TECHNICAL ASSISTANCE
(Financed by the Japan Special Fund)

TO THE

REPUBLIC OF INDONESIA

FOR PREPARING THE

SECOND ROAD REHABILITATION PROJECT

November 2002
CURRENCY EQUIVALENCES
(as of 15 October 2002)

Currency Unit – Indonesian rupiah (Rp)
Rp1.00 = $0.00011268
$1.00 = Rp9,227

ABBREVIATIONS

ADB – Asian Development Bank
DGLC – Directorate General of Land Communications
DGRI – Directorate General of Regional Infrastructure
IEE – initial environmental examination
IRMS – integrated road management system
km – kilometer
PCR – project completion report
PROGENAS – Pembangunan Lima Tahun (five year development plan)
PSA – Poverty and Social Analysis
RRSP – Road Rehabilitation (Sector) Project
SEPM – strategic expenditure planning module
TA – technical assistance
TOR – terms of reference

NOTES

(i) The fiscal year (FY) of the Government ends on 31 December.
(ii) In this report, "$" refers to US dollars

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I. INTRODUCTION

1. For the 2002–2004 Country Strategy and Program Update for Indonesia, the Government requested the Asian Development Bank (ADB) to provide technical assistance (TA) to prepare a proposed second road rehabilitation project (the Project). The Project is to rehabilitate some of the most deteriorated links of the country road network, to induce economic growth in order to reduce poverty. The Project will also assist the Government to follow up on its action plan for implementing road traffic and transport policies, which was suspended during the financial crisis and has been resumed now under the ongoing first Road Rehabilitation Sector Project (RRSP), and strengthen its institutions to facilitate policy implementation. The RRSP is progressing satisfactorily. It is a sector type loan that covers road links requiring urgent rehabilitation in 17 provinces. Given the RRSP is spread over a large number of provinces, only a limited number of links can be included in each province. The second road rehabilitation project is therefore envisioned to be a project type loan, targeted to rehabilitate strategic national routes in the islands of Kalimantan and Sumatra only, which could not be accommodated under the RRSP. The Fact-Finding Mission (the Mission) was fielded in May 2002. The Mission reached an understanding with the Government on the goals, purpose, scope, cost, time frame, financing, implementation arrangements, and the terms of reference for consulting services for the TA. The preliminary project logical framework is in Appendix 1.

2. The latest five-year plan (PROPENAS) for Indonesia places high priority on the development of infrastructure within overarching objectives of national unity, good governance, economic growth, and poverty alleviation. The plan particularly stressed maintenance and rehabilitation of existing facilities as part of infrastructure development. The road rehabilitation requirements remain high in many provinces of Indonesia. The Government has identified Aceh, Center Kalimantan, East Kalimantan, Jambi, Lampung, North Sumatra, Riau, South Kalimantan, South Sumatra, West Kalimantan, and West Sumatra as priority provinces for intervention in the transport sector in the fiscal years 2002–2004.

II. ISSUES

3. **Policy Issues.** Since 1976, ADB has supported the Government’s efforts to develop the road sector and remove road capacity constraints. ADB assistance is geared to help economic recovery and thus reduce poverty. In the aftermath of the Asian economic crisis, the Government has been preoccupied with addressing the urgent issues of macroeconomic stabilization, financial sector restructuring and bank recapitalization, and augmentation of the resources for social safety nets. In the process, the road sector has received insufficient budgetary allocation, and the road network has suffered considerably from lack of adequate maintenance. Vehicle overloading is also contributing to the very poor condition of the road network. Approximately 70% of the road pavement damage is caused by about 5-10% of vehicles, which are overloaded trucks.

4. Capacity constraints and accessibility are also problems in many parts of the road network. In Kalimantan, in particular, there are heavy volumes of traffic and congestion near the urban centers, and road links to remote areas are carrying low traffic volumes but are in urgent need of substantial improvement to avoid economic and social isolation of local economies.

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1 ADB. 2000. *Report and Recommendation of the President to the Board of Directors on a Proposed Loan to Indonesia for the Road Rehabilitation Sector Project*. Manila.
5. To help sustain economic recovery, the Government is reprioritizing domestic resources to rehabilitate and preserve the existing road network, in particular critical road links that support economic activities and serve poor areas. The Government intends to introduce a system of road user charges to increase the sources of funding for road maintenance and rehabilitation. Measures have been also discussed to reduce vehicle overloading. However, the political and economic situation has delayed the implementation of these needed policy reforms.

