

TERMS OF REFERENCE FOR CONSULTANTS

1. The transaction technical assistance (TA) facility administered by the Asian Development Bank (ADB) will improve innovation and knowledge exchange among transport projects in South Asian countries. Individual consultants and/or consultancy firms will be recruited to i) design and implement innovative features in transport projects through knowledge transfer and/or exchange; ii) prepare knowledge products on the innovative features implemented; and iii) organize and conduct training programs on selected subjects related to the transport sector.

2. The TA will require up to 58 person-months (PM) of individual consulting services and 21 PM of firm-based consulting services (Table 1). Consultants will be recruited by ADB in accordance with ADB Procurement Policy (2017, as amended time to time) and the associated project administration instructions/TA staff instructions. An outline of the terms of reference for key experts to be recruited is provided below.

I. Consultancy Firms

3. **Advisory services for rolling stock operation and maintenance** (1 international railway rolling stock operation & maintenance expert - 2PM, 1 international rolling stock/depot engineer - 2PM, 1 national rolling stock engineer – 3PM, total of 7 PM inputs intermittently over 12 months). The firm will have at least 15 years of experience in rolling stock operation and maintenance projects and/or workshop or depot management. The experts will have a minimum of a bachelors degree in mechanical engineering or railway engineering and have an experience of at least 7 years on rolling stock operations and maintenance or rolling stock depot/workshop management. The tasks of the firm will be to include:

- (i) updating or preparing new manuals and codes for mechanical, store and electrical departments;
- (ii) updating training module for Bangladesh Railway training centers and train relevant Bangladesh Railway staff on it;
- (iii) study the reorganization and modernization of Bangladesh Railway maintenance hubs - loco sheds, carriage depots, wagon depots, and workshops for the entire Bangladesh Railway network as included in the railway master plan; and
- (iv) updainge specifications of rolling stock to international standards for future rolling stock purchases.

4. **Biodiversity management** (1 international wildlife expert – 2PM, 1 international ecological expert – 3PM, 1 international sensor technology expert – 2PM, 1 national railway signalling expert – 3PM, total of 10 PM). The firm should be specialized in ecological issues including terrestrial and aquatic ecosystems and have more than 10 years of experience in conducting ecological assessments, developing management plans to avoid and minimize impacts from infrastructure projects including transport projects. Specific knowledge and experience in railway projects including innovative technology to avoid wildlife-train collisions will be preferred. The international wildlife and ecological experts under the firm will have a master's degree or equivalent in environmental science or wildlife ecology or environmental engineering and related fields and at least 7 years of experience in managing wildlife issues for infrastructure projects. The international sensor technology expert under the firm will have a master's degree or equivalent in electrical or IT engineering and related fields and at least 7 years of experience in designing sensor-based detection technology. The national railway signalling expert will have a minimum of a bachelors degree or equivalent in mechanical engineering or related fields and at

least 7 years of experience in working with railway signaling systems. The tasks of the firm will include

- (i) review of ecological assessment reports prepared for assigned projects and provide technical guidance on the assessment and recommendation of mitigation and enhancement measures;
- (ii) review of mitigation measures included in the project environmental management plans (EMPs) to avoid and minimize impacts on wildlife and their habitat for selected projects with wildlife or ecological issues. Provide recommendations to enhance effectiveness of the mitigation measures as necessary;
- (iii) provision of technical support to railway projects for pilot testing of sensor technology systems that will help prevent wildlife-train collisions in future including procuring required equipment and engaging with sensor technology experts and railway signaling experts;
- (iv) conduct training programs for government executing agencies on managing ecological issues under transport projects; and
- (v) prepare reports/knowledge products/publications for selected projects on experiences and lessons learnt on managing ecological issues.

5. **Project communication** (1 international project communication expert - 2 PM, 1 international communication expert – 2PM, total of 4 PM). The firm should have at least 10 years of experience in developing and implementing project related communications and stakeholder engagement in developing countries. The experts under the firm will have a degree in communications or journalism, social science, public affairs or related fields with at least 8 years of experience in communications for projects in developing countries and must be fluent in reading and writing English. He or she should have proven experience in designing and managing public communications with a wide range of stakeholders including civil society organizations, government, community based organizations, among others. Prior experience in infrastructure projects will be an asset. Tasks of the project communications specialist will be:

- (i) review of existing stakeholder engagement including identification of key stakeholders for assigned projects;
- (ii) review existing communication activities with stakeholders and identify further communication needs and opportunities;
- (iii) from the range of available tools (such as those that are web-based) for project communications and stakeholder engagement, identify tools relevant for respective projects and accordingly prepare a project communications plan that is in line with ADB's Public Communication Policy and related operation procedures and guidelines;
- (iv) implementing the approved project communication plan or relevant sections of the plan as assigned for selected projects; and
- (v) conduct of capacity-building for the respective executing agencies on establishing and implementing the project communications plan including visits to other projects that serve as best practice examples.

