About the Socially Inclusive and Gender-Responsive Transport Projects

The transport sector provides an example of a nontraditional channel to promote social, economic, and gender equity. This case study provides practitioners with effective analytical tools and methods that were used in the design of ADB’s Timor-Leste Road Sector Improvement Project to specifically benefit traditionally excluded and disadvantaged groups, such as women and the poor. As ADB’s first attempt to mainstream social and gender concerns in infrastructure-related projects in Timor-Leste, the success of the initial design phase of this project provides valuable lessons for other road and transport projects in Asia and the Pacific.

About the Asian Development Bank

ADB aims to improve the welfare of the people in the Asia and Pacific region, particularly the nearly 1.9 billion who live on less than $2 a day. Despite many success stories, the region remains home to two thirds of the world’s poor. ADB is a multilateral development finance institution owned by 67 members, 48 from the region and 19 from other parts of the globe. ADB’s vision is a region free of poverty. Its mission is to help its developing member countries reduce poverty and improve their quality of life.

ADB’s main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance. ADB’s annual lending volume is typically about $6 billion, with technical assistance usually totaling about $180 million a year.

ADB’s headquarters is in Manila. It has 26 offices around the world and more than 2,000 employees from over 50 countries.
Socially Inclusive and Gender-Responsive Transport Projects

A CASE STUDY OF THE TIMOR-LESTE ROAD SECTOR IMPROVEMENT PROJECT

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Miho Ihara
Francesco Tornieri

Asian Development Bank
Acknowledgment

This knowledge product on the Timor-Leste Road Sector Improvement Project financed by the Asian Development Bank (ADB) was written by Francesco Tornieri, Social Development Specialist (Gender and Development) of ADB; Miho Ihara and Gregory Gajewski, Economists of the Louis Berger Group, Inc. (LBG). The authors are grateful for the contributions of many people and institutions. The feasibility study team of the LBG, Inc., in cooperation with Kai Watu Kmanek-Consultants (KWK) in Timor-Leste, completed the study in record time and with high professional standards. Dag Vegger led the team, with substantive direction from Gregory Gajewski, Economist, the LBG, Inc. This knowledge product also benefited from the support of ADB staff. Many ADB staff contributed useful comments during the review stage of the study and this paper. Marcelo Minc, Principal Transportation Specialist of the Pacific Department, and Team Leader of the Timor-Leste Road Sector Improvement Project, established an enabling environment for teamwork and encouraged the study team to identify, apply, and document innovative approaches to boost the social and gender impacts of the road infrastructure investments. Mary Rose Favis-Aquino and Ferdinand Reclamado, gender team assistants of the Gender, Social Development, and Civil Society Division, Regional and Sustainable Development Department, provided editorial and production assistance to the paper. Special thanks are extended to the Ministry of Transport, Communications, and Public Works of the Democratic Republic of Timor-Leste and many other government staff for their willingness to help ADB and the study team on a daily basis on all technical, financial, and institutional issues. Finally, sincere thanks are due to those who responded to the surveys and interviews. Without their cooperation, the study would have not been possible and its success, not documented in this paper.
The Asian Development Bank’s overarching goal is poverty reduction throughout Asia and the Pacific. Improving the transport sector in the developing member countries is critical to combating poverty. Lack of mobility not only impedes efforts to achieve poverty-related Millennium Development Goals but also restricts people from being assured of their basic human rights. Movement is essential if people are to have the power to be autonomous and take control of their lives. In this wider sense, improving mobility includes developing transport infrastructure and services to overcome the social, economic, political, and physical constraints to movement and thus development faced by the poor, women, and other disadvantaged groups.

Because the Asian Development Bank aims to increase knowledge sharing throughout its developing member countries, knowledge products are being developed for different technical and thematic areas. This case study highlights the innovative design features of the Timor-Leste Road Sector Improvement Project, approved in 2005. The project was designed specifically to engender sustainability, and include stakeholders and beneficiaries that have been ignored in typical road improvement projects. The new aspects of the project support the Government of the Democratic Republic of Timor-Leste’s commitment to sustainable development of community infrastructure.

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<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>COI</td>
<td>corridor of influence</td>
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<td>DPA</td>
<td>distribution and poverty analysis</td>
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<td>ENPV</td>
<td>economic net present value</td>
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<td>GOTL</td>
<td>Government of Timor-Leste</td>
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<td>HIV/AIDS</td>
<td>human immunodeficiency virus/acquired immunodeficiency syndrome</td>
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<td>INGO</td>
<td>international nongovernment organization</td>
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<tr>
<td>MPW</td>
<td>Ministry of Public Works (Timor-Leste)</td>
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<td>NGO</td>
<td>nongovernment organization</td>
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<tr>
<td>PIR</td>
<td>poverty impact ratio</td>
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<td>PMU</td>
<td>project management unit</td>
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<td>PWD</td>
<td>Public Works Department (Timor-Leste)</td>
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<td>STI</td>
<td>sexually transmitted infection</td>
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Glossary

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<th>Term</th>
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<td>suco</td>
<td>village</td>
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<tr>
<td>aldeia</td>
<td>hamlet</td>
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Notes

Timor-Leste uses the US dollar (US$) as its official currency.

All data in boxes, figures, and tables were generated for the present study by the authors.

Other sources are cited directly in the text.
Executive Summary

In the challenging environment of postconflict rehabilitation and reconstruction, the Asian Development Bank’s (ADB) experience in Timor-Leste provides practitioners with effective analytical tools and methods to: (i) assess the political, economic, social, and gender aspects of road transport investments and planning projects; (ii) identify relevant stakeholders and beneficiaries; and (iii) select realistic and well-targeted interventions that promote gender-balanced poverty reduction.

The road sector is the dominant mode of transport in Timor-Leste due to the lack of domestic civil aviation, limited nature of sea transport, and impossibility of river transport. The country has a substantial road network of 6,000 kilometers (km), including 3,000 km of rural roads that cross remote and mountainous terrain. About half of the road network is paved. However, the condition of the network—and of the rural road network, in particular—is generally poor, severely limiting people’s access to basic social services (e.g., education and health care) and local markets in rural areas, where three quarters of the total population live. Insufficient funding and a lack of coherent planning hamper maintenance of the road network. This calls for greater involvement of local communities through labor-intensive and community-based construction and maintenance of rural feeder roads.

The Government of Timor-Leste (GOTL) recognizes that infrastructure is of overarching importance to all sectors of the economy and society, and that improving infrastructure, especially the transport system, is critical to fostering private sector growth, improving agricultural productivity, reducing poverty, promoting investment and human development, and strengthening the capacity to deliver social services. Implementing sustainable strategies for the maintenance of rural access roads is critical to providing the rural poor with access to basic services.

In this context, an ADB-financed feasibility study team assessed the road sector and developed initiatives for the GOTL to improve and maintain the nation’s road network over the next decade, of which the first-
year investment program has been primarily funded by an ADB grant. The project was designed to specifically include socially and culturally acceptable interventions so that traditionally excluded and disadvantaged groups such as women and the poor would be key agents and beneficiaries. The proposed first-year project, with construction to start in 2007, consists of four main components: (i) rehabilitation of three roads that consist of the following road links: Viqueque–Uatucarbau, Aituto–Betulala, Betulala–Same, Oeleu–Lourba, and Lourba–Zumalai; (ii) labor-intensive maintenance of Illiomar–Loapalos Road; (iii) community empowerment initiative; and (iv) institutional strengthening of the Public Works Department of Timor-Leste. The project includes the following socially inclusive and gender-responsive design features:

- vehicle fleet transformation program,
- labor-intensive maintenance,
- involvement of women,
- connection of rural areas with community-based initiatives,
- community empowerment initiative,
- budget allocation, and
- specific assurances.

This case study gives a thorough account of how ADB and the feasibility study team developed socially inclusive and gender-responsive project design features that are specific to the context of Timor-Leste. The methods and tools used include various stakeholder consultations and field data collection efforts that provided the groundwork for the social analysis and the distribution and poverty analysis (DPA). Based on the team’s experience and international good practices, the following were identified as the most critical and practical interventions in developing socially inclusive and gender-responsive transport projects:

- commitment to social inclusion and gender mainstreaming;
- comprehensive poverty, social, and gender analyses;
- need for women’s involvement in road infrastructure governance;
- engaging men on gender issues and concerns;
- encouraging community buy-in and maximizing stakeholder consultations;
- providing innovative options;
• partnering with local and international nongovernment organizations; and
• developing a project-specific gender action plan.

The analytical tools and methods used in this case study can be applied to transport sector projects in other developing member countries. Since countries vary in many aspects, including size, sociocultural norms, government structures, history, education levels, gender roles, poverty levels, infrastructure capacity, and institutional structure, such methods must be tailored to the country or region in which they are applied. These factors affect the design of transport projects, and therefore, they should be considered at the start of project identification and throughout the design process to select the best methods and tools for a specific country. The case study follows this outline:

• **Chapter I, Introduction: Lessons from Past Projects for the Timor-Leste Transport Project** summarizes good practices by ADB and other development parties in incorporating social and gender concerns in infrastructure-related projects, including transport. The Road Sector Improvement Project adopted some of these practices.

• **Chapter II, Stakeholder Consultations and Data Collection for the Project** outlines the methods used by the feasibility study team to (i) conduct various stakeholder consultations to collect primary data, including field consultations for the social analysis and DPA; (ii) identify locations for fieldwork based on secondary data; (iii) and develop and test appropriate questionnaires.

• **Chapter III, Poverty and Social/Gender Analyses for the Project** presents, based on the stakeholder consultations and collected primary and secondary data, the project’s (i) poverty incidence and number of expected project beneficiaries; (ii) social/gender analysis to identify the expected impacts on vulnerable groups, such as women; and (iii) DPA to determine the expected distribution of project benefits among key stakeholder groups, structural constraints, and recommended complementary actions to increase the benefits to the poor.
• **Chapter IV, Socially Inclusive and Gender-Responsive Design Features of the Project** provides details on the social and gender features that were included in the project’s final design based on the stakeholder consultations and data collected and the results of the social/gender analysis and DPA.

• **Chapter V, Successful Approaches in Designing Socially Inclusive and Gender-Responsive Transport Projects** summarizes the approaches used for the Road Sector Improvement Project in identifying and incorporating its socially inclusive and gender-responsive design features.

• **Chapter VI, Conclusion: Lessons from the Timor-Leste Transport Project for Future Transport Projects** summarizes the Road Sector Improvement Project’s socially inclusive and gender-responsive design features, and the approaches used to identify and incorporate them in project design, which could serve as guideposts for future transport projects in Timor-Leste and other countries.
A. Potential of the Transport Sector to Promote Social and Gender Equity

The transport sector provides an example of a nontraditional channel to promote social, economic, and gender equity. Access to transportation on safe roads has a direct impact on the economic standing and quality of life in affected communities. Communities are affected through increased opportunities for buying and selling, availability of emergency health care, and stronger familial links. All these benefits are extended to both men and women, but tend to affect women differently.

More opportunities for buying and selling lead to greater independence for women in female-headed households and lessen the risks associated with vulnerable women’s and children’s being trafficked into bonded labor or sex work. Economic empowerment also often means life or death for the most vulnerable groups in society, which typically comprise women and children.

The availability of access to health care, especially in emergencies, can greatly reduce maternal mortality in developing countries. Limited access to transportation and exorbitant transportation costs are key barriers to those in need of medical assistance. Too often, those in greatest need wait
too long to attempt traveling to a hospital or clinic. Safe roads that are well-maintained increase traffic, and can cut transport costs for the very poor, eliminating a key barrier to accessing medical treatment.

Access to transportation allowing women to travel to visit extended family members is often critical. Women typically leave their families to join their husbands. Not only does better access to transportation reduce the risk of isolation, but it also increases women’s visibility and serves as a deterrent to domestic violence because their spouses have to accept more accountability for their well-being.3

In summary, transport sector projects extend into most facets of community life. The role of the transport sector is not only to improve transportation and the related infrastructure, but also to ensure that the projects provide benefits related to trade, public health, education, and social, economic, and gender equity. Through knowledge sharing and the innovative incorporation of good practices, road projects throughout the region have the opportunity to succeed on many levels outside of the narrowly defined transport sector.

B. Good Practices in Addressing Social and Gender Concerns in Transport Projects

In a report prepared for the Gender Equality Unit of the Swedish International Development Agency, Masika and Baden4 argue that infrastructure planning and policy have largely focused on the technical aspects and goals relative to operational efficiency rather than economic, social, and gender goals or impacts.

In spite of the challenges, ADB (Box 1) and other development partners, including international nongovernment organizations (INGOs), have taken steps to identify and address gender and other social-related biases in project design. The feasibility study team considered the following international good practices and lessons learned from these projects in designing the Timor-Leste Road Sector Improvement Project (Section C).

3 Domestic violence and isolation go hand-in-hand. For nations with weak or limited social services, women’s only advocate or protector may often be their immediate family members. Though sociocultural norms that condone domestic violence may exist, reducing women’s isolation is a first step in reducing domestic violence.

Box 1: Social Inclusion and Gender in ADB Transport Projects

In the review of Asian Development Bank’s (ADB’s) Policy on Gender and Development, a number of good gender practices emerged in the design of loans approved from 1998 to 2004. These included various techniques to incorporate social and gender perspectives in the design and implementation arrangements of physical infrastructure projects, particularly transport projects. By 2004, 67% of transport projects included mitigation measures to address HIV/AIDS and/or trafficking risks. Some included positive measures to provide women with employment or other benefits (e.g., Rural Infrastructure Improvement Project in Cambodia, Section B.4). In fact, recent transport projects have set targets for local women’s participation in road construction or rehabilitation works, based on an assessment of women’s interest in doing such works.

In terms of mitigating social risks, large infrastructure projects now routinely include covenants requiring awareness programs on the risks of HIV/AIDS and other sexually transmitted infections to be carried out in construction camps and the surrounding communities, and by transport operators. In the best cases, some recent transport projects have included specific components to support health awareness campaigns, provision of condoms, access to health services, and other activities. Many address risks of human trafficking, drawing on research and recommendations from an ADB-supported regional study on Trafficking of Women and Girls. Other loan covenants provide for equal pay for equal work and facilities for workers and safe working conditions, and prohibiting use of child labor.

To date, most of ADB’s physical infrastructure loans that address social risks in a meaningful way have been in the Greater Mekong Subregion and South Asia. These risks need to be addressed more consistently and effectively in East and Central Asia, Southeast Asia, and the Pacific.
1. Gender Responsiveness

The transport sector has often been viewed as a “gender-neutral” realm. Such gender-neutral or “gender-blind” biases are often embedded in project design, and benefits are assumed to be distributed with no differential impact on women. However, this approach must be reassessed (Box 2). Women should be treated as “key beneficiaries” who are a strong force behind a project’s success and sustainability, rather than considering gender as an “afterthought” component in project design. Gender concerns should be viewed as pertinent to initial goals and objectives, and incorporated in the initial stages of project design if the ensuing interventions are to be credible and effective.

Gender concerns that can be addressed through project design vary greatly within the Asia and Pacific region due to the diverse sociocultural and religious norms. Indeed, influencing progress in gender equality involves changes in the culture and tradition of developing countries, which take time. Hence, any good practices identified should not be treated as broad prescriptions for all infrastructure or transport projects, but only as guideposts that must be reexamined and modified, as appropriate, to the national context.
Box 2: Removing Gender Biases in Development Projects

In addition to “gender-neutral” bias, subtle gender biases can also exist in the planning and management of infrastructure that, for example, may prioritize vehicle owners, who are typically men. This bias toward mobility rather than accessibility nonetheless creates a barrier for women and limits the benefits they may receive from a transport project. Women may also find themselves at a disadvantage due to their many reproductive tasks that require them to use public transportation at off-peak hours when it is often more unreliable or unsafe.

Gender bias can also be more overt in projects, which encourage female participation at low-level capacities that pay lip service to women’s participation but do nothing to advance gender equity. Though some countries tend to have more equitable gender representation in construction and related industries, limited sex-disaggregated data are available to show this phenomenon. Although some projects may positively affect female representation, gender biases preventing women from advancing to senior positions or earning more equitable salaries can prevent many of these projects from successfully addressing longer-term gender concerns.