6. The ongoing decentralization process has complicated road preservation and policy implementation. The lack of institutional and financial capacity of local governments to finance road works and implement the Government policies and plans in a number of areas, including vehicle overloading, road safety, and vehicle emission controls, is among the major issues faced by the road sector. The impact of decentralization on the budget of local governments and their ability to contribute to counterpart funding and repay ADB loans is another issue. In the absence of adequate on-lending arrangements, it was agreed that the work under the proposed loan will comprise only national roads, which are funded totally by the central Government. Once onlending arrangements are finalized, it will be possible to consider lending to sub-national roads.

7. Finding solutions to these problems is of great concern to the Government. To improve the situation and address it in a sustainable way, coordination between concerned agencies, such as the provincial administrations, Directorate General of Regional Infrastructure (DGRI), Directorate General of Land Communications (DGLC), and police is essential. It also requires a more effective enforcement of the regulations.

8. The Government is making progress in addressing road policy issues, but it needs further institutional strengthening and capacity building to achieve its goals. Domestic resources are currently insufficient to preserve all major roads that are in urgent need of rehabilitation, and the Government has to rely on external assistance.

9. ADB has coordinated with other funding agencies involved in the road sector, in particular the World Bank and the Japan Bank for International Cooperation, to ensure that ADB efforts will be complementary with, and not duplicate or overlap, any ongoing or expected activities.

10. **Poverty Reduction, Environmental, and Social Issues.** The road links to be rehabilitated present different terrain conditions, and traffic characteristics. Some are high traffic volume links, which are easily economically justifiable; some have low traffic volumes but high poverty reduction and developmental impacts or form part of strategic networks, but are more difficult to justify purely on economic grounds. Economic internal rate of return is still the key criterion to govern investment decisions. However, road rehabilitation priority should be based not only on economic return, but also take into account pro-poor benefits such as increased attendance at school and better access to health and other social facilities in the served areas.

11. Environmental conditions vary considerably across the road network. Special attention must be paid to identify environmentally sensitive areas, and environmental criteria should be taken into account in prioritizing road links for rehabilitation. Should any land acquisition and resettlement be necessary, the TA consultant will prepare the necessary resettlement plans in accordance with the ADB's *Handbook on Resettlement*, to mitigate the impact. Similarly, the TA will address indigenous people issues, if any, according to ADB's *Policy on Indigenous Peoples*. 
12. **Technical Issues.** The Indonesian integrated road management system (IRMS) and strategic expenditure planning module (SEPM) software model remain key tools, for the assessment, evaluation, and cost estimate preparation of road works. The TA consultant will carry out a diagnostic review to check the consistency of data input requirements and corresponding outputs, the model applicability per link, and any adjustments required. The traffic data for low trafficked links also needs to be verified, especially for Kalimantan. Growth rates for road traffic should be differentiated where appropriate by links or at least by province, instead of applying a generalized growth rate to all links in IRMS-SEPM, as currently used by DGRI.

13. Traffic data is sometimes inconsistent between sources and years, and is difficult to reconcile, especially in Kalimantan. For instance, the year 1999 data, where it existed, was more accurate than 2000 data. Time series data should therefore be conducted to cross-check data for individual years.

14. In view of the policy, social, environmental, financial, and technical issues on the transport sector, the proposed TA will help the Government to address some of these issues and prioritize future investment plans.

### III. THE TECHNICAL ASSISTANCE

#### A. Purpose and Output

15. The TA will assist the Government in formulating an investment project for strategic road rehabilitation/upgrading in Kalimantan and Sumatra islands. The purposes will be to (i) rehabilitate or upgrade high priority links on the national road network to facilitate economic recovery and reduce poverty; and (ii) help revise road traffic and transport policies by reviewing the Government’s Action Plan for Road Traffic and Transport Policies. The TA will assess policy improvements required to support future investments.

16. The TA will select priority road links in Kalimantan and Sumatra and prepare feasibility studies of the prioritized road links requiring investment. The TA output will include (i) a program of road link rehabilitation and associated activities prepared for subsequent design and funding through external assistance; (ii) preparation of a transport sector policy component; and (iii) terms of reference for consulting services and other documents for preparing future funding.