II. Individual Experts

6. **Wildlife expert** (international, 2 PM). The expert will have at least 10 years of experience in managing wildlife issues for linear transport infrastructure. The expert will have a master's degree or equivalent in environmental science or wildlife ecology or environmental engineering and related fields. The tasks of the expert include:

- (i) providing technical guidance on the conduct of ecological studies and review study methodology or reports prepared for projects under implementation;
- (ii) conduct of ecological studies for new projects that have significant wildlife issues;
- (iii) providing technical guidance on data collection and analysis for monitoring performance of wildlife related mitigation and enhancement measures that have been implemented under projects;
- (iv) conduct of training or presentations on management of wildlife issues in transport projects for government executing agencies, as part of transport-related training programs and events and other relevant forums; and
- (v) preparing reports and/or knowledge products and/or publications to share information on ecological studies carried out and lessons learned on wildlife-related mitigation and enhancement measures that have been implemented.

7. **Environment specialist** (international, 2 PM). The expert will have at least 10 years of experience in managing environmental issues for linear transport infrastructure. The expert will have a master's degree or equivalent in environmental science or environmental engineering and related fields. The tasks of the expert include:

- (i) providing technical guidance on the conduct of environmental assessments for transport projects;
- (ii) conduct of environmental assessments for new projects with sensitive environmental issues such as noise and vibration, large scale earthworks and spoil disposal, heritage structures, and ecological issues (terrestrial and ecological);
- (iii) training of relevant executing agencies and/or implementing agencies on best practice noise and vibration standards and protocols and monitoring mechanisms; and
- (iv) providing technical guidance on implementing sensitive environmental components of projects such as monitoring of noise and vibration, implementing biodiversity conservation activities, and implementing project EMP and other relevant subjects as needed.

8. **Disaster risk management and climate resilience specialist** (international, 2 PM). The expert will have at least 10 years of experience in designing and monitoring climate adaptation for infrastructure projects. Experience in transport infrastructure will be preferred. The expert will have a master's degree or equivalent in environmental engineering, meteorology and related fields. The tasks of the expert include:

- (i) assessing climate adaptation practices including existing policies, strategies, plans for transport infrastructure in all countries south Asia;
- (ii) identifying global best practice adaptation measures (that are new to one or more countries in south Asia) that could be feasible for application in south Asian countries;
- (iii) identifying one transport project under process for approval in ADB where one or more of the global best practice adaptation measure could be applied;
- (iv) to select best practice adaptation measure in the project design,
- (v) preparing a manual or tool for identifying specific adaptation measures based on climate risks in south Asian countries and incorporating them in transport projects; and
- (vi) based on the findings of activities (i), (ii) and (v), prepare a report for publishing as a knowledge product.

9. **Climate mitigation specialist** (international, 2 PM). The expert will have at least 10 years of experience in designing and monitoring climate mitigation for transport projects. The expert will have a master's degree or equivalent in environmental engineering, transport economics, meteorology and related fields. The tasks of the expert include:

- (i) quantifying greenhouse gas (GHG) emissions and emission reductions from assigned transport project;
- (ii) providing advice on the potential for assigned projects to qualify for climate financing;
- (iii) for selected projects, preparing required studies and documents required for applying for climate finance to relevant donors and financiers;
- (iv) conduct of training for relevant government officials on methods of calculating GHG emissions and emission reductions;
- (v) preparing manuals or tools for use by relevant government officials to continue monitoring GHG emissions and emissions reductions; and
- (vi) preparing reports and knowledge products if relevant on selected activities mentioned above.

10. **Economist** (International, 2 PM). The individual should have a master's degree in economics, transportation engineering, transport economics or equivalent relevant discipline. The candidate should have a minimum relevant experience of 10 years in undertaking economic and financial assessment of transport projects such as roads, metro and railways. Experience should cover projects funded by multilateral and bilateral institutions similar to ADB as well as in developing countries. Tasks of the Economist will be to:

- (i) review available data and economic analysis to ensure the quality of the consultant's study for assigned projects. Assess assumptions used for economic analysis; consider possible design alternatives; and update traffic data, traffic forecasting, and cost estimates, as required. Prepare economic evaluation of the proposed projects following ADB's Guidelines for the Economic Analysis of Projects covering the key areas of economic analysis indicated in ADB's Key Areas of Economic Analysis of Projects – An Overview;
- (ii) estimate the expected distribution of project net benefits among freight transport users, passenger transport users, vehicle owners, labor, the Government, and the economy in general, including international trade;
- (iii) conduct poverty impact assessment in accordance with ADB's Handbook for Integrating Poverty Impact Assessment in the Economic Analysis of Projects.
- (iv) conduct a quantitative risk analysis in accordance with ADB's Handbook for Integrating Risk Analysis in the Economic Analysis of Projects;
- (v) conduct financial and sustainability assessment by evaluating financial performance of project for revenue generating project, and self-financing capacity for project entity for non-revenue generating projects; and
- (vi) provide substantiation by giving clarification to comments raised.