Gender biases can also present structural barriers in the areas of access to property rights, rural finance, and microfinance. Authors Masika and Baden propose that special consideration be given to removing such structural barriers by registering property in women’s names, or increasing access to microcredit so that women are more motivated to push for equal access to community-based infrastructure projects. They also recommend improving the identification of areas of gender bias by reviewing explicit and implicit criteria applied to prioritizing and evaluating infrastructure development interventions.

The success of mainstreaming gender within transport sector projects is highly dependent upon a focused, well-planned gender strategy. Such strategies are often developed as part of project-specific gender action plans. Some ADB projects, including the Third Rural Infrastructure Development Project in Bangladesh (Box 3) and National Highway Corridor (Sector) Project in India (Box 4) are good examples of how the gender action plans and other socially inclusive and gender-responsive design features were key to enhancing gender equity and the social status of women—long-term goals that will outlast the life of any project.
Limited incidents of extortion and physical and sexual assault have been reported in CARE’s Rural Road Maintenance Program in Bangladesh (Box 6). In ADB’s Third Rural Infrastructure Development Project, the need for privacy was paramount.

Box 3: ADB’s Third Rural Infrastructure Development Project in Bangladesh

In comparison with Timor-Leste, gender roles and sociocultural norms in Bangladesh differ dramatically. Project design features that emphasize women’s participation and integration in the labor force face a multitude of obstacles and social constraints due to the segregation of the sexes and the seclusion of women (pardah), which are much more entrenched in rural areas where many projects are located. In Asian Development Bank’s Third Rural Infrastructure Development Project in Bangladesh, the emphasis was on overarching gender equity goals and transcending sociocultural barriers that limit women’s social and economic participation. Rather than recruiting women into the labor force or openly confronting social conventions, measures such as the provision of simple infrastructure—bathroom facilities, lower steps in public transport vehicles, or separate market stalls—increase women’s visibility and inclusion in communal domains, such as buses, markets, or local government buildings. These small modifications to existing infrastructure balance women’s need for privacy with their need for social inclusion. They also begin the process of more fully integrating women into social and economic domains that are traditionally segregated by sex and often dominated by men. This project notably “does not promote seclusion of women.” Instead, it “tries to promote women’s participation in the public sphere by creating women’s own space to give them confidence as pioneer women marketers.”\(^a\) It exemplifies a number of good practices that should be employed across other infrastructure or transport sector projects, where applicable.


2. Women’s Involvement

Transport projects designed to include women require serious consideration of issues that will determine the extent of women’s participation. Physical security and privacy are priority issues for women worldwide. Though some projects have been largely successful, they have encountered problems that threaten to derail women’s participation and involvement.\(^5\)

\(^5\) Limited incidents of extortion and physical and sexual assault have been reported in CARE’s Rural Road Maintenance Program in Bangladesh (Box 6). In ADB’s Third Rural Infrastructure Development Project, the need for privacy was paramount.
The Third Rural Infrastructure Development Project in Bangladesh is an example of good practice of promoting access to institutional capacity building, which is linked to strengthening the transport sector. While an employment quota of 30% female Union Council members existed, measures were taken to ensure that their participation was real and not merely on paper. To facilitate women’s fulfillment of their role in this capacity, separate facilities were provided to increase the comfort level of women as they discussed their roles. Separate facilities for discussion increased women’s participation in decision making and created a forum for debate on issues of importance to their communities regarding rural road network development and income-generating opportunities. A similar approach was taken for the field consultations for the Timor-Leste Road Sector Improvement Project (Chapter II, Section D.)

Box 4: ADB’s National Highway Corridor (Sector) Project in India

Asian Development Bank’s National Highway Corridor (Sector) Project in India provides a good example of a transport sector project that integrates public health issues and promotes behavioral change to prevent HIV/AIDS and sexually transmitted infections. This transport project, approved in 2003, aimed to rehabilitate and widen sections of the east-west highway corridor through Rajasthan, Madhya Pradesh, and Uttar Pradesh. Studies carried out during project preparation found that communities along the corridor were highly vulnerable to both HIV/AIDS and human trafficking risks because of the (i) poverty and low status of women and children in the area, (ii) presence of tribal communities with a history of sending women and children into prostitution, and (iii) expected increase in demand for commercial sex workers along the corridor from both highway construction workers and truckers. To address these risks, the loan project included a component on HIV/AIDS and human trafficking. The HIV/AIDS activities supported by the loan include (i) awareness raising for contractors and construction workers; (ii) a program on public awareness and behavior change aimed at both the general public and high-risk groups; (iii) strengthening of referral systems for HIV testing and sexually transmitted disease treatment; (iv) condom promotion; and (v) capacity building of local nongovernment organizations, pharmacists and health workers, motivators in service areas, and others.
In addition to providing simple infrastructure, such as bathroom and bathing facilities to meet privacy concerns, gender-specific concerns need to be addressed directly with men in the project communities, including those participating in the projects (Box 5).

**Box 5: Gender-Sensitivity to Men**

Focus group discussions and sensitization seminars create dialogue among men on their opinions and views of women’s participation. Open dialogue among men within their communities also allows for a better understanding of potential barriers to women’s participation from a design perspective. The type of jobs women perform and their pay scale are some primary issues that may lead to resentment on the part of men, who may feel they deserve certain positions or more money than women for the same job do (as they are often heads of households). A thorough investigation of these views allows a project team to design and implement a project that includes measures or strategies to prevent or resolve such problems, to allow women greater access and equal benefits. Men’s opinions on projects that include mechanisms for women’s participation, a role for them in decision making, and accrual to them of economic benefits are critical to its success. In particular countries where women have very limited autonomy and where sex segregation—both socially and occupationally—is the norm, men must be engaged to overcome such social conventions that prevent women’s participation.
3. Community Engagement

The design of studies and project elements that create open dialogue between the feasibility study team and local communities reinforces these net benefits to communities. Through community engagement, the level of ownership is likely to be much higher and the end results and benefits more sustainable. As in the Timor-Leste Road Sector Improvement Project (Chapter IV, B.3), it is critical to recognize the importance of community buy-in, and fully anticipate the importance of community support in the participation and maintenance of transport projects.

4. Employment Generation

A successful project in the transport sector is ADB’s Rural Infrastructure Improvement Project in Cambodia. It was the first significant investment in infrastructure in 20 years and created employment for 3.17 million workers, of which about 25% or 792,500 were women. This project has also greatly improved access for communities and livelihoods. Another project which has created many income-generating opportunities, including employment, is CARE’s Rural Road Maintenance Program in Bangladesh (Box 6).

5. Monitoring and Evaluation

Several issues in the area of monitoring and evaluation are critical to gender concerns and social inclusion. One of the key lessons from CARE’s Rural Road Maintenance Program is the need for long-term monitoring of key beneficiaries which continued for 7 years. By tracking women who graduated from the program over this length of time, CARE noted dramatic changes in women’s expenditures between the fifth and seventh years. These indicated key growth in economic standing and security as women began to move farther away from their previously destitute status, and became more economically powerful. Data such as this provide many lessons for future project design and levels of investment in the transport sector. Indeed, long-term goals relative to gender equity and social inclusion require long-term monitoring and evaluation to assess the success or failure of such projects properly, based on the appropriate indicators.

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In the past 20 years, the CARE program has empowered the most destitute women, many of whom are divorced, separated, outcast or widowed. It has provided for both economic and social needs through job opportunities in rural road maintenance. About 42,000 women are employed annually in this 4-year program, which also offers training to selected women on human rights, gender equity, hygiene, health awareness, business management, numeracy, and different income-generating activities. CARE has successfully linked job creation for women and participation in road maintenance activities with long-term goals of gender equity and social inclusion.

One of the key successes of this program, moreover, comes from the economic empowerment that women have experienced, which is directly linked to their social status. By participating in road maintenance activities, women earn a daily wage, of which about 20% is saved to reinforce new income-generating activities at the end of their program cycle. CARE data reveal that only 0.1% of women reported that they did not start any other income-generating activities in their final year of the program. Following their graduation from this 4-year program, income-generating activities remain strong, with approximately 60% of women engaged in this work. Over the long term, women who have graduated from the program have also continued to increase their economic standing, as indicated by their increased expenditure on nonfood items, such as housing, education, and health care. Not only does this opportunity greatly affect vulnerable women, but also directly affects the next generation, which will benefit from their mother’s work through more social acceptance and better access to health care and education, thus contributing to the long-term goal of poverty reduction in Bangladesh.

Rural communities rely heavily on their road network, which is typically in poor condition. As the Bangladesh project created jobs for women that communities can benefit from and see value in, these women in turn are viewed as more valuable to their communities, while also generating an income for themselves and their dependents. Members of communities that participate in this road maintenance component have experienced the benefits of these women’s labor and about 90% of community people indicated that Roads Maintenance Association roads are more passable than before the project was undertaken. In turn, women involved in the roads maintenance component noted that they experienced greater social acceptance through invitations to social functions, events, and ceremonies because people now expect that they can afford to provide gifts for the hosts. Though sociocultural norms still overwhelmingly prevent women in general from participating in all social activities, these highly vulnerable women are now being accepted as part of their communities. This acceptance, in turn, serves to provide them with a social safety net—critical for women who do not have husbands, fathers, or brothers to protect and support them.
On the other hand, interventions that target women and vulnerable groups require process monitoring within the life of the project. This will ensure that timely modifications are made when projects encounter resistance, stagnancy, or even failure to meet certain projections or expectations. This also serves to advance the interests of the most vulnerable and least vocal members of communities.

Many countries do not currently disaggregate their national indicators by sex, so that determining the economic standing and social and health indicators for women (both on their own and in comparison with men) are very difficult, if not impossible. This lack of statistical visibility for women is a problem on two levels since it hampers the ability of projects to assess gender equity and concerns in the project design phase initially, and compels projects to invest in long-term monitoring and evaluation to assess these goals. For short-term transport projects that cannot invest in long-term tracking, it is critical that frameworks be appropriately designed to determine as nearly as possible the actual project benefits that accrue to women. This means that critical sex-disaggregated data must be gathered and baseline indicators established that allow gender-equity goals to be tracked, at least in the short term and preferably over the long term. This also sets a precedent for local institutions to reevaluate their monitoring and evaluation methods, giving women and gender issues visibility in a project and allowing for better analysis of project benefits and beneficiaries.

6. Budget Allocation

Including mitigation and livelihood activities in the design of physical infrastructure projects also raised the awareness of the executing agencies to the magnitude of the social risks involved in projects and the importance of addressing them in locally appropriate and realistic ways. However, their capacity and motivation to implement gender and social components are generally very weak. In addition, social risk mitigation components are often supported by parallel grants or are linked to existing government programs, and the obligations to mitigate risk extending the responsibility to mitigate risks to third parties, such as civil works contractors and transport operators. Therefore, providing adequate budget for social and gender-related activities is important to provide technical support to the executing agency and its project implementation team to ensure effective monitoring of the social and gender elements of the project during implementation.
C. Designing the Timor-Leste Road Sector Improvement Project

Actual project design and implementation clearly require dedicated objectives and proper monitoring to overcome obstacles and produce equitable outcomes and benefits in transport projects. This case study on the Timor-Leste Road Sector Improvement Project highlights how the feasibility study team adopted international good practices (Section B), in addition to other types of stakeholder consultations and data collection methods (Chapter II), to lay the groundwork for the project’s social/gender analysis and distribution and poverty analysis (Chapter III). The results of the distribution and poverty analysis helped identify and incorporate the appropriate socially inclusive and gender-responsive features in the project (Chapter IV).
Reliable data collection, through extensive stakeholder consultations, is a key ingredient of the social analysis and the distribution and poverty analysis (DPA) of the Timor-Leste Road Sector Improvement Project. Insights obtained through the consultations and related analyses have been incorporated in the form of participation strategies and interventions. They address poverty and social/gender issues to increase the share of anticipated project benefits that will accrue to the poor, women, and other socially vulnerable groups.

The feasibility study team identified a broad range of stakeholder groups, and consulted more than 650 individuals during the project design (Figure 1).

A. Kickoff Stakeholder Consultation Workshop

The first consultation workshop, The Future of Timor-Leste’s Road Sector, was held at the ADB-World Bank Conference Room with more than 50 participants from departments of the Government of Timor-Leste, international development agencies, such as the Japan International Cooperation Agency, and local and international NGOs. The workshop was well received. It helped the participants understand the project and the methods the team proposed to design the project, especially on how the
Stakeholders would participate in project design. Topics in the workshop included: (i) project goals and general approach, (ii) prioritizing road investments, (iii) Commercial Management and Financing Roads, (iv) Social and Poverty Analyses, and (v) environmental analysis.

The kickoff stakeholder consultation workshop was critical because various stakeholder groups’ support was needed from the beginning of project design. The workshop also served as an important source of information and insights—along with key informant interviews, focus group discussions, and surveys—used later for the social analysis and DPA, and final project design.
B. Field Consultations

The study team worked with the local populations in Ainaro, Baucau, Bobonaro, Cova Lima, Ermera, Manatuto, Manufahi, and Viqueque Districts between 18 March and 8 June 2005 to assess their needs, demands, and willingness to support the proposed project, and their socioeconomic status and absorptive capacity (Box 7; and Chapter III, Section B.). The consultations included:

- 10 key informant interviews of district and village (suco) leaders, and other prominent people in the villages;
- 11 focus group discussions, five of which were for women only; overall, the focus groups had seven participants on the average; and
- small-sample surveys of local households, the local population, passengers, vehicle operators, freight shippers, and shops (around 500 sample responses of which about 30% were female respondents).

Due to time and resource constraints on the design stage, conducting extensive fieldwork in every district of Timor-Leste was not undertaken. Therefore, the team focused its fieldwork in areas around the roads that were most likely to be improved under the first year of the program. Specific methods for selecting the above-mentioned eight districts for extensive fieldwork are in Section E.1.

Box 7: Creating Dialogue, Strengthening Communities

In all the villages where the study was conducted, many people expressed their desire to participate in the program.

In this case, the design of studies and project elements that create open dialogue between the project team and local communities reinforces the project’s benefits to communities. Because of community strengthening, the level of engagement is likely to be much higher and the results and benefits, more sustainable.

By recognizing the importance of community support in developing and maintaining such projects, this project was successful in engaging the poor men and women, despite budget and time constraints.
1. Key Informant Interviews

Key informant interviews are semi-structured interviews where a study team member discusses issues relevant to the proposed project.

Prior to visiting villages and markets for interviews and surveys, the team conducted key information interviews with district and deputy administrators and/or development officers to collect basic socioeconomic information on the district. By engaging the potential beneficiaries, the team discovered whether informants supported or opposed the project and their concerns about it. In addition, the team observed directly the extent of poverty in the area, which helped justify the estimates of the number of poor and very poor beneficiaries. The interviews also showed the relative importance of beneficiaries’ other concerns and how improving the roads are as important as improving other needed public works and services. Lastly, they provided useful insights into basic infrastructure programs being carried out at the community level.

As leadership in Timor-Leste is overwhelmingly male, the study team was unable to meet with any female leaders for key informant interviews. Nevertheless, the key informant interviews obtained a representative picture of the area likely to be affected by the first year of the project as well as the 10-year indicative road development plan.

2. Focus Group Discussions

Focus group discussions involve interviewing on an informal and low-key basis a group of village residents to gather their views about and expectations of the positive and negative effects of a proposed project in their daily

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7 The study team often held one-on-one interviews with the district or village leader, suco chief, village elder, school teacher, or other key person responsible for or knowledgeable about the local community. The information gathered included population; number of households and average household size; ethnic distribution; availability of public transport, schools, electricity, and running water, average distance to health facilities and schools; access to economic centers; major economic activities and income sources; average income; and the educational status of the population.

