beneficiary survey in Nueva Ecija are as follows:

The following were the concrete responses by 180 interviewed **residents** concerning the impact of this project:

1. Job opportunity: Did you get any new job opportunities after this project? Yes (29.4%), No (61.1%), No answer (9.4%)
2. Change in income: Did your household income increase after this project? Yes (42.8%), No (45.6%), No answer (11.7%)
3. Has this project brought an increased shipping volume of goods? Yes (69.4%), No (5.6%), No answer (25.0%)
4. Has the smoother traffic realized by this project contributed to the distribution of goods to further destinations? Yes (53.9%), No (8.3%), No answer (37.8%)
5. Has the smoother traffic realized by this project contributed to the distribution of goods from further destinations? Yes (57.2%), No (11.7%), No answer (31.1%)
6. Change in the number of traffic accidents: Increased (77.8%), decreased (7.2%), Unknown (15.0%)
7. Impact on properties and houses: There is an impact (20.0% - properties, 2.2% - houses)
8. Change in environment after construction
(only the main items extracted, response rate: %)

Item	Deterioration	No change	Improvement
Air	7.8	47.2	45.0
Noise	66.7	22.2	11.1
Water quality	9.4	79.4	11.1

9. Comprehensive evaluation of project benefits

Item	Share of respondents (%)
Excellent	36.7
Good	34.4
Neutral	17.8
Slightly Negative	0.6
Very Negative	0
No answer	10.6

The concrete responses by 28 **passengers** concerning the impact of this project were as follows:

1. Has this project brought an increased shipping volume of goods? Yes (67.9%), No (7.1%), No answer (25.0%)
2. Has the smoother traffic realized by this project contributed to the distribution of goods to further destinations? Yes (64.3%), No (10.7%), No answer (25.0%)
3. Has the smoother traffic realized by this project contributed to the distribution of goods from further destinations? Yes (50.0%), No (3.6%), No answer (46.4%)
4. Change in the number of traffic accidents: Increased (85.7%), decreased (3.6%), Unknown (10.7%)

5. Comprehensive evaluation of project benefits

Item	Share of respondents (%)
Excellent	25.0
Good	57.1
Neutral	7.1
Slightly Negative	0
Very Negative	0
No Answer	10.7

Comparisons of the Plan and Actual Figures

Components	Plan			Actual		
① Outputs						
Province	Total length (km)	Number of road sections	Target bridges	Total length (km)	Number of road sections	Target bridges
1. Ilocos Sur	36.1	4	4	17.33	1	3
2. Pangasinan	40.6	4	2	86.38	10	3
3. Cagayan	39.7	2	5	31.43	2	0
4. Nueva Ecija	31.6	1	6	53.45	4	4
5. Rizal	28.8	3	1	17.90	2	0
6. Camarines Sur	9.5	1	1	19.95	1	4
7. Iloilo	43.7	4	2	35.93	3	5
8. Negros Oriental	48.7	2	3	17.29	1	1
9. Eastern Samar	16.2	2	0	19.47	2	0
10. Misamis Oriental	41.2	1	0	24.71	2	0
11. Compostela Valley	29.3	2	4	34.43	2	0
12. Bukidnon	—	—	—	8.0	1	0
Total	365.4	26	28	366.27	28	20
② Term	July, 1995 ~ October, 2000 (64 months)			August, 1995 ~ April, 2007 (141 months)		
③ Project costs						
Foreign currency	8,925 million Yen			4,893 million Yen		
Local currency	2,002 million Peso (8,268 million Yen)			4,470 million Peso (11,622 million Yen)		
Total	17,193 million Yen			16,516 million Yen		
ODA Loan Portion	12,895 million Yen			12,514 million Yen		
Exchange Rate	1 Peso = 4.13 Yen (As at January, 1995)			1 Peso = 2.6 Yen (Weighted average)		

Third Party Opinion
Rural Road Network Development Project (II)

Josef T. Yap, Philippine Institute for Development Studies

The evaluation process adopts a straightforward methodology and judging from other projects, the methodology is applied consistently. The criteria and ranking are well defined.

When evaluating cost effectiveness, the exchange rate is allowed to vary. Hence the comparison of the budget at the start of the project and the actual cost in yen terms becomes misleading. The main reason is that the actual costs are in peso terms. The project evaluator argues that this is a rule that JICA has set. Nevertheless, as shown in the report comparing yen costs and local currency costs will generate different outcomes about cost efficiency.

There is a difference in the plan and actual outputs of the project on arterial road development. Pangasinan and Nueva Ecija clearly gained while Negros Oriental and Misamis Oriental lost out. For example, the *planned* road length in Pangasinan was 40.6 kilometers and the *actual* road length was 86.38 kilometers. Pangasinan and Nueva Ecija experienced a significant reduction in poverty incidence between 2000 and 2003.¹⁷ Meanwhile, poverty incidence in Misamis Oriental barely went down and increased sharply in Negros Oriental. While it can be argued that this is the evidence that the project had an impact in terms of poverty reduction, it is also an indication that resources are not allocated to provinces where they are needed more. Project resources could have been allocated more equitably.

The survey methodology and conclusions drawn from the survey results are acceptable and sound. However, the choice of Pangasinan and Nueva Ecija for evaluating the effectiveness and impact of the project can be questioned. Since they gained from the changes in the original plan, it is likely the survey results will show a favorable impact. It could have been balanced by survey results from the other provinces.

¹⁷ Data on poverty incidence per province can be obtained from http://www.nscb.gov.ph/poverty/2006_05mar08/table_1.asp