#### B. Methodology and Key Activities

17. From a long list of about 1,900 kilometers (km) of priority and strategic national road links proposed by the Government, the TA will select about 1,500 km to be rehabilitated under the Project. The proposed rehabilitation works will combine road rehabilitation and upgrading, and bridge reconstruction or replacement. The TA will select the road links to be rehabilitated on the basis of a set of criteria developed in consultation with the Government and ADB. The criteria will include technical, economic, environmental, social, and poverty reduction aspects.

18. To determine prioritized road links, the selection methodology needs to reflect circumstances including areas served by the links and a range of technical, social, economic, environmental, and traffic characteristics. However, the economic internal rate of return will remain the key criterion used in the selection process. IRMS-SEPM inputs and outputs will be reviewed using field surveys and adjusted as necessary, in particular data on road conditions, current traffic volume, and forecasts. Criteria should be consistent with the ones used in the
RRSP, and adjusted as required based on lessons learned from the RRSP. The proposed links will be evaluated to determine the appropriate type of rehabilitation works required. Initial environmental examinations will be conducted on all selected links to identify critical environmental issues, determine environmental category, and identify the need for environmental impact assessments. An initial poverty and social impact assessment will also be carried out for all selected links.

19. Road links proposed under the long list will include (i) portions of the strategic trans Kalimantan south and Sumatra east coast routes, which are not well connected due to missing links or deteriorated conditions; and (ii) strategic links of Sumatra west coast. These routes are used mainly by heavy vehicles transporting goods and agriculture products across national (and international) borders, and from local plantations to factories. They also are the main links connecting the provinces and carry relatively large volumes of interprovincial passenger traffic, especially in Sumatra. The current annual average daily traffic ranges between 100 to 5,000 vehicles in Kalimantan and 3,000 to 8,000 vehicles in Sumatra. The low traffic on some routes in Kalimantan is because some road sections are badly deteriorated.

20. The successful implementation of the Government's Action Plan for Road Traffic and Transport Policies will be key to the sustainability and long-term development of the road sector. The TA will specifically identify mechanisms and resources, such as a road fund, for the routine maintenance of the national road network to complement activities undertaken under the RRSP. Furthermore, the TA will review and report on other issues such as vehicle overloading, which is more problematic in some provinces (e.g., Riau) than in others; road safety; and vehicle emissions. It will facilitate policy development and implementation, and help identify equipment required to assist the Government to implement and enforce the action plan in all provinces, in consonance with the RRSP. The TA will make specific recommendations on the needs for capacity building, to be properly addressed in future assistance proposed for the sector.

C. Cost and Financing

21. The total cost of the TA is estimated at $1.125 million equivalent, of which $697,000 is the foreign exchange cost and $428,000 equivalent is the local currency cost. The Government has requested ADB to finance $900,000 equivalent, which is the entire foreign exchange cost and about 47% of the local currency cost, or $203,000 equivalent. The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan. The Government will finance the remaining local currency cost of $225,000 equivalent in kind, through the provision of counterpart staff, office accommodation, transport in the field, secretarial and office support, and translation services. The detailed cost estimates and proposed financing arrangements are in Appendix 2. The Government has been advised that approval of the TA does not commit ADB to financing any ensuing project.

D. Implementation Arrangements

22. DGRI under the Ministry of Settlement and Regional Infrastructure will be the Executing Agency for the TA. However, DGLC should be closely associated to the TA component related to road policies.

23. The TA will require a total of 76 person-months of consulting services (25 person-months of international and 51 person-months of domestic services). The TA consultants will have expertise in (i) road engineering, (ii) transport and development economics, (iii) road transport policy, (iv) environmental impact analysis, (v) resettlement and social impact analysis,
(vi) poverty analysis, (vii) traffic studies, and (viii) institutional strengthening. A team of consultants from an international consulting firm, in association with domestic consultants, will be engaged by ADB using the simplified technical proposal procedures, in accordance with ADB’s Guidelines on the Use of Consultants (Quality and Cost Based Selection), and other arrangements satisfactory to ADB for the engagement of domestic consultants. The proposals will be evaluated on the basis of qualifications and experience of the required experts, one of the main experts being the team leader. Outline terms of reference for the consultants are in Appendix 3.

24. Suitable counterpart staff from DGRI will be assigned to the day-to-day implementation of the TA. DGRI will provide administrative and technical support to the consultants, including office accommodation (suitably furnished and equipped) and communications facilities, and will ensure that all documents, data, maps, and information relevant to the TA are provided to the consultants in a timely manner. DGRI will, in particular, ensure coordination with DGLC so that all documents related to the road policy component are provided in due time to the consultants. All equipment and materials will be procured by the consultants in accordance with arrangements satisfactory to ADB and turned over to DGRI on completion of the TA.