8 In the study, the “very poor” were defined as “those who suffered food insecurity for 1 month or more during the past 12 months.” Detailed definitions are in Section A of Chapter III and in Appendix 3.
lives and those of their families and the other villagers. This type of consultation allows the group to interact, allowing more insights than the one-on-one key informant interviews or the responses to the structured short surveys.

Following the key informant interviews, the study team conducted separate focus group discussions with women and men in selected villages to assess the villagers’ perceptions on poverty, basic poverty profiles, and the potential impact of road improvements on the economic and social development of the villages.

By separating the men from the women in the focus groups, the team also obtained information on gender-specific issues and concerns (Table 1). To encourage the different gender groups to express their views openly, a female and male study team member facilitated and recorded their respective gender group discussions. Although most of the women were very eager to express their views, and lively discussions took place during the women’s focus group discussions, completely isolating women from men turned out to be rather difficult.

In total, the study team conducted 11 focus group discussions, six for men and five for women. Each discussion consisted of 3–10 persons and lasted from 1–1.5 hours. Despite the constraints to the focus group discussions (Box 8), the team received overwhelmingly positive and willing responses from the villagers, regardless of gender. Roads were considered among the main issues of concern for the villagers, and road improvement was perceived as very important to improve the quality of their daily living. Virtually all respondents expressed their strong desire to participate in the construction as wage laborers, and their willingness to carry out community-level maintenance activities for compensation.

3. Small-Sample Surveys

The study team carried out small-sample surveys on the local population, vehicle operators, passengers, freight shipper/s, and shops, including detailed household interviews. Except for the freight shipper
Box 8: Constraints to the Focus Group Discussions

A preferred venue for a focus group discussion is a sufficiently sized, closed room for each group. In the case of the project, with the hot weather and lack of electricity, people preferred to gather outdoors. This made it very difficult to keep onlookers away despite the study team’s efforts.

Given the time allocated for the study, it was not possible to give villagers sufficient notice before the discussions took place. Traveling to remote villages in Timor-Leste is very time-consuming and can be very difficult due to extremely poor road conditions. In an environment without conventional communication methods, such as telephones, it was impossible to inform the selected villages about the team’s planned visit before their arrival. This meant that the focus groups were gathered on very short notice, often just a day after the team’s meeting with the village leaders. It also meant that the discussions were held in whatever gathering area was available.

Table 1: Villagers’ Focus Group Discussions by Sex

<table>
<thead>
<tr>
<th>Rank</th>
<th>Village Chief</th>
<th>Men’s Focus Group (9 participants)</th>
<th>Women’s Focus Group (10 participants)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lack of water supply</td>
<td>Lack of water supply</td>
<td>Lack of water supply</td>
</tr>
<tr>
<td>2</td>
<td>Unemployment among young villagers and the lack of income-generating opportunities</td>
<td>Shortage of classrooms in the primary school</td>
<td>Lack of healthcare facilities in the village</td>
</tr>
<tr>
<td>3</td>
<td>Lack of healthcare facilities in the village</td>
<td>Lack of healthcare facilities in the village</td>
<td>–</td>
</tr>
<tr>
<td>4</td>
<td>Poor condition of roads, including feeder roads leading to some of the aldeias</td>
<td>Poor condition of roads, including those feeder roads leading to some of the aldeias</td>
<td>–</td>
</tr>
<tr>
<td>5</td>
<td>Shortage of classrooms in the primary school</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>6</td>
<td>Lack of power/electricity</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

aldeia = hamlet, – = not applicable.
surveys, they were conducted at various sites, including marketplaces, along the candidate roads to be improved.

The passenger and local population surveys showed how the poor and very poor use the roads, which is a critical parameter to DPA. The vehicle operator survey provided information on the structure and performance of the transportation services markets. This information was critical to estimating the benefits accruing to different stakeholder groups from the proposed project in the DPA. Both the detailed household survey and the local population survey collected basic socioeconomic information on local households. However, compared to the local population survey, the detailed household survey was designed mainly for the social analysis to obtain more detailed information on household income sources, expenditure items, and household living status; as well as individual perspectives on poverty, gender roles, and other concerns. The detailed household survey included questions regarding household gender roles similar to the focus group discussions and key informant interviews to crosscheck the reliability of the information obtained from anonymous interviews.

Of the total sample of 500 individuals surveyed, a little over 30% comprised women. This may not appear to provide proportional representation for female stakeholders. Several factors, taken together, help explain the smaller percentage of female respondents (Box 9).

Overall, each surveyed group provided information critical to the social analysis and DPA (Section E), and recommendations for the best complementary actions and mitigation measures. The surveys gathered a wide range of information, including income levels to assess poverty incidence. Moreover, the survey responses, collectively reinforced the method used to estimate the number of project beneficiaries, including the number of poor and very poor.

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9 Since the freight shipping sector is very underdeveloped in Timor-Leste, and virtually no freight shippers are outside the capital, Dili, all the freight shipper surveys were conducted in Dili.

10 For example, the passenger and local population surveys collected information on how difficult it is for the poor and very poor to access schools and hospitals; and how people believe an improved road would affect them.

11 For example, the surveys assessed people’s awareness of HIV/AIDS and long-distance drivers’ behavior when staying away from home overnight. This allowed the study team to assess potential health risks from the road improvements.
C. Consultations with Organizations

During ADB’s fact-finding mission in May 2005, the ADB staff and feasibility study team met with a number of local and international NGOs; the Ministry of Agriculture, Forestry and Fisheries; and Timor-Leste consulting firms and civil works contractors (Table 2). The main purpose of these consultations was to identify and assess, in the specific context of Timor-Leste, the (i) advantages and disadvantages of community-based, labor-intensive road rehabilitation and maintenance of roads, (ii) appropriate modalities to increase women’s participation in the proposed project in a culturally sensitive and acceptable manner, (iii) methods of addressing the issue of HIV/AIDS and sexually transmitted diseases, and (iv) capacity of Timor-Leste’s NGOs to carry out the project’s community-
Table 2: Organizations Consulted by the Project Team

<table>
<thead>
<tr>
<th>Name</th>
<th>Type of Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Association HAK (Association for Law, Human Rights, and Justice)</td>
<td>Timor-Leste nongovernment organization (NGO)</td>
</tr>
<tr>
<td>CARE International</td>
<td>International NGO</td>
</tr>
<tr>
<td>Caritas</td>
<td>International NGO</td>
</tr>
<tr>
<td>Carya Timor-Leste</td>
<td>Timor-Leste civil works contractor</td>
</tr>
<tr>
<td>Kai Watu Kmanek (KWK)-Consultant</td>
<td>Timor-Leste consulting firm</td>
</tr>
<tr>
<td>Lao Hamutuk</td>
<td>Timor-Leste NGO</td>
</tr>
<tr>
<td>Ministry of Agriculture, Forestry, and Fisheries</td>
<td>Government of Timor-Leste</td>
</tr>
<tr>
<td>NGO Forum Timor-Leste</td>
<td>Umbrella organization for Timor-Leste NGOs</td>
</tr>
<tr>
<td>Oxfam Australia</td>
<td>International NGO</td>
</tr>
<tr>
<td>P.T. Gunung Kijiang</td>
<td>Timor-Leste civil works contractor</td>
</tr>
<tr>
<td>Rede Feto Timor-Leste</td>
<td>Umbrella organization for Timor-Leste NGOs working on women’s issues</td>
</tr>
</tbody>
</table>

empowerment initiative (details of this component are in Chapter IV, Section B.5; and Appendix 1).

The Ministry of Agriculture, Forestry, and Fisheries carries out, under the World Bank’s Agricultural Rehabilitation Project, community-based feeder road rehabilitation activities. Considering the possibility of applying a similar approach to a pilot area of the proposed project, the project team met with the Ministry’s irrigation advisor to assess the actual procedures and past performance in implementing such projects, and the problems encountered.

The local and international NGOs met by the project team worked extensively in the areas of community empowerment and rural development. The meetings were held to obtain feedback on a range of issues, including the capacity of Timor-Leste NGOs to appropriately address HIV/AIDS and sexually transmitted infection (STI) issues in the cultural context of Timor-Leste, and modalities to promote participation of women, the poor, and other vulnerable groups during project implementation.

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12 HIV/AIDS = human immunodeficiency virus/acquired immunodeficiency syndrome.
The project team met with two civil works contractors and one consulting firm who have been working on similar construction projects in Timor-Leste using local laborers to assess the practicality of placing gender-inclusive modalities in the project design, and addressing HIV/AIDS and STI issues with construction workers. The team learned about their hiring practices, views on how realistic it is to include employment quota requirements for women and the poor, and how they feel about culturally sensitive issues such as HIV/AIDS and STIs and how they should be addressed.

The feedback received from the consultations with organizations was reflected throughout the design of the proposed project.

**D. Integrating Women in Stakeholder Consultations—Practical Applications**

Throughout the stakeholder consultation process, the study team undertook a number of initiatives to ensure integration of women, particularly in the field consultations, such as holding women-only focus group discussions (Section B.2), and employing female interviewers/surveyors for the small-sample surveys (Section B.3). These enabled women to express their concerns and perspectives freely. Despite the obstacles, the approaches to integrate women in stakeholder consultations were successfully implemented (Table 3).

**E. Data Collection for Social Analysis and Distribution and Poverty Analysis**

Well-targeted fieldwork and primary data collection make the social analysis and DPA more useful for project assessment and developing the best policy recommendations. The feasibility study team collected extensive primary data for the social analysis and DPA as part of the field consultations (Section B). On the other hand, the study team also relied on secondary data in ranking the districts to select survey locations.
Table 3: Integrating Women in Stakeholder Consultations in Timor-Leste

<table>
<thead>
<tr>
<th>Approach</th>
<th>Primary Obstacle/s</th>
<th>Application</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include both men and women in same population for assessment.</td>
<td>None. Although the study team's timeframe did not allow scheduling the survey at any specific season of the year, the team did not face any particular difficulty finding both women and men for interviews. This can be partially due to the lack of employment opportunities in Timor-Leste.</td>
<td>Successfully applied.</td>
</tr>
<tr>
<td>Schedule interviews taking into account men's and women's different work schedules. For example, do not schedule a village meeting when women are usually preparing meals.</td>
<td>Difficult traveling conditions to remote areas away from Dili and their homes impeded the participation of some women.</td>
<td>Relatively successfully applied.</td>
</tr>
</tbody>
</table>
| Use both male and female interviewers.                                   | • Lack of venues or space constraints,  
  • Time constraints for preparation,  
  • Cultural sensitivity, and  
  • No power to enforce separating women from men.                                                                                                                                   | Relatively successfully applied.                    |
| When culturally appropriate, interview men and women separately, as men and women may not always speak freely in front of each other. |                                                                                                       |                                                      |
| Conduct mixed-sex focus groups in addition to focus groups with male or female participants only. | • Lack of venues or space constraints.  
  • Time constraints for preparation.                                                                                                                                                    |                                                      |

1. Selecting Survey Locations—Ranking Districts Using Secondary Data

In determining the survey locations, the feasibility study team considered the data obtained from initial interviews and field observations in addition to secondary data, because detailed secondary data at the district or lower administrative levels in Timor-Leste are limited and thus unlikely to depict conditions in 2005. Nevertheless, the analysts identified poverty incidence, used the Suco Development Index, strategic crop production,
Designing Socially Inclusive and Gender-Responsive Transport Projects

and primary crop production as indicators to determine the candidate districts in which the team would then conduct detailed social/poverty surveys. The indicators are briefly described in Appendix 2.

Each indicator was indexed and assigned a weight to come up with a total ranking. Based on the indicators, the analysts identified Bobonaro, Dili, Ermera, Baucau, and Viqueque Districts as the highest priority districts. Among them, Dili District was excluded because (i) the district is considerably smaller than the other districts and its road network is in relatively good condition, and (ii) the road network that goes through Dili District will certainly be maintained for Dili to function as Timor-Leste’s national capital. Thus, the study team’s primary social and poverty surveys were conducted focusing on, but not limited to, the (i) four top-priority districts selected for their social and poverty context (Bobonaro, Ermera, Baucau, and Viqueque); and (ii) three districts where the highest-priority roads determined by the preliminary economic analysis are located (Ainaro, Cova Lima, and Manufahi). The first four districts are among the most underdeveloped and/or those that suffer the most severe food insecurity, and the latter three districts are those with the highest Suco Development Index and least food insecurity. Therefore, conducting surveys in these seven districts provided a balanced sample to determine the representative social and economic conditions of Timor-Leste.

2. Collecting Primary Data

The team integrated the data collection efforts for the social analysis and the DPA to the extent possible, including the field consultations (Section B).

3. Field-Testing and Refining Questionnaires

Although field-testing of questionnaires is time-consuming, it is an important step prior to actual data collection. While the study team had extensive experience in conducting socioeconomic surveys in many developing countries, determining whether each question will capture the targeted piece of information in a desired manner is not possible until it is actually answered by the targeted population. The field-testing also makes it possible to see whether the length of each questionnaire is appropriate for the specific interview environment and people’s willingness to take time
Stakeholder Consultations and Data Collection for the Project to answer questions. Because of the country-specific context, including the language, culture, and education levels, what works well in one country does not necessarily work in another country. Field-testing of the questionnaires in Bobonaro proved that the way some questions were asked in another country would not be suitable in the context of Timor-Leste. In addition to providing the opportunity to refine the questionnaires and to phrase each question appropriately, field-testing also gives the locally employed surveyors practical training in conducting interviews. The questionnaires were field-tested in Bobonaro District in early March 2005, and refined as appropriate (Figure 2).

Among the most important questions are those that would allow the team to determine poverty incidence, which is essential to DPA and assessing vulnerable groups for the social analysis. The study team was not sure about the types of questions that would be most successful in collecting the largest number of responses with useable quality data. Based on past experience, good practices, and input from the team’s local staff, the team prepared a test questionnaire asking to assess the people’s incomes, expenditures, and food security: (i) income of each household member; (ii) expenditure on various items; (iii) percent of total household food consumption satisfied with household agricultural production; and (iv) number of months during the last 12 months, if any, during which people in the household did not have sufficient food.

Separate from the questionnaires that included these questions, the team prepared another set of questionnaires to assess the poverty incidence by attempting to estimate people’s caloric intake. Based on the results of the field test and the study team’s field observations, it was difficult for
people to provide any reasonable figures on their incomes or expenditures (Box 10). Thus, the team decided to allow more flexibility in the income and expenditure questions to obtain responses as accurately as possible given the way in which people are able to respond to questions. The caloric intake questions were dropped because people did not have a good sense of kilograms or could not approximate their households’ consumption for the past 7 days.

Instead of asking people to provide the monthly or annual income and expenditure of each of their household members, the local surveyors first asked the total household monthly or annual income. These data on income and expenditures, together with answers obtained from questions on the percentage of total household consumption satisfied with household agricultural production and the number of months with food insecurity, were used as the base to determine poverty incidence (Chapter III, Section A).

**Box 10: Why is Self-estimating Income Difficult?**

A large number of the local population’s inability to provide better estimates of income or expenditures is because they are subsistence or near-subsistence farmers without any regular cash incomes or expenditures. Farmers’ incomes vary greatly from one season to another, depending on the crops produced and the weather. People appear to spend what they have without much consideration for next year or the coming months. Many farmers interviewed coped with the shortage of food and/or income by selling what they had, if there is any, when their needs arose on an irregular basis. It appeared that the seasonality of harvests, the irregularity of their sales, and unplanned spending make it difficult for the farmers, who have no or very little education, to calculate and provide information on their approximate monthly or annual incomes or expenditures.

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15 When people were unable to provide the total amount, they were asked to list any income they had acquired and/or expenditures they had made during the last year or month, including the period and frequency. These included some odd items such as “selling a goat for ___ dollars perhaps once in 3 or 4 months”, “coffee sales of ___ dollars once a year”, and “$2–3 every time I go to the market, which is about once a week”. Based on this type of information, the team calculated people’s average household income per month.
Stakeholder Consultations and Data Collection for the Project

Conducted by the Poverty Assessment Project, a partnership between the Government of Timor-Leste and a number of international agencies. Unfortunately, no reliable published poverty data were available for the period either prior to or after the 2001 Timor-Leste Living Standard Measurement Survey for the purpose of making any comparisons over time and/or tracking trends. Even if any data existed prior to 2001, the data would hardly be comparable because of the large fluctuations in the overall population due to the long period of conflict. At the time this study was conducted, the 2004 census data were still being processed, but the preliminary results of the 2004 Census demonstrate an increase of over 17% in the national population compared to the 2001 data, and the population change has been as large as almost 40% depending on the district.