11. **Procurement specialist** (International, 2 PM). The consultant shall have a bachelor degree in civil engineering or related field, with 20 years of relevant professional experience in the areas of transport infrastructure construction, especially road construction. Working experience in South Asia countries will be an advantage. Tasks of the procurement specialist will be:

- (i) assessing procurement capacity of executing agency and proposing capacity enhancement measures as necessary;
- (ii) assisting executing agency in preparing and finalizing documents for consulting services and Civil Works with high quality; and
- (iii) providing on-the-job training and advice of ADB procurement guidelines and procedures as well as FIDIC documents and FIDIC-based contract management.

12. **Financial management specialist** (International, 2 PM). The individual international expert will be a postgraduate in management (finance and accounting), with at least 15 years of project structuring, project financial appraisal, and PPP project background. An engineering background will be given higher preference. Experts having relevant experience in both developed and developing countries, including in the region, will be given higher preference. The expert should have led at least three substantial transactions on PPP aspects, and have demonstrated ability to interface with government, multilateral and bilateral agencies, banks and financial institutions, and developers. Tasks of the financial management specialist will be to:

- (i) review the financial management assessment related documents prepared by the TRTA consultant and collect additional information to elaborate the assessment;
- (ii) prepare the financial management assessment in compliance with applicable ADB guidelines (Financial Due Diligence: A Methodology Note and Guidelines on the Financial Management and Analysis of Projects) and prepare the report and completed checklists as required in the guideline;
- (iii) recommend actions to improve the financial management and governance for project implementation;
- (iv) analyze the financial statements and recommend actions to improve the financial performance; and
- (v) draft the terms of reference of the consultant who will support the institutional capacity development of relevant transport agency in terms of financial management and governance and estimate the cost and required inputs for the assignment.

13. **Environment specialist** (National, 10 PM). The individual will have at least 7 years of experience in preparing environmental assessments and implementing and monitoring environment management plans for infrastructure projects. The individual will have a master's degree or equivalent in environmental engineering, environmental science, environment management and related fields. The tasks of the specialist include:

- (i) conduct of environmental assessment and prepare initial environmental examination (IEE) reports or environmental impact assessment (EIA) reports for selected projects as relevant;
- (ii) review of IEE or EIA reports prepared by the government executing agencies, provide comments or make necessary revisions and field verification to ensure that the reports comply with the ADB SPS;
- (iii) thorough review of monitoring reports, project site visits and communication with relevant executing agency, monitor implementation of environment safeguards for selected category A and B projects under implementation;
- (iv) prepare, review and/or revise environmental monitoring and/or due diligence reports required for submission to ADB and disclosure on the ADB website; and
- (v) conduct of training or presentations on the ADB SPS and environment safeguards and environmental management plan for executing agency as needed.

14. **Resettlement specialist** (National, 10 PM). The individual should have relevant qualification and have significant experience in resettlement policy analysis, resettlement plan (RP) preparation, implementation, monitoring and reporting. Further, work experience and familiarity with all aspects of resettlement operations would be desirable. Candidates with degrees in social work, anthropology, sociology and development studies will be preferred. Tasks of the resettlement specialist will be to:

- (i) prepare RPs for selected projects as relevant;
- (ii) review the resettlement-related reports prepared by the executing agency and provide comments or make necessary revisions and field verification to ensure that the reports comply with the ADB SPS;
- (iii) monitor ongoing resettlement activities by the executing agency through random checking at the field level; consult with affected people and relevant community groups; review and field verification of monitoring reports prepared by the executing agency other consultants/firms;
- (iv) review and verify the progress in land acquisition and/or resettlement implementation and prepare monitoring reports for the executing agency and ADB;
- (v) evaluate and assess the adequacy of compensation given to the affected persons and the livelihood opportunities and incomes as well as the quality of life of the affected persons after the project induced change; and
- (vi) evaluate and assess the adequacy and effectiveness of the consultative process with the affected persons, particularly those vulnerable especially women, including the adequacy and effectiveness of the grievance redressal mechanism and procedures available to the affected persons and dissemination of information about these.