25. The TA is expected to commence in February 2003 and be completed in 7 months, by the end of August 2003. An inception report will be prepared for consideration by ADB and the Government 1 month after commencement of the TA. An interim report will be prepared within 3 months of TA commencement, comprising the draft list of road links for funding and highlighting key issues and findings. The draft final report will be submitted at the end of month 5. Tripartite meetings between the Government, ADB, and the TA consultants will be held two weeks after submission of each of the reports. The final report will be issued before the end of month 7, incorporating all comments made by DGRI and ADB.

26. The TA consultants will prepare all reports in full coordination with DGRI. DGRI and ADB will review and provide comments to the consultants within 2 weeks of submission of the reports. Comments of ADB and DGRI will be taken into account in the work program and reflected in subsequent reports.

IV. THE PRESIDENT’S DECISION

27. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance in an amount not exceeding the equivalent of $900,000 on a grant basis to the Government of Indonesia for Preparing the Second Road Rehabilitation Project, and hereby reports this action to the Board.
## PROJECT LOGICAL FRAMEWORK

<table>
<thead>
<tr>
<th>Design Summary</th>
<th>Performance Indicators</th>
<th>Monitoring Mechanisms</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goals</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Economic development</td>
<td>Regional income</td>
<td>Baseline surveys</td>
<td>Road development will impact local transport and social and economic activities</td>
</tr>
<tr>
<td></td>
<td>Per capita income</td>
<td>Bureau of Population Statistics official statistics</td>
<td></td>
</tr>
<tr>
<td>2. Poverty reduction</td>
<td>Relevant regional indicators, facilities increased or improved e.g., health, schools, shops, etc.</td>
<td>Asian Development Bank monitoring of baseline indicators</td>
<td>Economic and political stability</td>
</tr>
<tr>
<td><strong>Purposes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Improvement of highway network and accessibility to poor areas</td>
<td>Increase in road traffic, and movement in poor areas</td>
<td>Road traffic surveys and local statistics and surveys</td>
<td>Adequate counterpart funding to implement the Project.</td>
</tr>
<tr>
<td>2. Reduce vehicle operating costs and travel time</td>
<td>40% increase in speed 20% decrease in vehicle operating costs 50% reduction in the pavement roughness indicator</td>
<td>Operator surveys (bus and truck)</td>
<td>Traffic growth occurs as projected</td>
</tr>
<tr>
<td>3. Reduce road deterioration and improve road revenues</td>
<td>Drafting and implementation of related policies</td>
<td>Directorate General of Regional Infrastructure (DGRI) surveys</td>
<td>Government willingness to implement the related policies</td>
</tr>
<tr>
<td><strong>Outputs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Rehabilitation of Strategic Links</td>
<td>1,500 kilometers rehabilitated</td>
<td>Review missions, PCR</td>
<td>Consultants, contractors, and DGRI implement the project effectively</td>
</tr>
<tr>
<td>2. Assistance in implementing selected transport policies</td>
<td>Effective policies prepared approved and implemented according to action plan</td>
<td>Loan review missions, PCR</td>
<td>Experienced consultants and government DGRI and Directorate General of Land Communications collaboration</td>
</tr>
<tr>
<td>3. Institutional strengthening/capacity building</td>
<td>Needs identified</td>
<td>Bench marked improvements to Government capacity, review missions, PCR</td>
<td>Government implements as planned</td>
</tr>
<tr>
<td>4. Community development activities</td>
<td>Activities identified</td>
<td>Review missions, PCR</td>
<td>Government and DGRI support</td>
</tr>
<tr>
<td>Design Summary</td>
<td>Performance Indicators</td>
<td>Monitoring Mechanisms</td>
<td>Assumptions</td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>---------------------------------</td>
<td>-----------------------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Inputs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Consulting services, including Project Preparatory Technical Assistance</td>
<td>Consultants: to be determined</td>
<td>Tripartite meetings and report submission and approvals</td>
<td>Budget sufficient</td>
</tr>
<tr>
<td>2. Design services</td>
<td>Consultants: to be determined</td>
<td>Review meetings and approvals</td>
<td>Budget found for extra services</td>
</tr>
<tr>
<td>3. Civil works</td>
<td>Civil Works: to be determined</td>
<td>Disbursements</td>
<td>Loan amount disbursed effectively and efficiently</td>
</tr>
<tr>
<td>4. Equipment</td>
<td>Equipment: to be determined</td>
<td>Approval of needs, and disbursements</td>
<td>Equipment needs established properly and procured</td>
</tr>
</tbody>
</table>