Poverty and Social/Gender Analyses for the Project

Chapter III

A. Determining Poverty Incidence and Estimating Project Beneficiaries

Timor-Leste is one of the poorest countries in the world. According to the latest available published data source at the time of this study, the Timor-Leste Living Standard Measurement Survey 2001, 40% of Timor-Leste’s total population lives below the national poverty line of $15.44 per capita income per month or just over $0.50 a day. In general, the incidence of poverty is higher in the western than in the eastern region, and higher in rural than in urban areas.

Considering that the official data on poverty is outdated, the feasibility study team worked on estimating the project-specific incidence of poverty based on the primary data collection efforts undertaken, and newly acquired secondary data (Chapter II, Sections B and E, respectively). Astonished by the severe degree of poverty and food insecurity observed during the fieldwork, and as a standard practice for the social analysis and
The results of the field data collection revealed that the “official” poverty incidence of 40% was too low. Based on the primary data collected during the study, the team concluded that the estimate should be revised upward to account for at least 90% of Timor-Leste’s population as being “poor”, and 50% as being “very poor”. The team’s higher estimates are still conservative, probably understating the true incidence of poverty in the country. It is important to note that in an ADB-sponsored workshop held at the end of the project in October 2005, no one in the Government of Timor-Leste (GOTL), international aid agencies, local or international NGOs, or other resident expatriate experts challenged the new estimates of poverty and extreme poverty. Indeed, participants at the workshop endorsed the team’s new estimates of the incidence of poverty and extreme poverty in Timor-Leste.

Based on the estimated poverty incidence, out of the total beneficiaries (those who are expected to be affected by the project both positively and negatively) of about 62,000 in the project’s corridor of influence (COI), the poor will be about 55,000 and the very poor 28,000. The national road rehabilitation project component during the first year alone is estimated to benefit about 51,000 people, including 46,000 poor and 24,000 extremely poor people (Section C.2).

Since women account for nearly half of the national population, it can be estimated that about half of the estimated beneficiaries will be women. These numbers were estimated by applying the population density of districts where the project roads are located to the size of each project road’s COI.  

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17 Population density is based on the preliminary results of the 2004 Census, which comprised the latest available population data as of May 2005. A project road’s corridor of influence (COI) is defined as a 5-kilometer-wide area on both sides of the road plus half circle with a 5-kilometer radius on both ends of the road. Although for many other projects, the COI of a road project is defined as a 15-kilometer area on both sides of the road, due to Timor-Leste’s mountainous topography, the size of the COI was adjusted to yield a more realistic estimate of the number of project beneficiaries.
B. Social/Gender Analysis

The social analysis establishes the proposed project’s (i) likely effects on different groups, with a focus on the poor, minorities, and other vulnerable groups; (ii) determines resettlement needs (if any), and develops resettlement plans if necessary; and (iii) identifies constraints to passing the project benefits to targeted groups. As for results that affect project design and implementation, the social analysis develops targeting mechanisms for the protection of adversely affected vulnerable groups, arrangements for participatory development strategies to improve the targeting and efficiency of the project, service delivery mechanisms that match the estimated absorptive capacity, and inputs into the project’s overall monitoring and evaluation program.

The social analysis undertaken within the project consisted of six components:

- poverty profile of area around the roads to be improved and the surrounding regional economy;
- identification of project affected subgroups, such as passengers, drivers, and vehicle owners;
- needs and demands assessment of potential beneficiaries and the local population;
- assessment of the people’s absorptive capacity;
- gender analysis; and
- possible impacts on vulnerable groups, such as ethnic minorities.

The most important input to the social analysis comes from the stakeholder consultations (Chapter II), especially the qualitative information and anecdotal stories from the direct and extensive discussions with villagers. The following sections present the findings of the social analysis conducted in Timor-Leste.

1. Poverty Profile of Project Area and Villager’s Perspectives

Poverty Profile of Project Area. The villages along the potential roads to be improved are generally poor, consisting mostly subsistence and near-subsistence farmers with a marginal or small piece of land for cultivation. Farmers have no access to fertilizers or farming machines, the dominant purpose of agricultural production being for household consumption.
Sales of farm produce, while the major source of income for majority of the village population, are sporadic and provide a minor share of households’ sustenance. The cash income earned is mainly spent on food, cooking oil, kerosene, and children’s education. The typical household size is 6–8 members, and a large proportion of the total village population has little or no education. The modes of transportation most commonly available to many of the villages are small trucks and microbuses.

A primary school is usually located in each village, which provides children with relatively easy access. However, access to secondary and higher education is difficult because of the limited number of, and the long distance to, these schools. The supply of electricity and drinking water in the villages is either not available, or, if available, only for several hours per day. The lack of water supply is a serious concern. Affected villages rely on nearby rivers for water.

Access to health services and other social facilities is also limited. Residents of many of the villages must go several kilometers by foot or public transport to reach the nearest health care facilities. Public transport is available only during the day, and expensive ($0.50 to $1.00 per one-way trip to the nearest clinic/hospital) for most villagers. Daily markets only exist in main cities such as district capitals, and weekly markets in subdistrict capitals. Most villages do not hold weekly markets.

Many villages have some organized village-level activities, such as village meetings and volunteer activities (e.g., cleaning public drains and repairing public facilities) that serve the common good of the community.

18 A few of the villagers also raise livestock, such as cows, buffalos, pigs, chickens, horses, goats, and dogs.
Poverty and Social/Gender Analyses for the Project

Villagers’ Perspectives of Their Poverty. The feasibility study team obtained the villagers’ perspectives of their poverty through 11 focus group discussions (details in Appendix 4). According to the responses, food security is the top determinant of wealth or poverty from the perspective of the villagers, along with affordability to provide education beyond the primary level to their children. These are followed by material measures (e.g., houses’ conditions, number of livestock and automobiles).

The attitude of individuals toward work is perceived as the number one cause of poverty, followed by low levels of education and skills. Less important considerations include (i) poor land condition and bad weather affecting farm production; (ii) household size, particularly the number of dependents including old couples; and (iii) cultural pressure to spend large sums of money for ceremonial occasions.

2. Project-Affected Subgroups

Based on the stakeholder consultations and other data (Chapter II), the following subgroups are expected to be affected by the proposed road improvement:

- local population, mainly farmers;
- passengers;
- operators of passenger and freight transport vehicles;
- vehicle owners;
- users of freight transport services; and
- entrepreneurs of small and large businesses.

The needs, demands, and absorptive capacity of each subgroup, as well as the project’s expected impact on them, were analyzed. It is anticipated that
the proposed project will benefit all of the identified subgroups by lowering transportation costs, decreasing travel time, and reducing the damage to farm products during transportation, though the extent will vary by how far they must hand-carry produce to the main roads being improved.

3. Villagers’ Needs and Demand Assessment

The villagers’ most desired program for development was to provide education, vocational skills training, fertilizers, farming machines, and/or an irrigation system so that the villages could increase their agricultural productivity (Table 4). Many villagers feel that they could be more productive if they have better education or skills and complemented by fertilizers, farm machinery, and/or an irrigation system. Many of them say they could sell more if they could produce more, and that doing so would improve their livelihood. This is closely associated with their self-defined causes of poverty (Appendix 4, Section B).

Table 4: Desired Development Programs

<table>
<thead>
<tr>
<th>Rank</th>
<th>Desired Development Program</th>
<th>Number of Focus Groups (Total 11 groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Education, vocational skills training, fertilizers, farming machines, and/or irrigation to increase farming productivity</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>Water supply system</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Road improvement</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Power/electricity supply</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Health clinic in the village</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Tailoring machine for women</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Paddy washing machine</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Development of cooperatives</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Set standard for coffee prices</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Social assistance, such as providing food and funds for housing repair</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Assistance for children’s education, such as scholarships</td>
<td>1</td>
</tr>
</tbody>
</table>
Putting in place an appropriate water supply system is considered one of the urgent needs by those who live without one. This is understandable, because the lack of clean water directly and severely affects the various aspects of daily living and survival, adversely affecting general health conditions and sanitation levels.

Other desired programs are for road improvement and power/electricity supply. As the largest number of focus groups cited poor road conditions as one of their major concerns, this ranking of desired programs may appear inconsistent. The ranking does not mean that roads are not important to their life, but many villagers believe that, under current conditions, they would not have anything extra to sell even if the roads were better. Thus, in their view, improving the roads to increase access, alone, would not make their livelihoods better; their agricultural productivity must be raised at the same time.

4. Assessment of Villagers’ Absorptive Capacity

The responses from the villagers about the expected impact of road improvement on their life were overwhelmingly positive (Table 5). Many villagers believe that roads will make it easier and more affordable for them to travel to market places and other primary social facilities. Given appropriate complementary programs to increase agricultural productivity, they expect increased income-generating opportunities, and sales of their agricultural produce.

In all the villages, villagers were very supportive of the road improvements and expressed their desire to participate as wage laborers during the construction phase. They were also willing to provide community-level maintenance activities within their capacity, such as cleaning the roadsides and drains, and repairing minor damage for compensation. Some villagers would like to do more, but they feel unable to without any modern equipment. Nevertheless, these demonstrate their strong desire to have better roads and be part of the project.
On the other hand, many villagers feel that improvement of the core road network alone is not enough. To them, feeder roads leading to their farms and gardens are of equal importance. They say they would be very happy to have better main roads, but that their lives will remain difficult without better feeder roads.

5. Gender Analysis and Impact on Women

Timor-Leste’s households retain a traditional stereotypical division of gender roles. In general, men dominate the division of gender roles in households. Women and girls in the households usually carry water to their houses—which takes 1–3 hours a day—buy food, take care of children, cook, and wash clothes. Men and boys are responsible for taking care of livestock, wage labor, building and repairing houses, and household decision making (e.g. household spending). Both men and women do activities such as selling agricultural produce and farming.

Such gender stereotyping where men carry the overall decision-making responsibilities for important issues, suggests that project design should incorporate ways to increase women’s participation in overall planning, construction and monitoring. The planning stage and benefit monitoring should have consultation meetings with women, which are
separate from those for men, to create opportunities for women to express their views freely, as done by the feasibility study team (Chapter II, Section D). During construction, quantitative requirements to employ women can be incorporated in the construction contracts. The types of work that can be conducted by women without prior construction skills include, but are not limited to:

- Clearing vegetation;
- Cleaning drainage;
- Stone masonry and gabion work; and
- Planting and bioengineering.19

Women should be encouraged to take part in these activities during construction, as well as maintenance activities. These aspects were taken into consideration in the final design of the project, which is discussed in Chapter IV, Section B.3.

6. Possible Impacts on Ethnic Minorities

As is the case in many other Pacific island countries, Timor-Leste consists of a large number of different language groups, which are associated with their ethnicities. There are 16 main languages spoken by the people of Timor-Leste, with Tetum being dominant. However, no significant differences of cultural and social identity exist among them, except for a small number of Muslims in this overwhelmingly Roman Catholic society. No ethnic minority groups, including Muslim groups, are expected to be adversely impacted by the proposed project.

C. Distribution and Poverty Analysis

The distribution and poverty analysis (DPA) looks at how a proposed project will affect different stakeholders—i.e., those groups that will benefit from the project and those that will lose in terms of the project’s net economic benefits. This form of analysis is very flexible because stakeholders may be defined and examined by a number of different attributes, such as income.

Bioengineering is the use of vegetation, terracing, and construction of efficient drainage systems to stabilize road embankments and slopes. The purpose of the vegetation is to minimize water penetration into the ground layers and to reduce the risk of erosion of the surface soils to ensure long-term sustainability of the roads. Bioengineering includes tree planting with deep-rooted species to reduce the risk of shallow slides and debris flow.
status, social characteristics (including economic, political, religious, and ethnic), gender, and geospatial characteristics. It is a particularly useful tool for policy makers because it allows them to assess (i) if the likely distribution of project net benefits corresponds with the stated objectives of the project, (ii) the success or failure of the project independent of traditional measures such as the internal rate of return, and (iii) the impacts of policy changes on the distribution of project net economic benefits. Policy makers need to understand the sociopolitical implications of proposed projects to better assess the likelihood of their successful implementation and sustainability.

To conduct the DPA for this project, the team used the method as described in ADB guidelines. In addition, the work took into account recent changes ADB has made in conducting poverty impact assessments for road projects, such as distributing net economic benefits, which are discounted over the 20-year life of the project. By discounting, the monetary value of the net benefits is put in terms of today’s dollars. DPA rests on four pillars:

- Determining poverty incidence and estimating project beneficiaries (Section A);
- Identification of stakeholder groups;
- Distribution of benefits among stakeholder groups; and
- Sensitivity analysis and complementary actions.

The feasibility study team’s fieldwork, particularly the direct field observations and small-sample surveys (Chapter II, Section B), is the foundation for the project’s DPA. As the beneficiary analysis has been presented, the following sections focus on the remaining three pillars of DPA.

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21 Jenkins, Glenn P., and Arnold C. Harberger. 1999. *Cost-Benefit Analysis of Investment Decisions*. Cambridge, MA: Harvard Institute for International Development. p. 14:2. Project sustainability is heavily affected by the expectations of stakeholders as to whether they will gain or lose over the near- and long-term. If an influential group is expected to bear almost all economic costs resulting from the project and get few of the benefits, it is likely that the group will attempt to block the project’s implementation. Project implementers need to be aware of, and be prepared to tackle, the risk that the losing stakeholders will mobilize to oppose the project.
23 For more on recent work on the DPA, see Gajewski, Gregory, and Marc Luppino. 2004. *Methods in Distribution and Poverty Impact Analysis: Practices and Clarifications*. Paper commissioned by the ADB, and presented at the Western Economic International Association 2004 Annual Meeting in Vancouver, Canada. See also papers at http://louisberger.com/berger/macro-iqc/ocstl.html. These methods of analysis are available on the web, and are only briefly discussed in this case study.
1. Identification of Stakeholder Groups

Critical to a “best practice” benefit distribution analysis is identifying the most important stakeholder groups that are relevant for the specific project. For a road rehabilitation project, a typical set of stakeholder groups may include passengers, freight shippers, vehicle owners, the government roads authority, any private concessionaires, labor, the GOTL, and the general economy.

Based on the extensive fieldwork, the following groups were identified as major stakeholders of the proposed project:

- passengers—poor, very poor, and nonpoor;
- passenger vehicle owners—poor, very poor, and nonpoor;
- shippers of freight—poor, very poor, and nonpoor;
- freight vehicle owners—poor and nonpoor; and
- GOTL (including local and national government entities).

2. Distribution of Benefits among Stakeholder Groups

A benefit distribution analysis among stakeholder groups shows how estimated net economic benefits (discounted by 12%, the ADB standard discount rate) are distributed among the identified key stakeholder groups. This is needed to compute the Poverty Impact Ratios (PIRs) which show the percentage of net economic benefits (discounted over the life of the project) that accrue to the poor and the very poor.24

During implementation, the national road rehabilitation component (Viqueque–Uatucarbau, Aituto–Betulala, Betulala–Same, Oeleu–Lourba, and Lourba–Zumalai) is expected to generate about 170 person-years of employment; 70% or about 120 person-years, will be for the poor; and benefit about 51,000 people during the first year, including 46,000 poor and 24,000 very poor. The labor-intensive maintenance component is expected to generate 77 person-years of employment; 70% or 54 person-years, will be for the poor; and benefit 18,000 people in the road’s COI, of whom 16,000 are poor and 8,000 very poor.