15. **Gender specialist** (National, 4 PM). The individual should have a postgraduate university degree in social sciences or related fields and demonstrate experience in conducting gender analysis, gender planning and mainstreaming in infrastructure projects. Experience in transport projects and in South Asia will be an advantage. Tasks of the gender specialist will be to:

- (i) conduct a detailed gender analysis guided by ADB's Gender and Transport Tool Kit;¹
- (ii) assess and identify potential gender-differentiated impacts of assigned projects. This includes but is not limited to women's mobility needs and patterns, personal safety and employment or income-generation opportunities.
- (iii) collect sex-disaggregated baseline data that could be used to monitor potential project gender benefits and impacts;
- (iv) assess and recommend key gender elements in mitigation measures (e.g., resettlement, HIV, and trafficking in women);
- (v) identify government agencies, NGOs and community-based organizations, and women's groups that can be utilized during project preparatory technical assistance and project implementation. Assess their capacity;
- (vi) conduct focus-group discussion with women and ensure adequate participation of women in public consultation meetings to ensure that their concerns are understood and taken into account into the project design;

¹ ADB. 2013. *Gender Toolkit: Transport*. Manila
<https://www.adb.org/sites/default/files/institutional-document/33901/files/gender-tool-kit-transport.pdf>

- (vii) based on the gender analysis, propose gender enhancement or mainstreaming measures appropriate to the project to be considered by the ADB team to be part of the gender action plan (GAP); and
- (viii) provide cost estimates for these implementation measures.

16. **Project management specialist** (National, 20 PM). The consultant shall have a bachelor's degree in business management or related fields. He/she must have atleast 7 years of experience in management of projects such as ADB projects and TAs and must be familiar with ADB's policies and procedures. Specific tasks of the project management specialist will be to:

- (i) assist in recruiting consultants (individuals and firms) under the TA;
- (ii) liaise with departments within ADB and appropriate counterpart government agencies and consultants for activities relating to regional transport projects and initiatives in South Asia countries;
- (iii) assist in the logistics and other arrangements for in-country consultation, and coordinating meetings with concerned implementing agencies, line ministries, senior officials meeting workshops and conferences;
- (iv) assist in the preparation and dissemination of project data and results as may be required for regional transport projects and other related activities;
- (v) consolidate regular reports on status of ongoing loan and/or TA projects and monitors/analyzes implementation of regional transport projects;
- (vi) provide assistance in report preparation within the division, in department and with other departments/offices concerned; and
- (vii) be responsible in keeping track of consulting services engagement under the TA.

Table 1: Indicative Consultant's Input Application
(Person-months)

Risk Category	Total	Projects for preparation ^a				Projects under implementation ^b		
		Project 1	Project 2	Project 3	Project 4	Project 1 No.46452- 002	Project 2 No.47284- 002	Project 3 No. 48337- 002
		Complex	Low risk	Complex	Complex	Complex	Low risk	Complex
FIRM	21							
1. Advisory services for rolling stock operation and maintenance firm	7		7					
1.1 International railway rolling stock O&M expert	2		2					
1.2 International rolling stock/depot engineer	2		2					
1.3 National rolling stock engineer	3		3					
2. Biodiversity management firm	10					9		1
2.1 International wildlife expert	2					1		1
2.2 International ecological expert	3					3		
2.3 International sensor technology expert	2					2		
2.4 National railway signaling expert	3					3		
3. Project communication firm	4			4				
3.1 International project communications expert	2			2				
3.2 International communications expert	2			2				

^a **Projects for preparation:** Project 1: BAN: Dhaka Metro Line 5 North Investment Program; Project 2: BAN: Railway Rolling Stock Project; Project 3: IND: Indore Metro Rail Project; Project 4: SRI: Railway Investment Program

^b **Projects under implementation:** Project 1: BAN 46452-002: SASEC Chittagong – Cox's Bazaar Railway Project; Project 2: BHU 47284-002: SASEC Transport Trade Facilitation and Logistics Project; Project 3: NEP 48337-002: SASEC Roads Improvement Project

Risk Category	Total	Projects for preparation ^a				Projects under implementation ^b		
		Project 1	Project 2	Project 3	Project 4	Project 1 No.46452- 002	Project 2 No.47284- 002	Project 3 No. 48337- 002
		Complex	Low risk	Complex	Complex	Complex	Low risk	Complex
INDIVIDUAL								
International	14							
1. Wildlife expert	2							2
2. Environment specialist	2							2
3. Disaster risk management and climate resilience specialist	2	1			1			
4. Climate mitigation specialist	2	2						
5. Economist	2	1		1				
6. Procurement specialist	2	1	1					
7. Finance management specialist	2			1	1			
National	44							
8. Environment specialist	10	2		4	4			
9. Resettlement specialist	10	4		2	4			
10. Gender specialist	4	2		2				
11. Project management specialist	20	4		4	4	4		4

Source: Asian Development Bank.

BAN = Bangladesh; BHU = Bhutan; IND = India; NEP = Nepal; SASEC = South Asia Subregional Economic Cooperation; SRI = Sri Lanka