Note: The project logical framework, in particular the quantitative performance indicators and details of inputs, will be finalized during project preparation under this TA.
## COST ESTIMATES AND FINANCING PLAN

($'000)

<table>
<thead>
<tr>
<th>Item</th>
<th>Foreign Exchange</th>
<th>Local Currency</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Asian Development Bank Financing</strong>&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Consultants</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Remuneration and Per Diem</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. International Consultants</td>
<td>550</td>
<td>0</td>
<td>550</td>
</tr>
<tr>
<td>ii. Domestic Consultants</td>
<td>0</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>b. International and Local Travel</td>
<td>30</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>c. Reports and Communications</td>
<td>5</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>2. Equipment&lt;sup&gt;b&lt;/sup&gt;</td>
<td>15</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>3. Miscellaneous Administration and Support Costs</td>
<td>3</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>4. Representative for Contract Negotiations</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>5. Traffic and Other Baseline Surveys</td>
<td>5</td>
<td>20</td>
<td>25</td>
</tr>
<tr>
<td>6. Contingencies</td>
<td>83</td>
<td>37</td>
<td>120</td>
</tr>
<tr>
<td><strong>Subtotal (A)</strong></td>
<td>697</td>
<td>203</td>
<td>900</td>
</tr>
<tr>
<td><strong>B. Government Financing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Office Accommodation and Transport</td>
<td>0</td>
<td>125</td>
<td>125</td>
</tr>
<tr>
<td>2. Remuneration and Per Diem of Counterpart Staff</td>
<td>0</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td><strong>Subtotal (B)</strong></td>
<td>0</td>
<td>225</td>
<td>225</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>697</td>
<td>428</td>
<td>1,125</td>
</tr>
</tbody>
</table>

<sup>a</sup> The TA will be financed on a grant basis by the Japan Special Fund, funded by the Government of Japan.

<sup>b</sup> Includes miscellaneous office equipment to be transferred to DGRI at the completion of the TA.

Source: Asian Development Bank estimates.
OUTLINE TERMS OF REFERENCE FOR CONSULTING SERVICES

A. Scope of Work

1. The feasibility studies under this technical assistance (TA) will cover about 1,900 kilometers (km) of roads on Kalimantan and Sumatra (trans Kalimantan south route, Sumatra east-coast route, and Sumatra west coast strategic links). The Project is to rehabilitate about 1,500 km of strategic national links (to be determined after the necessary studies are completed).

2. The consultants will achieve the objectives of the TA by adopting a staged approach to the tasks and requirements. The consultants should refer to the criteria in the Road Rehabilitation Sector Project (RRSP) and lessons learned from their implementation and other documentation and reports, as a useful starting point in developing the screening criteria under the TA. All activities under the TA should be conducted in full consultation and involvement of the Executing Agency, the Directorate General of Regional Infrastructure (DGRI).

   (i) **Month 1**: Developing a methodology to formulate selection criteria based on the economic, costs and environmental [which links would require an initial environmental examination (IEE) report] and social impacts. Initiate field surveys of all the road links to verify accuracy of field data on the two islands and prepare the inception report.

   (ii) **Month 2**: Complete the field and traffic surveys of the proposed links and initial screening of the road links following the agreed criteria. Evaluate road maintenance needs and risks of illegal logging through proposed road links.

   (iii) **Month 3**: Produce a preliminary list of all links by order of priority, including draft first year program. Prepare a draft scope for the traffic and transport sector policies component and the interim report, to be presented to the Asian Development Bank (ADB) and DGRI for approval.

   (iv) **Month 4**: Collect further data through additional surveys as necessary to complete the feasibility studies: technical, economic, environmental, social, and poverty impact evaluation etc. Develop criteria and perform a baseline survey, in accordance with ADB requirements outlined in paragraph 20.

   (v) **Month 5**: Finalize the selected road links for rehabilitation under the Project, complete feasibility studies and identify the program to be implemented in the first year, and prepare overall project scope for the draft final report to be discussed and agreed upon during the last tripartite meeting.