In total, the Project is expected to benefit about 62,000 people, including 55,000 poor and 28,000 extremely poor (Section A). The total

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24 ADB actually no longer requires reporting of Poverty Impact Ratio. See explanation in Appendix 5, Box A5.
benefit to the economy is estimated to be $18 million, about 40% of which are anticipated to accrue to the poor. In the baseline case of the proposed project, it is expected that about 20% of the total benefits (excluding the benefits to the overall economy) will be passed on to the poor, and 7% to the very poor. Details of the economic benefit distribution analysis are in Appendix 5.

Gender-specific impacts are of great interest to many, and it would certainly be interesting also to conduct benefit distribution analysis with women as a stakeholder group to see gender-specific benefit distribution. However, such analysis would be difficult to carry out, requiring more time and resources than are usually allocated for feasibility studies (Box 11).25

3. Sensitivity Analysis and Complementary Actions

Through sensitivity analysis and the associated fieldwork, complementary actions are identified to increase the number of poor beneficiaries and their share of project benefits. For a road project, they can include changes in competition policies and the regulatory framework to encourage competition in the transport sector because more competition pushes down transport service prices, and thus more of the benefits are passed on to the users.

The sensitivity analysis for the project was used to address specific structural constraints that block a larger share of the project benefits from accruing to the poor and very poor. If the GOTL and aid agencies follow complementary actions to alleviate these constraints, then the share of the benefits going to the poor could increase to as high as 62% of the total benefits. However, if these constraints are not addressed by the GOTL, or have become actually worse than estimated by the team, only 14% to 18% of the project benefits are likely to accrue to the poor, compared to the baseline case where 20% of the benefits are estimated to accrue to the poor (Section C.2).

In terms of risk analysis, since the poor’s share of national income is about 40%, a PIR substantially below this number indicates that a high proportion of the project’s benefits accrue to the nonpoor, while the poor bear a high proportion of the costs. Thus, a PIR of 21% indicates that there

25 Aside from women, the team attempted to conduct further distribution analyses with other specific subgroups of the above stakeholders, such as dissidents as stakeholder groups. However, this would require the small-sample survey data collected during the fieldwork (Chapter II, Section B.3) to be further disaggregated. Given the limited time and resources for additional fieldwork, the total sample size was not large enough for such a disaggregation. Disaggregating the survey results further would just make the sample size for each group too small to be used as input data for the analysis.
Although conducting a distribution analysis with women as a stakeholder group was not possible, some estimates were inferred from the field observations and rapid appraisals. From what the feasibility study team observed during the fieldwork, perhaps as many as half of all passengers on passenger and freight vehicles were women. The passenger survey data indicate that about 40% of the interviewed passengers were women, but the smaller proportion of women in the randomly selected sample is likely to be due to the interview environment (see Chapter II, Section D). This implies that, though it is a very simplified and rough estimate, women could receive almost half of the passenger benefits.

Another type of benefit to women that can be estimated relatively easily is the direct labor benefits. A target amount of the direct labor benefits to be received by women can be incorporated in the project design as being “encouraged”, or even as a required quota.

What is relatively difficult to analyze is the proportion of vehicle owner benefits that might accrue to women. Traditional gender roles prevail in Timor-Leste (see Section B.5) and women are disadvantaged in many aspects, including ownership of assets and participation in making decisions on matters affecting their lives. This implies that women of households with vehicle(s) would receive less vehicle owner benefits than the men of the same households would. However, accurately estimating the share of such benefits to women would further require a thorough examination of various household issues, including the relative power/roles of men and women in household finance, asset ownership, and general decision making. Such an examination goes far beyond what can be done in typical road feasibility studies.

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Box 11: Benefit Distribution Analysis with Women

Although conducting a distribution analysis with women as a stakeholder group was not possible, some estimates were inferred from the field observations and rapid appraisals. From what the feasibility study team observed during the fieldwork, perhaps as many as half of all passengers on passenger and freight vehicles were women. The passenger survey data indicate that about 40% of the interviewed passengers were women, but the smaller proportion of women in the randomly selected sample is likely to be due to the interview environment (see Chapter II, Section D). This implies that, though it is a very simplified and rough estimate, women could receive almost half of the passenger benefits.

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is a degree of political risk that the poor will object to or hinder project implementation. A PIR of 62%, which may occur if all the complementary actions are put in place, will certainly gain the support of the poor for the project, and is probably not so high as to incur opposition from the nonpoor. If, for example, the PIR were estimated to be 80% for this project, then the nonpoor would object to the project, and the risk that nonpoor groups would block the project would be high. How to gauge the riskiness of a project given the percentage of national income that accrues to the poor compared to the PIR must be based on the expert judgment of those who know the country’s social and political dynamics. In the case of Timor-Leste, having such a high proportion of poor in the population where the PIR is well below their share of national income, and instituting that project (which primarily would benefit the nonpoor, such as the project in this case study with no complementary actions) is a risky activity.
Table 6 presents the key structural constraints identified by the feasibility study team, and the recommended complementary actions.

<table>
<thead>
<tr>
<th>Key Structural Constraint</th>
<th>Recommended Complementary Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nascent drivers’ and vehicle owners’ associations are a threat to market-determined fares and freight rates, and the GOTL sets bus passenger fares</td>
<td>Initiate pro-competitive transport services sector policies and implementation, where the GOTL prevents owner’s or drivers’ associations from setting fares and freight rates and abolishes any fare regulations for bus passengers and freight shippers.</td>
</tr>
<tr>
<td>Poor condition of secondary and feeder roads</td>
<td>Rebuild and improve critical feeder and secondary roads via a sequenced approach that is done in tandem with the 10-year development plan for the national road network developed by ADB for the GOTL.</td>
</tr>
<tr>
<td>Poor condition of secondary and feeder roads</td>
<td>Create a strong maintenance program to keep the national and critical feeder and secondary roads open and in good condition using state-of-the-art pavement management system.</td>
</tr>
<tr>
<td>Farmers’ lack of knowledge, skills, and abilities to use modern farming techniques and inputs</td>
<td>Provide more agricultural extension services, which are only beginning to be instituted in some districts. More technical assistance and budget are needed so that the farmers can take advantage of an improved transportation system.</td>
</tr>
<tr>
<td>Lack of credit and other barriers to entry facing entrepreneurs who would like to enter or expand operations in the transport services markets</td>
<td>Create credit programs directed at entrepreneurs who would like to enter the transport services markets in rural areas or expand their existing vehicle fleets. This would increase the number of operators and passenger and freight vehicles. This program should be targeted to those entrepreneurs who operate in areas outside Dili. At present, Dili has a surplus of taxis and an adequate supply of other passenger and freight vehicles.</td>
</tr>
<tr>
<td>Large presence of luxury 4WD vehicles owned by the United Nations and other aid agencies that will eventually become the GOTL’s property, or that only the rich can afford</td>
<td>Institute a Vehicle Fleet Transformation Program. The GOTL could start by selling surplus 4WDs, pickups, and jeeps that were donated to them by the United Nations and other aid agencies. The GOTL should then use the funds to purchase lower-cost vehicles that are better suited for use by transport service providers to move passengers and ship freight in rural areas. The vehicles should be rugged, easy to maintain and repair, and have a capacity that is greater than the jeeps and 4WDs that were sold to the rich. As poor farmers benefit from an expanding secondary and feeder road network, and improved extension service, this policy will have a large impact on poverty alleviation.</td>
</tr>
<tr>
<td>Inadequate institutional structure and staffing at the PWD that could reduce the sustainability of the project</td>
<td>Develop a strong program to expand and train PWD staff to manage the road sector. This should include developing capacity to program routine, periodic, and emergency maintenance of the road network; and operate sophisticated road network planning tools so that staff will be able to manage and operate a Pavement Management System. Such program will also enable the staff to plan other road expansions and improvements so that the road network will grow as appropriate to support the economic and social growth of Timor-Leste.</td>
</tr>
</tbody>
</table>


A similar policy to subsidize the sale of surplus vehicles was used in the Philippines at the end of World War II to move vehicles into markets to serve the poor. The Government of the Philippines sold surplus United States (US) military jeeps and small trucks that were donated to it by the US military to private businesses, which modified and expanded the vehicles to carry more passengers and freight. Today, the Philippines has a small industry that imports used vehicle parts and assembles new “jeepneys” which have become the predominant form of passenger and small freight transport, mostly by the poor, throughout the country.
Socially Inclusive and Gender-Responsive Design Features of the Project

Based on the feasibility study team’s extensive consultations and fieldwork (Chapter II), which fed into the poverty and social/gender analyses (Chapter III), as well as past good practices (Chapter I), the team identified and incorporated the social and gender issues that need to be addressed by the Timor-Leste Road Sector Improvement Project (Section A). The project’s socially inclusive and gender-responsive design features (Section B) are expected to maximize the project’s positive development impacts on the socially disadvantaged groups, such as the poor and women. They emphasize women’s participation in grassroots decision-making processes and structures, employment opportunities, and ways to mitigate project-specific social and gender-responsive risks. By increasing the share of benefits accruing to the poor, women and other vulnerable groups, the socially inclusive and gender-responsive design features increase the chances of the project’s success.

A. Social and Gender Issues Identified

Because of its high poverty incidence (Chapter III, Section A), Timor-Leste is one of the least-developed countries in the world. Officially, more than 40% of the population is reported to live below the poverty line of $0.55 per day. The difficult terrain, geology, poor transport system, and weather conditions contribute to the isolation of local communities and
severely limit access to water supplies, energy, food, basic social services (health care and education), and local markets.

The poor condition of feeder roads especially affects rural women in an environment where traditional gender roles disadvantage women in many respects (Chapter I, Sections B.1 and B.2; and Chapter III, Section B.5). Although much of the core road network remains in poor condition and have very light traffic, there has been evidence of increasing traffic accidents caused by the small increase in traffic. Therefore, traffic safety will increasingly become a serious concern as the road network is improved and traffic increases.

Awareness of HIV/AIDS and other STIs remains extremely low. The feasibility study team’s surveys demonstrate that 70–85% of the respondents were ignorant of what HIV/AIDS was. When questioned whether they knew

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**Figure 3: Incorporating Socially Inclusive and Gender-Responsive Features in Project Design**

- **INITIAL POVERTY AND SOCIAL ASSESSMENT**
  - Scope out specific gender constraints and opportunities.
  - Identify project-related risks.
  - Identify the need for and establish a method and get resources to do a more detailed poverty/social assessment during the design phase.
  - Establish prospects for a participatory framework to enhance local ownership.

- **SOCIAL/GENDER ANALYSIS**
  - Collect detailed social/gender information necessary for project design.
  - Identify explicit social/gender development impact, outcomes, targets, and indicators.
  - Cost out and schedule social/gender design measures.
  - Prepare time-bound and budgeted gender-relevant actions and mitigation plans.
  - Confirm and consolidate the participatory framework to review and decide on options to enhance local ownership.
  - Define institutional and social arrangements.
  - Arrange for monitoring and evaluation of social/gender impacts and outcomes.
  - Confirm and validate design measures, action measures, and mitigation plans that may have been prepared.

- **PROJECT COMPONENTS**
  - Identify practical modalities through which opportunities, benefits and risks identified in the Social/Gender Analysis can be reflected in project-specific components and/or activities.

- **DESIGN AND MONITORING FRAMEWORK**
  - Ensure incorporation of gender relevant and gender-specific targets/indicators in the design and monitoring framework.

- **PROJECT PERFORMANCE MONITORING SYSTEM**
  - Assess achievement of social/gender impacts and outcomes.
  - Identify issues and opportunities for improvement during implementation.
  - Review achievements and failures; learn lessons for future application.

- **SPECIFIC ASSURANCES**
  - Project performance monitoring and evaluation
  - Labor Laws
  - Gender and Development
  - Health Risks

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how to prevent the disease, approximately 90–100% responded that they did not know. Furthermore, only about 5% indicated that they used any kind of contraceptives. The survey also revealed that long-distance drivers engage in high-risk behavior of potential STI transmission. Although the latest joint surveys of the Ministry of Health of Timor-Leste and World Health Organization estimated a 0.64% HIV prevalence, the lack of awareness suggests that road network improvements can pose a severe HIV/AIDS risk to currently isolated communities by increasing their exposure to increased road traffic (Box 12).

### B. Socially Inclusive and Gender-Responsive Design Features of the Project

#### 1. Vehicle Fleet Transformation Program

The downsizing of the United Nations presence resulted in all surplus vehicles reverting to the Government of Timor-Leste (GOTL). The feasibility study team recommended, as a very important policy action, that the GOTL sell these vehicles to the rich and international buyers at market prices, and use the proceeds to purchase lower-cost passenger and freight vehicles to serve the poor and very poor in rural areas (see Chapter III, Table 6). Along with a recommended credit subsidy program, the GOTL would ensure that the lower-cost vehicles are sold to entrepreneurs in the transport services sector to serve rural areas. As poor farmers benefit from expanding transport services on the secondary and feeder road network, and an improved agricultural extension service, this policy will have a large impact on poverty alleviation, according to the distribution and poverty analysis (Chapter III, Section C).

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A light truck used as a passenger vehicle, Maliana market, Bobonaro District
Box 12: HIV/AIDS and Improved Roads: A High Risk

When the transport sector is improved, the risk of disease spreading across wide areas increases rapidly with the faster and more frequent movement of people and goods. Although the number of East Timorese who are HIV-positive appears to be very small, the risk of HIV/AIDS should be immediately addressed to avoid a full-fledged epidemic.

The National Strategic Plan and the statement in the Health Care Sector Investment Report prepared by the Government of Timor-Leste ministries indicate that understanding of HIV/AIDS in Timor-Leste is good. However, the field survey results suggest that lack of awareness of the disease in the country is serious: 84% of the local population, 71% of passengers, and 77% of vehicle operators interviewed were ignorant about HIV/AIDS. When asked whether they know how to prevent HIV/AIDS, 97% of the local population, 95% of the passengers, and 89% of the vehicle operators had no idea. Only 2% of the local population, 6% of the passengers, and 4% of vehicle operators use any kind of contraceptives. The vehicle operator survey also questioned drivers about whether or not their work involves any overnight stays, and if it does, whether they have sexual intercourse. Of the sample 122 drivers, the work of 28 drivers involved overnight stays, and 31% of the drivers reported that they engaged in sexual intercourse at the location where they spent the night.

These findings, the lack of awareness and understanding of the disease, and long-distance drivers’ involvement in risky sexual activities suggest a high risk of a rapid spread of HIV/AIDS along improved roads. Therefore, besides the general HIV/AIDS awareness campaigns and other efforts currently underway by the government, nongovernment and international development agencies, the study team recommended that the proposed project incorporate a component on HIV/AIDS education for local construction workers hired for the project and possibly for long-distance drivers, who travel on the roads to be improved, as specific target groups.

2. Labor-Intensive Maintenance

Road assets can be prevented from rapidly deteriorating if routine maintenance is done on a timely basis. Routine road maintenance mainly involves clearing vegetation from shoulders, improving and shaping shoulders, clearing drains and culverts, and building stone/masonry-lined
drains. All these can be done without heavy equipment. Labor-intensive routine maintenance helps extend the life of roads and generates business opportunities and income for local communities.

Under the Project, the Illiomar–Lospalos road section, which is in relatively good and maintainable condition, was selected for routine maintenance using labor-intensive methods. Under this component, 10 contract packages for the road will target small contractors from local communities. An international road maintenance specialist will be provided to train the local contractors, improve their maintenance skills, and ensure that works are done properly. The goals of this pilot component of the project are to establish labor-intensive road maintenance policies, and institutionalize the bidding and contracting system to engage local small contractors. This will show the GOTL that the labor-intensive system is an effective way to do routine maintenance. The labor-intensive maintenance project component is expected to generate 77 person-years of employment, 70% or 54 person-years, will be for the poor; and benefit 18,000 people in the road’s corridor of influence, of whom 16,000 are poor and 8,000 very poor.

3. Involvement of Women

The traditional gender division of labor (Chapter I, Sections B.1 and B.2; and Chapter III, Section B.5) can be challenged by proactively ensuring women’s involvement in road rehabilitation and maintenance in a culturally sensitive manner. Areas identified for potential involvement of women include support services to construction camps and bioengineering works. As incorporated in the Grant Agreement (Section B.7), the Ministry of Public Works, through the project management unit, will encourage all contractors involved in project implementation to have 30% of all the wage labor force to be women (including women’s involvement in at least 75% of the labor for bioengineering works). Providing targeted programs for labor skills transfer will enable women to have effective access to these employment opportunities.