   (vi) **Month 6**: Finalize the total road rehabilitation program and complete all remaining tasks incorporating any comments made during the tripartite meetings, and finalizing the reports, including IEE and summary IEE for subprojects for presentation to DGRI and ADB.
(vii) **Month 7**: Issue the final report.

2. **TA Outputs**

3. The main outputs of the consultant’s study will comprise:
   
   (i) a preliminary list of road links resulting from applying the selection criteria,
   
   (ii) a program of highway link rehabilitation and associated activities prepared for subsequent design and funding under the proposed loan,
   
   (iii) preparation of a transport sector policy component, and
   
   (iv) documents and terms of reference (TOR) required for future loan processing and implementation.

B. **Main Tasks**

1. **Task 1—Physical Work Component Comprising Road and Bridge Works**

   a. **Economic Evaluation**

4. The economic evaluation of project components will be undertaken in accordance with ADB guidelines for economic evaluation. Usual techniques to measure the net economic worth of investment are appropriate and the consultants should ensure that all subprojects achieve an acceptable economic internal rate of return. The consultants will define the "with" and "without" project scenarios for the economic analysis, and the economic life of each type of road investment should be determined.

5. Most of the proposed links are on strategic routes and should not require development beyond the existing rights of way. The links and their catchments comprise a wide range of physical, socioeconomic, environmental, and traffic characteristics. The physical links and related terrain conditions in Kalimantan are substantially different from those in Sumatra. The consultants must reflect such differences in their economic methodologies.

6. The consultants will review and verify available input data to be used in the integrated road management system (IRMS) and strategic expenditure planning module (SEPM), road conditions, traffic volumes, and traffic forecasts. Based on the field surveys, IRMS-SEPM output reviews and verifications, the consultants are required to prepare new forecasts for some links, update (and modify as necessary) the forecasts for the other road links, and conduct additional economic evaluation of links as required, using models such as Highway Design and Maintenance Standards Model.

7. The methodology will also need to include a means to establish if, and by how much, traffic currently using other modes (river transport, etc.) would transfer to the rehabilitated links.

   b. **Environmental Impacts**

8. Environmental assessment will be (i) done in accordance with ADB guidelines and government regulations and the rapid environmental assessment checklist for roads; and (ii) in compliance with the Indonesian national standards of environmental and social assessment.
9. The consultants will (i) prepare screening criteria, methodology, considering subproject cost, and cut-off limit and apply them to determine which links require IEE; and (ii) prepare the IEEs. The subprojects that are above the established cut-off limit and those that will anticipate significant environmental impacts will require ADB review. Generally, links that will require IEE are those that: (i) pass through protected forests or ecologically sensitive areas; (ii) require land acquisition; (iii) involve substantial road rehabilitation work, or (iv) are predicted to give rise to negative environmental impacts.

10. Environmental evaluation requires review of these aspects for each link, and determining mitigation plans where such plans and measures are required.

c. Poverty and Social Analysis and Impacts

11. The consultants will ensure that poverty issues and impacts avoidance are fully considered in link selection. For this purpose, the consultants will prepare an initial social assessment, indicating for each considered link, based on the initial survey (i) land acquisition/resettlement impacts and families and people affected; (ii) whether indigenous peoples will be affected; and (iii) type of land acquisition/resettlement and indigenous peoples plans needed.\(^1\) The consultants will also assist DGRI to establish a social development unit to be fully involved in project preparation and implementation.

12. For all selected links (subprojects), the consultants will (i) carry out investigations for the poverty and social analysis (PSA), and (ii) prepare a PSA report based on the ADB’s *Handbook on Poverty and Social Analysis* and project team requirements to ensure that pro-poor aspects are to be fully considered in the prioritization and selection of link roads. Based on existing national, regional, and local statistics, the PSA will, for the project and each subproject, (i) provide a socioeconomic and poverty profile and a stakeholder analysis after conducting a rapid participatory assessment, and (ii) analyze the relationships between poverty and livelihood, trade, and transport patterns in project areas. The consultant will prepare a study on the development needs of poor communities along the road links to be rehabilitated, especially in west and central Kalimantan. The study, in full consultation with local governments and other stakeholders, will examine constraints to development and poverty reduction, recommend activities that could be implemented as part of the project, and provide a preliminary estimate of related costs. The consultant will calculate the poverty impact ratio of the Project using ADB’s guidelines.