The project’s community empowerment initiative for sustainable rehabilitation and maintenance of selected rural feeder roads (Section B.5) has a strong gender focus and supports a broad range of initiatives that include (i) participatory and gender-inclusive identification and selection of
rural feeder roads to be rehabilitated under the project; and (ii) skills transfer to women in bioengineering, agroforestry, and agricultural extension, combined with literacy, nutrition, reproductive health, and HIV/AIDS prevention. These initiatives will include the design of sustainable modalities to ensure gender-inclusive maintenance of rehabilitated feeder roads.

4. Connection of Rural Areas with Community-Based Initiatives

Tangible benefits to the poor and isolated communities can more likely be achieved by ensuring the communities’ connectivity to markets, towns, and health care and education facilities by rehabilitating selected feeder roads along with national roads (Chapter III, Section B.4). Actively involving local communities throughout the process—from identification and selection of roads to rehabilitation and maintenance, complemented by various training, skills transfer, and education initiatives, should increase their sense of “ownership” of the roads. This may increase the project’s positive impacts by strengthening the communities’ capacity to maintain the roads and contribute to the long-term sustainability of road improvements.

The project’s community empowerment initiative (Section B.5) was designed to empower local communities to ensure community-based, labor-intensive, and sustainable rehabilitation and maintenance of rural feeder roads, with a range of complementary activities such as skills transfer, gender-targeted programs, and promotion of income-generating opportunities.

5. Community Empowerment Initiative

The project has four main components: (i) rehabilitation of three roads that consist of the following road links: Viqueque–Uatucarbau, Aituto–Betulala, Betulala–Same, Oeleu–Lourba, and Lourba–Zumalai; (ii) labor-intensive maintenance of Illiomar–Loapalos Road (Section B.2); (iii)
socially inclusive and gender-responsive design features of the project; and (iv) institutional strengthening of the Public Works Department of Timor-Leste. Of these, the community empowerment initiative was specifically designed to strengthen the capacity of rural communities to respond to the risks and opportunities associated with increased connectivity to the national roads. As this is a key design feature of the project to pilot a community-based, gender-inclusive development initiative, Appendix 1 describes the community empowerment initiative project component in detail.

6. Budget Allocation

Of the total $12.5 million project cost, the community empowerment initiative component is estimated to cost $560,000. For physical infrastructure development projects such as this Timor-Leste case, much attention is often given to the cost of detailed design and construction. Although ADB and other development partners emphasize poverty reduction and reaching out to vulnerable groups, if there is a budget limitation (which is normally the case), the project components whose budgets tend to be cut first are related to social development, including community and gender balance. It is important to note, however, that these specific design features are necessary if the improved physical infrastructure is to maximize its benefit to society in a sustainable manner. Therefore, appropriate and realistic costing for socially inclusive and gender-responsive design features is imperative.

7. Specific Assurances

To ensure that the above specific design features for socially inclusive and gender-responsive development are effectively implemented, a number of specific assurances pertaining to project monitoring and evaluation, use of laborers, employment of women as wage laborers, and mitigation of health risks were incorporated in the project’s grant agreement (Box 13).
Box 13: Specific Assurances for Gender-Responsive Project Implementation

**Project performance monitoring and evaluation.** The Government, through the Project Management Unit (PMU), assisted by the international and domestic consultants engaged under the project, will monitor and evaluate the project’s impacts. The Government will discuss and agree with the Asian Development Bank (ADB) on the indicators and baseline data prepared by these consultants prior to the commencement of civil works, and ensure that the consultants monitor and compare the data during project implementation and upon project completion. The Government, through PMU, will submit monitoring and evaluation reports to ADB 1 month after the completion of the consultants’ fieldwork. To the extent possible, the indicators and baseline data will make full use of sex-disaggregated data and information.

**Labor laws.** The Government, through PMU, will ensure that civil works contractors comply with all applicable labor laws and related international treaty obligations, and do not employ child labor for rehabilitation and maintenance activities.

**Gender and development.** PMU will (i) encourage local contractors to employ 30% women in road rehabilitation and labor-intensive maintenance of selected national roads (including at least 75% of those employed in bioengineering activities), (ii) provide equal pay to men and women for work of equal type in accordance with national laws and international treaty obligations, and (iii) provide safe working conditions for both men and women workers. Specific provisions to this effect will be included in the bidding documents. PMU will be responsible for monitoring the employment targets for women by reviewing periodically the payroll statements of the construction contractors through the engagement of CARE Timor-Leste, and will reflect progress in achieving the employment targets for women in the project’s progress and completion reports.

**Health risks.** PMU will ensure that all civil works contractors engaged under the project participate in the HIV/AIDS prevention and road safety program in the construction campsites that will be funded under the project. Additionally, PMU will ensure that similar information on the risk of transmission of HIV/AIDS and other sexually transmitted diseases is disseminated to local communities in the corridors of influence, in coordination with national agencies working on this issue. PMU will include specific provisions to this effect in civil works contracts and will strictly monitor compliance through CARE Timor-Leste.
C. Overall Expected Poverty, Social, and Gender Impacts

With the above socially inclusive and gender-responsive design features, the project is expected to contribute to poverty reduction in the project area and the country by promoting economic growth through investment and road infrastructure improvement. Based on the poverty and social/gender analyses (Chapter III), the project will directly benefit road users (particularly the poor paying high transport costs, and vehicle operators and owners paying high operating costs), and the private sector as a whole. Upon completion, the project will have contributed to improvements in the villagers’ welfare by (i) providing mobility to isolated societies; (ii) easing access to market centers for food, education, and health services; (iii) promoting trading, and hence, cash crop cultivation; and (iv) reducing transport costs for the private sector.

The project will reduce poverty by providing villagers in the project area with immediate income-generating opportunities. The field consultations (Chapter II, Section B) confirmed the people’s strong desire to participate in the project as wage laborers during road rehabilitation, and their willingness to carry out community-based maintenance activities, including the labor-intensive maintenance and community empowerment initiative components (Sections B.2 and B.5). Overall, the project is estimated to benefit about 62,000 people, including 55,000 poor and 28,000 very poor. The national road rehabilitation project alone is estimated to benefit about 51,000 people, including 46,000 poor and 24,000 very poor.

Lastly, providing employment targets for project-related wage labor in the grant agreement and the necessary labor skills transfer for women (Section B.3) may serve as the first step toward involving more women in employment opportunities from which they have been traditionally excluded, such as the transport sector.
Successful Approaches in Designing Socially Inclusive and Gender-Responsive Transport Projects

The stakeholder consultations and data collection conducted by the feasibility study team (Chapter II), which formed the basis for the poverty and social/gender analyses (Chapter III), helped ADB successfully identify and incorporate socially inclusive and gender-responsive design features in the Timor-Leste Road Sector Improvement Project (Chapter IV). Based on the Timor-Leste experience, following are recommended approaches in designing socially inclusive and gender-responsive transport projects in Timor-Leste and other developing countries. Some are congruent to past international good practices (Chapter I).

A. Commitment to Social Inclusion and Gender Mainstreaming

There must be a shared understanding between ADB and the feasibility study team that social and gender concerns—rather than an “afterthought” component in project design—must be viewed as key objectives in the initial stages of project design so that the ensuing interventions are credible and effective. This lays the foundation for overall commitment up to project implementation.
B. Comprehensive Poverty, Social, and Gender Analyses

Rather than applying “new” methods to make the design of infrastructure projects more beneficial to the poor and marginalized groups (including women), this case study demonstrates that a rigorous poverty and social/gender analyses undertaken with the most appropriate and context-specific analytical tools and methods during project design can achieve those benefits. This is true as long as key design features are included in the legally binding project assurances.

During project identification, adequate poverty and social/gender analyses must be carried out to identify women’s needs and constraints in accessing basic social services (health care, education, water supply, and sanitation) and market and employment opportunities. A risk assessment of women’s vulnerabilities to resettlement, human trafficking, and health-related risks (including sexually transmitted infections and HIV/AIDS) must also be undertaken.

C. Need for Women’s Involvement in Road Infrastructure Governance

The preparation of infrastructure-related projects must ensure (i) integration of women’s needs and constraints, (ii) women’s involvement in the prioritization and design of the projects, and (iii) establishment of adequate modalities for women to participate in infrastructure-related decision-making processes and structures contributing to the operation and maintenance of community infrastructure. The adoption of women’s employment targets and/or quotas must be considered within infrastructure projects. Vocational training and skills transfer to women in the areas of maintenance and management of road-related infrastructure should be included in project design.
D. Engaging Men on Gender Issues and Concerns

Men and women often prioritize their needs differently. Men need to support changes in social conventions to encourage women to become more active and equal members of society. To avoid men viewing projects as a zero-sum game between themselves and women, a forum for discussion needs to be created to sensitize them to gender issues.

E. Encouraging Community Buy-in and Maximizing Stakeholder Consultations

Encouraging community buy-in and maximizing consultations with stakeholders are critical to socially inclusive and gender-responsive project design. Ways to increase consultation and participation include: (i) generating awareness of the project, (ii) involving the communities in selecting the roads to be improved, (iii) employing community members in labor-based road improvements and maintenance, and (iv) training community members on how to benefit from the improved roads. This last item includes agricultural extension services that show community farmers how to switch from subsistence crops to cash crops that can now be more cheaply transported to markets.

Community ownership also plays an important role in maintaining the infrastructure once the project has been completed. If communities see they have a stake in a project, there is a greater likelihood that they will value the infrastructure and continue to maintain it. Generating awareness of the project, including its requirements and benefits, engages communities and—combined with the other actions—can help them develop a sense of ownership of the project.

By engaging in a dialogue on road transportation sector policy and investments in Timor-Leste, ADB has shown its strong commitment to improve the road network and its management to spearhead development in Timor-Leste. This enabled the feasibility study team to expand the dialogue to social, poverty, and gender dimensions and impacts of road infrastructure.
F. Providing Innovative Options

The determination of ADB’s team leader to include innovative approaches to boost the social and gender impacts of road infrastructure investments is crucial for effective project design. The Vehicle Fleet Transformation Program of the Road Sector Improvement Project, designed by the feasibility study team, provides a good example of thinking outside the box on issues separate from the project at hand to meet long-term goals of poverty reduction and inclusive development. This program provides creative solutions to a number of issues related to road conditions, transport services, and maintenance in the context of poverty reduction, and inclusive development. More opportunities for buying and selling cash crops and other products that this program would foster leads to greater independence for women in female-headed households, and lessens the risks associated with vulnerable women and children being trafficked into bonded labor or sex work. Economic empowerment of the most vulnerable in society, which primarily consist of women and children, largely affects health and living standards and creates further opportunities for education. In addition, this proposed program draws on important lessons learned from other regional neighbors, such as the Philippines, that faced a similar situation after World War II.

G. Partnering with Local and International NGOs

Local and international NGOs working on the ground possess in-depth knowledge of local communities and have experience working with them. Working with local faith-based organizations also helps define culturally sensitive modalities to mitigate the risks of spreading STIs and HIV/AIDS resulting from increased traffic and connectivity.

Collaborating with the international NGO, CARE Timor-Leste, for the Road Sector Improvement Project’s community empowerment initiative offers an excellent opportunity to enhance project effectiveness by building on CARE’s expertise and relationship with communities. For the interventions, it has been important to leverage the innovative practices developed by community-based NGOs that have been working in Timor-Leste for many years.
H. Developing a Project-Specific Gender Action Plan

Gender action plans are critical to infrastructure projects to ensure that project benefits are geared toward women; and that gender-equitable advances are planned, implemented, monitored, and funded. While this was not done for the Road Sector Improvement Project, a project-specific gender action plan imposes a discipline on enforcing the gender-relevant policy actions agreed upon with the Government and Project Management Unit.
Conclusion: Lessons from Timor-Leste Transport Project for Future Transport Projects

Specific approaches to the feasibility study team’s stakeholder consultations and data collection efforts (Chapter II) proved to be effective in coming up with the poverty and social/gender analyses (Chapter III) of the Timor-Leste Road Sector Improvement Project. Based on such analyses and lessons from past infrastructure-related projects (Chapter I), ADB has incorporated these socially inclusive and gender-responsive features in the project (Chapter IV):

- vehicle fleet transformation program,
- labor-intensive maintenance,
- involvement of women,
- connection of rural areas with community-based initiatives,
- community empowerment initiative,
- budget allocation, and
- specific assurances.
In general, the following are the key approaches to best identify and incorporate the above socially inclusive and gender-responsive features into transport projects (Chapter V):

- commitment to social inclusion and gender mainstreaming;
- need for a comprehensive poverty, social, and gender analyses;
- ensuring women’s involvement in road infrastructure governance;
- engaging men on gender issues and concerns;
- encouraging community buy-in and maximizing stakeholder consultations;
- providing innovative options;
- partnering with local and international NGOs; and
- developing a project-specific gender action plan.

Being ADB’s first attempt to mainstream social and gender concerns in the design of infrastructure-related projects in Timor-Leste, the success of the initial project design phase of the Road Sector Improvement Project provides valuable lessons for other road and transport projects in Asia and the Pacific. The good practices culled from the project serve as guideposts that can be tailored to the country or region in which they are applied for future transport projects.
Community Empowerment Initiative

A. Scope

The three subcomponents of the community empowerment initiative component are: (i) sustainable rehabilitation and maintenance of rural feeder roads in one selected subdistrict, (ii) HIV/AIDS\(^1\) prevention and road safety programs along the project roads, and (iii) monitoring employment targets for women.

1. Subcomponent A: Sustainable Rehabilitation and Maintenance of Rural Feeder Roads

This subcomponent aims to empower local communities to ensure community-based, labor-intensive, and sustainable rehabilitation and maintenance of rural feeder roads in a selected subdistrict along the project road. It will support an integrated approach to community empowerment, and contribute to (i) reducing travel time; (ii) supporting basic needs for water supply, energy, and food security; (iii) ensuring uninterrupted access to basic social services (health care and education) and markets where local farmers can sell their products; (iv) promoting income-generating opportunities; and (v) ensuring the mitigation of HIV/AIDS and road safety risks associated with road construction.

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\(^1\) HIV/AIDS = human immunodeficiency syndrome/acquired immunodeficiency syndrome.
The subcomponent will support:

- participatory and gender-inclusive identification and selection of rural feeder roads to be rehabilitated under the project;
- training people in local communities (focusing on the poor, veterans, other disaffected stakeholder groups, and youth) on labor-intensive road rehabilitation and maintenance, combined with management and business skills transfer;
- training women (with focus on widows and women who are household heads) in bioengineering activities and agricultural extension services, combined with literacy, food nutrition, reproductive health and HIV/AIDS prevention, road safety management, and business skills transfer;
- rehabilitation of selected rural feeder roads that are required to directly connect to the project trunk roads; and
- design of gender-inclusive modalities to ensure sustainable maintenance of rehabilitated feeder roads.

Specific features of the subcomponent include:

- Consulting with the Ministry of Public Works (Timor-Leste)/Project Management Unit (MPW/PMU) and relevant central and district government agencies on the proposed subdistrict community empowerment initiatives.
- Selecting rural feeder roads to be rehabilitated from among those connecting rural communities to the main project roads to be rehabilitated or maintained under the other two project components.²
- Ensuring that quality road engineering assessment and detailed design for the rehabilitation of the rural feeder roads are carried out by recruiting national and/or international engineering consultants, as needed.
- Ensuring the effective involvement of women and women’s groups in the consultative process for identifying and selecting rural feeder roads to be rehabilitated under the project.
- Ensuring that vulnerable groups (veterans, the poor, youth, widows, and women heads of households, and other disaffected stakeholders)

² The selection procedures, actual selection, and length of the feeder roads will be done by mutual understanding between the international nongovernment organization and the Asian Development Bank.
are targeted for the skills transfer activities to be funded under the project.

- Organizing training and labor skills transfer activities so that they are appropriately timed and sequenced with the rural communities’ involvement in project activities.

2. Subcomponent B: HIV/AIDS Prevention and Road Safety

The international nongovernment organization (INGO) that will provide consulting services for the community empowerment initiative component would provide a broad range of HIV/AIDS and road safety awareness programs to target high-risk groups (e.g., local construction workers, long-distance drivers, and women in the construction campsites and corridors of influence). The programs will include: (i) publication of information, education, and communication materials on HIV/AIDS and reproductive health for illiterate communities; (ii) behavior-change communication on HIV/AIDS and reproductive health, including family planning; (iii) socioculturally sensitive condom awareness and availability in construction camps and corridors of influence; and (iv) dissemination of educational and advisory materials on road safety. Emphasis would be given to women’s effective involvement in the design and implementation of the program.

The Government of Timor-Leste’s commitment to ensure effective participation of construction workers at campsites in the HIV/AIDS prevention and road safety program to be funded under the project was covenanted in the Assurances section of the grant document (Chapter IV, Box 13).

3. Subcomponent C: Monitoring of Employment Targets for Women

In line with the project goal of promoting increased access by women to opportunities provided by road rehabilitation and maintenance, the INGO—in coordination with MPW/PMU—will be responsible for monitoring achievement of employment targets for women. This will encourage public works contractors to increase the percentage of women workers to 30% of wage laborers (including at least 75% women laborers for bioengineering activities). The Government of Timor-Leste’s commitment
to ensure the enforcement of specific employment targets for women is covenanted in the Assurances of the grant document.

**B. Monitoring Indicators**

The community empowerment initiative component would be monitored based on the following indicators:

- inclusion of women’s, veterans’ and other disaffected stakeholder groups’ in identifying and selecting rural feeder roads;
- achievement of employment targets for women workers;
- visits to health-care facilities and local markets;
- acquired labor skills in bioengineering activities, feeder roads built, and agricultural extension;
- acquired knowledge of (i) literacy, nutrition, reproductive health, and HIV/AIDS prevention; (ii) road safety, management, and business skills; and (iii) gender-inclusive modalities for sustainable maintenance of rural feeder roads.

Specific indicators will be established by mutual understanding between the INGO and the PMU, along with conditions that would enable the INGO to achieve the targets set through the indicators within the timeframe of the project and agreed-upon final budget.

**C. Implementation**

Consulting services will be provided during the 2 years of project implementation by an INGO with expertise in community-based and labor-intensive infrastructure development and service delivery in the project area. The integrated approach to community empowerment—connecting isolated communities to main roads, primary facilities, and markets, while providing skills necessary for economic activities and raising awareness on health- and safety-related issues—will bring significant benefits to participating communities as a whole, building upon extensive experience and demonstrated success of INGOs working in a selected district.

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3 The option of recruiting a domestic NGO instead of an INGO to implement the community empowerment component was initially considered. However, consultations with the umbrella organizations for, and actual meetings with Timor-Leste NGOs revealed that the domestic NGOs were not yet ready to take the lead in implementing this initiative. Most of them are very small, relatively newly founded organizations, and thus, lacked the experience needed to carry out the initiative. They also did not possess sufficient financial and human resources.
Appendix 1: Community Empowerment Initiative

Based on consultations conducted by the ADB fact-finding mission and feasibility study team, CARE Timor-Leste was recruited as the implementing INGO by direct selection. Drawing upon its extensive experience and lessons learned from its successful implementation of the Road Maintenance Program in Bangladesh (Chapter I, Section B), CARE will adhere to the following strategic considerations during the project implementation:

- formal and agreed-upon coordination and consultation mechanism with MPW/PMU, central and district/local governments, and other stakeholders;
- formation of a Project Advisory Committee consisting of key members from government and communities to provide overall guidance and direction to the project;
- selection of feeder roads among those connecting to the main project roads in a demand-responsive manner;
- engineering designs for rehabilitation and maintenance of feeder roads in a practical and cost-effective manner; and
- transparency and accountability in selecting poor and vulnerable communities and ensuring effective involvement of women and women-headed households, war veterans, youth, the poor, and other vulnerable groups, as identified, in all phases of the project design and implementation.

Broadly, the community empowerment initiative was designed in such a way that CARE would be required to affiliate with domestic NGOs. Establishing such working relationships will provide excellent capacity-building opportunities for the domestic NGOs. This is expected to contribute to successful provision of similar initiatives to local communities by helping the country develop a pool of more capable domestic NGOs.

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4 CARE was recruited through direct selection methods based on the following criteria: (i) long-term presence and credibility in working with local communities in districts adjacent to the project roads; (ii) demonstrated track record of involvement in community-based and labor-intensive infrastructure development and service delivery; (iii) involvement in promoting socioculturally sensitive HIV/AIDS and socially transmitted infection prevention and road safety in the project road areas; (iv) extensive experience in working with and strengthening the capacity of local NGOs in the project area; and (v) expertise in the proposed areas of agricultural extension services, food nutrition issues, and rural development in general.
Indicators for Ranking Districts for Survey Locations

A. Poverty Incidence/Concentration of the Poor

Since the social and poverty analysis components of the project emphasize achieving poverty reduction, the indicator showing the concentration of the poor is critical. The team identified the degree of food shortage (food security indicator)\(^1\) as a proxy for poverty incidence. The data are available at the suco (village) and district levels. The district-level data are reported as the percentage of sucos reporting families without sufficient food for at least 1 month out of the year. The average numbers of families with food security for the districts vary from as high as 39% of families in the Dili District to 10% in the Cova Lima District (Table A2.1).

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B. Suco Development Index

The Suco Development Index\(^2\) represents the levels of wealth, social services, and access in a composite form. These parameters show the relative socioeconomic development of each suco, with lower indices indicating lower levels of development. The indices are compiled at the suco and the district levels. Table A2.2 presents the districts in the order of their levels of development.

<table>
<thead>
<tr>
<th>District</th>
<th>Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dili</td>
<td>39</td>
</tr>
<tr>
<td>Oecussi</td>
<td>31</td>
</tr>
<tr>
<td>Lautem</td>
<td>26</td>
</tr>
<tr>
<td>Ermera</td>
<td>26</td>
</tr>
<tr>
<td>Bobonaro</td>
<td>25</td>
</tr>
<tr>
<td>Liquica</td>
<td>25</td>
</tr>
<tr>
<td>Manatuto</td>
<td>24</td>
</tr>
<tr>
<td>Baucau</td>
<td>24</td>
</tr>
<tr>
<td>Aileu</td>
<td>22</td>
</tr>
<tr>
<td>Viqueque</td>
<td>20</td>
</tr>
<tr>
<td>Ainaro</td>
<td>16</td>
</tr>
<tr>
<td>Manufahi</td>
<td>10</td>
</tr>
<tr>
<td>Cova Lima</td>
<td>10</td>
</tr>
</tbody>
</table>

\(^2\) See footnote 1.

C. Concentration of Strategic Crops

Coffee is one of the most important cash crops in Timor-Leste. Although it represents a great potential for economic growth and poverty alleviation, such potential is hampered by poor road conditions that makes it almost impossible for people to transport crops to markets. Because Timor-Leste’s coffee is mostly produced in the western part of the country, coffee buyers travel to the largest coffee-producing districts by truck. However, according to the study team’s interview with the Cooperative Café Timor, some roads are impassable, forcing sellers to hand carry coffee to the nearest points that can be reached by the buyers’ trucks. Three of these districts

Table A2:1 Families with Food Security

<table>
<thead>
<tr>
<th>District</th>
<th>Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dili</td>
<td>39</td>
</tr>
<tr>
<td>Oecussi</td>
<td>31</td>
</tr>
<tr>
<td>Lautem</td>
<td>26</td>
</tr>
<tr>
<td>Ermera</td>
<td>26</td>
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<tr>
<td>Bobonaro</td>
<td>25</td>
</tr>
<tr>
<td>Liquica</td>
<td>25</td>
</tr>
<tr>
<td>Manatuto</td>
<td>24</td>
</tr>
<tr>
<td>Baucau</td>
<td>24</td>
</tr>
<tr>
<td>Aileu</td>
<td>22</td>
</tr>
<tr>
<td>Viqueque</td>
<td>20</td>
</tr>
<tr>
<td>Ainaro</td>
<td>16</td>
</tr>
<tr>
<td>Manufahi</td>
<td>10</td>
</tr>
<tr>
<td>Cova Lima</td>
<td>10</td>
</tr>
</tbody>
</table>

Table A2:2 Suco Development Index

<table>
<thead>
<tr>
<th>District</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquica</td>
<td>38</td>
</tr>
<tr>
<td>Dili</td>
<td>46</td>
</tr>
<tr>
<td>Ermera</td>
<td>46</td>
</tr>
<tr>
<td>Manatuto</td>
<td>46</td>
</tr>
<tr>
<td>Bobonaro</td>
<td>48</td>
</tr>
<tr>
<td>Aileu</td>
<td>50</td>
</tr>
<tr>
<td>Oecussi</td>
<td>50</td>
</tr>
<tr>
<td>Viqueque</td>
<td>51</td>
</tr>
<tr>
<td>Baucau</td>
<td>54</td>
</tr>
<tr>
<td>Lautem</td>
<td>59</td>
</tr>
<tr>
<td>Ainaro</td>
<td>61</td>
</tr>
<tr>
<td>Manufahi</td>
<td>64</td>
</tr>
<tr>
<td>Cova Lima</td>
<td>65</td>
</tr>
</tbody>
</table>
(Bobonaro, Ermera, and Liquica) are also among the six poorest or least developed districts, and have high concentrations of sucos with severe food insecurity.

Another potential strategic crop to be considered is vanilla. Timor-Leste is one of the few countries where high-quality vanilla can grow, with a large potential for increasing cash income. In addition, coffee and vanilla thrive in similar climate conditions (although not all coffee-producing areas are suitable for vanilla production). It also could become an ideal alternative crop for farmers to grow as part of a diversification plan to manage risks better.

D. Concentration of Major Food Crops

Rice, maize, and cassava are among the most important food crops for local consumption in Timor-Leste. The data on the production of these crops are available only at the district level, and the large producers of these primary crops (in terms of total cereal equivalent tons) were given higher priority in the selection of the survey locations (Table A2.3).

E. Population Density

People, including the poor, are concentrated along the roads, and it is expected that population along any road section will include a large proportion of the poor. Therefore, the higher the population density, the more enhanced the poverty reduction impact of a road improvement project would be (i.e., improving a kilometer of road would impact a larger number of people in the areas with higher population concentrations). Thus, the population density of each district, estimates based on the preliminary 2004 Census data (Table A2.4), was included as one of the indicators to determine the fieldwork locations.

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5 At the time of survey location selection (March 2005), the latest available data on Timor-Leste’s population by district were the preliminary results of the 2004 Census. The 2004 Census data present considerable fluctuations in the population of each district compared to the 2001 Suco Survey—from a 3% increase in Baucau District to an almost 40% increase in Dili District. Therefore, while the 2004 Census data had not been finalized, they most likely provide the most accurate information available on the current population and its distribution.
### Table A2.3: Primary Crop Production

<table>
<thead>
<tr>
<th>District</th>
<th>Tons&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baucau</td>
<td>20,652</td>
</tr>
<tr>
<td>Bobonaro</td>
<td>19,960</td>
</tr>
<tr>
<td>Viqueque</td>
<td>18,454</td>
</tr>
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<td>Cova Lima</td>
<td>15,545</td>
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<td>Lautem</td>
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<td>Oecussi</td>
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<td>Ermera</td>
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<tr>
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<td>Manufahi</td>
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<td>Aileu</td>
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<td>Ainaro</td>
<td>2,091</td>
</tr>
<tr>
<td>Dili</td>
<td>1,473</td>
</tr>
</tbody>
</table>

### Table A2.4: Population Density

<table>
<thead>
<tr>
<th>District</th>
<th>Persons/km&lt;sup&gt;2&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dili</td>
<td>451</td>
</tr>
<tr>
<td>Ermera</td>
<td>138</td>
</tr>
<tr>
<td>Liquica</td>
<td>101</td>
</tr>
<tr>
<td>Oecussi</td>
<td>72</td>
</tr>
<tr>
<td>Baucau</td>
<td>70</td>
</tr>
<tr>
<td>Ainaro</td>
<td>67</td>
</tr>
<tr>
<td>Bobonaro</td>
<td>60</td>
</tr>
<tr>
<td>Aileu</td>
<td>51</td>
</tr>
<tr>
<td>Cova Lima</td>
<td>46</td>
</tr>
<tr>
<td>Viqueque</td>
<td>37</td>
</tr>
<tr>
<td>Lautem</td>
<td>34</td>
</tr>
<tr>
<td>Manufahi</td>
<td>29</td>
</tr>
<tr>
<td>Manatuto</td>
<td>20</td>
</tr>
</tbody>
</table>

<sup>a</sup> km<sup>2</sup> = square kilometer.

<sup>a</sup> The total production of rice, maize, and cassava expressed as total cereal equivalent.
Methodology to Determine Poverty Incidence

A. Defining the “Poor” and “Very Poor”

Considering that those people who cannot afford sufficient caloric intake are clearly living below the extreme poverty line, the feasibility study team first classified anybody who suffered food insecurity for 1 month or more as “very poor”. As those who are very poor are a sub-set of the “poor”, the poor were defined as those classified as very poor plus those whose per capita income and expenditures are both below the national poverty line of $15.44 per month after the team made appropriate adjustments to their reported incomes and expenditures (Figure A3).

B. Correcting Underreported Incomes and Expenditures

Because a large percentage of the local population are subsistence or near-subsistence farmers, a substantial portion of household food consumption comes directly from private plots and do not come from markets. This means that the incomes and expenditures reported do not consider such consumption in monetary terms, and the figures are most likely underreported.

To correct the likely underreporting of incomes and expenditures of those who consume agricultural products from their private plots, the study team used the (i) national poverty line of $15.44 per month per person as a guideline, and (ii) data obtained on the percentage of total household
Appendix 3: Methodology to Determine Poverty Incidence

Figure A3: The “Poor” and “Very Poor”

Surveyed Population

Those who do not fall in either of the two categories below

Those with both per capita income and expenditure below $15.44 per month

Those who suffered food insecurity of 1 month or more in past 12 months

Nonpoor (10%)

Poor (90%)

Very Poor (50%) [Sub-set of the poor]

food consumption satisfied by household agricultural production. Table A3 gives an example of adjusting a reported per capita income of $12.00 (A) of a person who also indicated that 50% (B) of their household food consumption comes directly from their private plots. This adjustment was made to each household sample responses showing reported income and expenditure to determine the incidence of poverty and extreme poverty, at the per capita level.

C. Determining Poverty Incidence

Based on the team’s expert judgment, fieldwork, and survey results, the “official” poverty incidence estimate of 40% was much too low. Following the method described, the team estimated that Timor-Leste’s poverty incidence was at least 90% and that approximately 50% of the total population was very poor.

The majority of the sample responses were collected from those households located along national roads, which are generally in much better condition than district roads and any feeder roads. These are areas where
residents have better access to markets and other economic centers than people living further. In addition, many households that were interviewed along national roads were located right along the roads, with the distance of only a few to a couple of hundred meters from the roads. The team observed during their field visits that, in general, living conditions become worse the further away households are from the national roads. This indicates that the actual poverty incidence—taking into consideration those remotely located further from both national and district roads—is likely to be even higher than the new estimates. During the surveys, the team observed many stunted, very thin children with swollen stomachs—evidence of malnutrition even along major national roads—and this also supports the estimate that poverty incidence is much higher than what was reported in 2001.1

1  This estimate is reinforced by the latest figures on food insecurity published by the Ministry of Agriculture, Forestry and Fisheries. The Priorities and Proposed Sector Investment Program report (p. 4) states that about 600,000 people suffer food insecurity at some time during the year. Considering that extreme poverty is typically defined by the food threshold of 2,100 calories per person per day, this implies that the incidence of extreme poverty could be as high as 60%.