13. The consultants will follow ADB’s involuntary resettlement and indigenous peoples policies and project team requirements in preparing: (i) a compensation policy framework and procedural guidelines setting land acquisition/resettlement compensation provisions and implementation procedures for the whole project; (ii) a land acquisition/resettlement plan for each link for which it is needed; and (iii) an indigenous peoples policy framework and development plan for each link for which it is needed.

d. Technical Aspects

14. To meet the technical requirements of the study, the consultants will survey all relevant technical aspects of the proposed program for funding, including:

(i) a visual survey of the conditions of road links and bridges, including pavement and drainage, road width, right of way, and specific problems of failure; and

(ii) design criteria and specifications, including geometric, cross section, design speed, vertical and horizontal alignment, and subsurface properties.

15. The consultants will review the existing standards as a basis for technical screening and design of the first year road links (to be done by others).

16. The consultants should cover the following aspects:

   (i) Propose civil work packages in accordance with the ADB’s procurement guidelines and considering field conditions; and

   (ii) Recommend possible use of innovative technologies such as recycling of asphalt, aging resistant bitumen, and locally available binder materials.

17. The consultants will prepare the necessary standard documents for implementation of the first year program, including prequalification documents.

e. Risk Analysis

18. Several risks will be common to many subprojects. However, as the Project comprises a number of widely differing types of road in differing areas of the country, the consultants should initially identify the major economic and other uncertainties that may reduce each subproject's viability. A suitable risk analysis model should be used if appropriate. The consultants will be expected to justify fully the decision to use or not use a model.

19. The consultants are therefore required to ascertain the economic or related uncertainties that could affect the Project’s viability and sustainability, through a risk analysis. Recommendations on how to mitigate and allocate the identified risks will be required.

f. Baseline Survey Report

20. Baseline surveys will allow effective monitoring of the Project and assessment of the impact of reducing poverty in the area of influence. For poverty and social impact assessment, the baseline survey criteria may include surveying the number and income levels of people served, degree of rehabilitation/upgrading of the proposed links, and estimated costs of the links. The consultants will plan and prepare baseline surveys in accordance with ADB requirements, and these will relate to pro-poor benefits (not incorporated in the cost benefit analysis), traffic, environmental, and other relevant indicators. Such indicators (quantifiable and nonquantifiable) should include average travel speed and time; vehicle operating costs; district income and employment levels; prices of consumer and producer commodities; daily traffic volumes by traffic type; bus services and frequencies; social, education, and health facilities; and health indicators.

2. Task II—Traffic and Transport Policy Component

21. The TA will identify mechanisms and resources to reduce road deterioration and increase road revenues, such as establishing a road fund for the routine maintenance of the national road network. Similar activities undertaken or planned by the Government and other
agencies will be reviewed and analyzed. The TA will examine the needs for capacity building and the recommendations will need to be properly addressed in any future assistance to the sector. The TA will facilitate policy development and implementation, help identify equipment to help implement the proposed policy framework to implement and enforce the action plan in all provinces.

22. The review should consider the adequacy of the existing policy framework and assess areas including, but not limited to, regulation, reform, and law enforcement; private sector participation in road transport facilities; and management information systems. The TA will review and report on other policy-related issues such as vehicle overloading, more problematic in some provinces (e.g., Riau) than in others; road safety; and vehicle emissions.

3. Task III—Consultant Services, Supervision, Training, Capacity Building, and Loan Processing

23. The consultants will describe detailed consultant services and appropriate supervision and training needs, and identify further TA needed. The consultants will prepare several TORs, following discussions with Government and ADB, for future implementation. These will include:

(i) **Consultant services.** The consultants will prepare the TORs for the core supervision team and design consultants, and for the field supervision teams.

(ii) **Training and capacity building.** The needs will be identified through discussions with relevant Government agencies. The consultants will prepare a proposal for training and capacity building, including project management, road and bridge technology, a road maintenance and road safety awareness program.

(iii) **National road database.** The consultants will review the exercise of developing a database of national road network. The TOR should reflect strengths and weaknesses of the existing system and proposals for improvements.

(iv) **Other loan processing documents.** The consultants will provide documents needed for processing the ensuing loan, as agreed with ADB.

C. Reporting Requirements

24. The consultants, in full consultation with DGRI, will prepare the required reports including IEE and summary IEE (of selected road links) for timely submission. Comments of ADB and DGRI made will be incorporated in the subsequent reports.

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Source: Asian Development Bank estimates.