Table A3: Sample Adjustment of Underreported Income and Expenditures

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income per capita (before adjustment)</td>
<td>HH consumption satisfied with HH production</td>
<td>National poverty line</td>
<td>Estimated food threshold (80% of poverty line)</td>
<td>Convert Item B into monetary terms</td>
<td>Adjusted income per capita</td>
</tr>
<tr>
<td>Reported</td>
<td>Reported</td>
<td>–</td>
<td>Item C x 0.8</td>
<td>Item B x Item D</td>
<td>Item A + Item E</td>
</tr>
<tr>
<td>$12.00</td>
<td>50%</td>
<td>$15.44</td>
<td>$12.35</td>
<td>$6.18</td>
<td>$18.18</td>
</tr>
</tbody>
</table>

HH = household, $ = US dollar, % = percent.

Notes:
- $12.00 (A) is the person’s income per capita before adjustment, and 50% (B) is the estimated percentage of the respondent’s household food consumption met by his/her household agricultural production.
- The national poverty line of $15.44 (C) is assumed the expenditure amount necessary for a person to purchase the minimum but sufficient amount of food plus basic household items. Of this amount, the team assumed that 80% is necessary for food, and the rest for basic household items. Thus, 80% of the national poverty line is considered as the food threshold, equivalent to $12.35 (D).
- The surveyed households’ estimated percentage of household food consumption that was met by household agricultural production, 50% (B), was converted into monetary terms for each sample by applying the food threshold, $12.35 (D). In this example, the estimated monetary amount equals $6.18 (E), which is derived by multiplying the food threshold by 50% or 0.5.
- The sum of the reported income per capita, $12.00 (A) and estimated monetary amount equivalent to the household consumption met by household agricultural production, $6.18 (E) is $18.18 (F). It is considered as the adjusted income per capita in this example.
Villagers’ Perspectives of their Poverty (Inputs to Social Analysis)

As part of the inputs to the social analysis, the following summarizes the villagers’ perspectives, obtained mainly through 11 focus group discussions with an average of 7 participants in each discussion, and 22 detailed household interviews.

A. Self-definition of the Poor and Better-off

When asked how they define the poor and the better-off in their village, the largest number of groups used as the top criterion the amount and quality of food a household can afford to eat (Table A4.1). Closely related to this food and nutrition measure, the villagers also mentioned poor health as one of the characteristics of the poor. Also important is one’s ability to afford higher education for children. These criteria are closely followed by the most visible material measures, such as condition of houses, number of livestock—in particular, large animals like buffalos—the amount of land for cultivation, and whether one owns vehicles and/or kiosks. In summary, the general picture of those who they think are better off are those who suffer no food insecurity and can afford better food, can afford to send their children to distant places for higher education, who live in houses that are in good condition, who own larger numbers of livestock, and who own vehicles and/or kiosks.
The fact that people identify whether one can eat or not as the top indicator of poverty or wealth indicates that the severe food insecurity—discussed earlier—is the key determinant of poverty. The condition of the houses people live in has been an issue of serious concern to many people, as many complained that their houses were damaged during the conflicts and still require repair.

People are well aware of the importance of education for their children’s future and education’s association with the level of well-being. Thus, most children in the villages are enrolled in school. Considering the income of the villagers, school fees and uniforms are expensive. Some poor villagers even cut their spending on other items and/or borrow money to pay for school tuition and uniforms. Each village normally has a primary school located within it, and children have reasonably good access to primary education. When it comes to pre-secondary school, however, each subdistrict center usually has only one such school. Normally, each district has a few secondary schools, but they tend to be concentrated in the respective district capitals or in major towns.

### B. Self-defined Causes of Poverty

People tend to see that the primary cause of poverty lies in the attitude of each individual. Many respondents stated that many rich people work hard and continue to do so because they do not want to fall into poverty. These respondents believe that they themselves can become better off if they do the same. Many do possess the desire to move upward and the willingness to work harder, yet they lack education and skills, resources, and access to income-generating opportunities. Their religion, however, emphasizes the

<table>
<thead>
<tr>
<th>Rank</th>
<th>Definition of “Better-off”</th>
<th>Number of Focus Groups (Total 11 groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Food and nutrition</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Ability to afford high levels of education for children</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Condition of the houses</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Number of livestock</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Size of land for cultivation</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Possession of automobiles and kiosks</td>
<td>4</td>
</tr>
</tbody>
</table>
dignity and high standing placed on the poor, and preaches that only the poor will reach paradise in the afterlife.

The attitude of individuals as the perceived number one cause of poverty is closely followed by the levels of education and skills people have. The villagers believe that low levels of education, or lack of it, and/or the lack of capacity are closely associated with poverty (Table A4.2). This belief is well reflected in their efforts to keep their children in school and their desire to provide their children with higher education.

Majority of the respondents are subsistence or near-subistence farmers who often do not have access to appropriate irrigation systems and cannot

<table>
<thead>
<tr>
<th>Rank</th>
<th>Causes of Poverty</th>
<th>Number of Focus Groups (Total 11 groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poor attitude by individuals toward work</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>Low levels of education, capacity, and skills</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Poor condition of land</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Status of ancestors—inheritance</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Lack of resources, such as money and animals, to do better in farming and other economic activities</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Lack of income-generating opportunities</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Household size (high-dependency ratio)</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Bad weather conditions</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Corruption and nepotism among officials at various levels</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>No cooperation between the nonpoor and the poor</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Lack of relatives from whom they can receive assistance</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>The 1999 conflict, which caused a large loss of resources</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Lack of expenditure planning</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Determined by God</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>High cost of ceremonial gifts</td>
<td>1</td>
</tr>
</tbody>
</table>
afford fertilizers. For them, the existing quality of the land they cultivate and the natural climate conditions are the largest determining factors of their living standard in the near future. Understandably, the respondents consider the poor condition of the land and bad weather conditions as among the reasons for poverty. Crop failure not only means they may not have anything to sell, but also they may not have sufficient food to consume the next season. At present, people do not have the resources to complement their farming activities, such as building/repairing irrigation systems or buying fertilizers.

People also see that the size of the households matters. They seem to recognize that it is more difficult to provide all children with the same levels of education when they have many children. However, what they mean by the household size is not only related to the number of children, but also the number of dependents in the households in general. In some villages, people identified very poor families as those with old couples without anybody else to support, and who have very few resources to support themselves with.

One group also cited spending on ceremonial occasions as one of the causes of poverty. In Timor-Leste, it is customary to give a large animal or other major gift on such occasions, such as funerals and weddings. Even the poor spend more than they can afford to save face—even if that means that later on they will not have sufficient food to consume.

C. Villagers’ Coping Strategies

The most common coping strategy of the villagers for income generation is to sell livestock when the need arises. Many indicated that they normally sell agricultural produce such as corn, beans, cassava, rice, potatoes, other vegetables, and fruits. However, when they do not have this produce to sell, they attempt to earn some income by selling animals.

In villages without drinking water supply systems, people walk to the closest river for water. In these villages, the villagers are much more concerned about the water supply than road conditions. During the dry season, the quality of water is acceptable according to the villagers. However, during the rainy season, people have to wait after the rain—that is, until the river clears—before they can draw water.

Those who live in villages without nearby health-care facilities are forced to walk or ride in small trucks and microbuses to go to the closest
health-care facilities. A couple of villages also had traditional practitioners, such as a traditional midwife to assist in the delivery of babies.

Because primary school fees and uniforms are expensive, the villagers have to find a way to fund their children’s education. When they do not have enough money, they cut expenditures on other items or borrow to pay for their children’s primary education.

D. Villagers’ Major Concerns

The poor condition of the roads (including the condition of feeder roads to farms, gardens, and other aldeias [hamlets]) and/or lack of good transportation systems were cited as major concerns in five out of nine focus groups (Table A4.3). This was followed by the lack of access to income-generating opportunities, which is closely associated with the existing poor road conditions that prevent easy access to market centers. Many consider lack of access to other primary facilities—such as water supply systems, health-care facilities, and schools—as a high-priority issue.

In a village near Ossu on Baucau-Viqueque Road (National Road A16), villagers were seriously concerned by the illegal occupation of land and houses. The village used to be occupied by a Muslim minority, but the latter fled during the 1999 conflicts, and Catholics have settled there. This has created land and house disputes.

Table A4.3: Major Concerns Cited by Villagers

<table>
<thead>
<tr>
<th>Rank</th>
<th>Major Concerns</th>
<th>Number of Focus Groups (Total 11 groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poor condition of roads and/or lack of good transportation system</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>Lack of access to income-generating opportunities</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Lack of water supply, Lack of health-care facilities in the village</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>Lack of good leadership at various levels, Access to education (affordability and physical distance), Disputes over land and houses</td>
<td>2</td>
</tr>
<tr>
<td>5</td>
<td>Unsatisfactory condition of local school facility, Bad weather conditions, Food insecurity, Poor housing conditions, Lack of electricity</td>
<td>1</td>
</tr>
</tbody>
</table>
Economic Benefit Distribution Analysis (Inputs to Distribution and Poverty Analysis)

The economic analysis of the project provides the basis for the distribution of benefits among different stakeholder groups. According to the project’s economic evaluation, the estimated economic net present value (ENPV) of the first-year project is $6.85 million over 20 years (limited to the national road rehabilitation component). This exercise also allows estimating the poverty impact ratio (PIR), defined as the percentage of the total ENPV and direct labor benefits that will accrue to the poor (details on the benefits and pitfalls of using PIR estimates are in Box A5).

The following parameters serve as the major determinants in distributing this ENPV: (i) proportion of the poor and the very poor in each of the identified stakeholder groups, (ii) traffic composition and use of each vehicle type by different stakeholder groups, and (iii) competitive conditions in the transport service sector.

The direct field observations and analysis of the data obtained through the small-sample surveys (Chapter II, Section B.3) are the bases for estimating the above parameters and the base case scenario (Table A5). The table includes two additional types of project benefits: “direct labor benefits” and “benefits to the economy”. It should be noted that these are not part of the ENPV of $6.85 million.
Appendix 5: Economic Benefit Distribution Analysis

The direct labor benefits are an estimate of the benefits that will accrue to the poor and other workers during project construction. It is estimated as a percentage of the project’s capital costs (labor costs are counted as costs in the economic evaluation, but “benefits” for the distribution and poverty analysis), taking into account the opportunity costs of the labor. Table A5 shows the estimated share of the labor costs that the poor will earn (70%). These earnings are included in the estimate of the PIR.

The total benefits of the project to the economy are estimated by applying a “Keynesian” type multiplier, estimated at 2.5 via expert judgment. This means that the strengthened road network is assumed to have direct, indirect, and induced effects amounting to

Box A5: Benefits and Pitfalls of Using PIR Estimates

The poverty impact ratio (PIR) is the estimated share of the project’s economic net present value plus direct labor benefits that will go to the poor from a given project. However, the key estimate of the project’s impact on the poor is the total value of the economic net present value expected to accrue to the poor. Moreover, the PIR can exceed one if the poor are receiving all or nearly all of the project’s benefits, while the nonpoor are paying for the project and receiving little or no direct benefit from it.

Estimating the PIR shows policy makers a measure of the risk facing the project that is independent of the rate of return. For example, a very high PIR compared to the poor’s share of regional or national income indicates that nonpoor stakeholders may object to the project because they pay for it but get only a small share of the project’s benefits. Conversely, if the PIR is substantially below the poor’s share of regional or national income, then the poor stakeholders may object to the project, and thus, block it because they are receiving a very small share of the benefits and paying a large share of the project’s cost.

The Asian Development Bank (ADB) used the PIR in the late 1990s and early 2000s. It then found that PIR were sometimes misinterpreted, overemphasizing and/or underrepresenting the project’s contribution to poverty reduction. Thus, PIR is no longer required as part of ADB reporting. However, as part of the poverty and social analysis (mandatory for every ADB loan), ADB is now doing ex-ante poverty impact analysis.
2.5 times the direct costs of the project. Thus, the project’s benefit to the economy in general is estimated to be $18 million, of which about $7 million or 40% are expected to accrue to the poor. This 40% share is based on the estimated share of the gross domestic product (GDP) that is earned or received by the lower 4 quintiles of the population. These benefits to the economy are not included in the estimate of the PIR.

In the baseline case of the project, the PIRs are expected to be about 20% of the total project benefits (excluding the benefits to the overall economy) that will be passed on to the poor and 7% to the very poor. A PIR of about 20% is low in that the project, without complementary actions, will pass only 20% of its net benefits to the poor, which is less than their share in the national economy (as represented by GDP).
### Table A5: Distribution of Benefits—Baseline Forecast

<table>
<thead>
<tr>
<th>Vehicle Class</th>
<th>Net Economic Benefits</th>
<th>Net Benefits Distribution</th>
<th>Other Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Percent (%)</td>
<td>$ million ($)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor</td>
<td>Very Poor</td>
<td>Non-poor</td>
</tr>
<tr>
<td>Passengers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motorcycles</td>
<td>2.90</td>
<td>0.20</td>
<td>0.05</td>
</tr>
<tr>
<td>Jeeps, 4WD, Pickups</td>
<td>34.30</td>
<td>2.35</td>
<td>0.00</td>
</tr>
<tr>
<td>Minibus</td>
<td>17.10</td>
<td>1.17</td>
<td>0.45</td>
</tr>
<tr>
<td>Large Bus</td>
<td>4.90</td>
<td>0.33</td>
<td>0.09</td>
</tr>
<tr>
<td>Light Truck</td>
<td>10.30</td>
<td>0.70</td>
<td>0.29</td>
</tr>
<tr>
<td>Passenger Total</td>
<td>-</td>
<td>4.75</td>
<td>0.90</td>
</tr>
<tr>
<td>Passenger Share (%)</td>
<td>69.30</td>
<td>-</td>
<td>12.90</td>
</tr>
<tr>
<td>Freight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Light Truck</td>
<td>10.30</td>
<td>0.70</td>
<td>0.04</td>
</tr>
<tr>
<td>Medium Truck</td>
<td>20.40</td>
<td>1.40</td>
<td>0.08</td>
</tr>
<tr>
<td>Freight Total</td>
<td>-</td>
<td>2.10</td>
<td>0.12</td>
</tr>
<tr>
<td>Freight Share (%)</td>
<td>30.70</td>
<td>-</td>
<td>1.70</td>
</tr>
<tr>
<td>Net Benefits Total</td>
<td>-</td>
<td>6.85</td>
<td>1.00</td>
</tr>
<tr>
<td>Share Net Benefits (%)</td>
<td>100.00</td>
<td>-</td>
<td>14.50</td>
</tr>
</tbody>
</table>

- **Benefits to Direct Labor and the General Economy**
  - Of these, Benefits to the Poor: 0.22
  - Of these, Benefits to the Poor (%): 70.00

4WD = four-wheel-drive vehicle, PIR = poverty impact ratio, ** = not applicable.
References


———. 2006. *Bangladesh Third Rural Infrastructure Development Project*. Manila: ADB.


About the Socially Inclusive and Gender-Responsive Transport Projects

The transport sector provides an example of a nontraditional channel to promote social, economic, and gender equity. This case study provides practitioners with effective analytical tools and methods that were used in the design of ADB’s Timor-Leste Road Sector Improvement Project to specifically benefit traditionally excluded and disadvantaged groups, such as women and the poor. As ADB’s first attempt to mainstream social and gender concerns in infrastructure-related projects in Timor-Leste, the success of the initial design phase of this project provides valuable lessons for other road and transport projects in Asia and the Pacific.

About the Asian Development Bank

ADB aims to improve the welfare of the people in the Asia and Pacific region, particularly the nearly 1.9 billion who live on less than $2 a day. Despite many success stories, the region remains home to two thirds of the world’s poor. ADB is a multilateral development finance institution owned by 67 members, 48 from the region and 19 from other parts of the globe. ADB’s vision is a region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life.

ADB’s main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance. ADB’s annual lending volume is typically about $6 billion, with technical assistance usually totaling about $180 million a year.

ADB’s headquarters are in Manila. It has 26 offices around the world and more than 2,000 employees from over 50 countries.