

## PROPOSAL FOR FINAL CONSIDERATION

### Project Fact Sheet

C92/C93 - Lao PDR - Lao PDR Road Sector Project II	
<b>Partner Agency</b>	World Bank
<b>Executing Agency</b>	Ministry of Public Works and Transport
<b>Sector</b>	Transport Policy and Administrative Management CRS code: 21010
<b>Country</b>	Lao PDR
<b>Budget</b> - NDF - Partner Agency - EIB - Lao Government - Lao Provinces - EU AIF	<b>USD 35 million plus EUR 36 million</b> EUR 11 million (EUR 5 million as grant, EUR 6 million as a loan) USD 25 million EUR 20 million (tbc) USD 7 million USD 3 million EUR 5 million (grant) (tbc)
<b>Project Period</b>	2016 - 2022
<b>Mode of Finance</b>	Parallel co-financing
<b>Previous Support to Country</b>	Credits: EUR 48.6 million; SDR 8.4 million Grants: EUR 2.3 million (and EUR 0.2 million from NCF)
<b>Rio Markers</b>	Mitigation: 0 Adaptation: 2
<b>Gender Marker</b>	1
<b>Climate Screening Satisfied</b>	Yes
<b>Processing Schedule</b>	Pipeline - June 2016 Final - September 2016

## **PROJECT SUMMARY**

### **Objective**

The overall project development objective is to improve climate-resilient road connectivity in selected provinces in Lao PDR. Being a land-locked country, the transport sector in Lao PDR is dominated by the road sector. The road network is highly susceptible to climate change impacts and the risk increases considerably under current climate change projections. The local transport infrastructure is particularly vulnerable to this threat as a result of generally low standards, lack of adequate maintenance, and technical designs that have not accounted for increased climate variability. The growing impacts of natural disasters have increased the pressures on the emergency repair budget. The importance of increased climate resilience for roads is now recognised by the government as a potentially significant factor in reducing the demand for emergency and repairs, spot improvements and periodical repairs, thereby easing the pressure on the budget.

At the institutional level, the sector faces important capacity gaps for effective sector financing, strategic planning, and the management of road assets resilient to climate change. Road maintenance and rehabilitation responsibility for provincial roads has been delegated to provincial governments, which need significant support to build capacity to manage this task properly. National roads are managed at the national level; also here the need for capacity building is great.

This project builds on the openly demonstrated proactive approach of Lao PDR in the climate change area. It is also a direct response to identified needs and priorities, and it will enable an effective utilisation of NDF's road transport experience gathered from the region and from other continents. The general program objectives to which NDF funding will contribute are: (i) improved climate-resilient road connectivity in selected provinces; and (ii) strengthened climate-resilient and efficient road asset management practices at national and provincial levels.

### **The following outcomes are expected**

- Provincial roads in the selected provinces are in good or fair condition, and more resilient to forecasted climate impacts over the coming ten-year period;
- Strengthened capacity in the road maintenance sector in terms of prioritising, designing and contracting for climate-resilient road maintenance;
- Increased focus on climate resilience in the transport sector, including through the development of a transport sector climate change action plan.

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## **ABBREVIATIONS**

ADB	Asian Development Bank
AIF	Asia Investment Facility
ASEAN	Association of Southeast Asian Nations
CRRAM	Climate Resilient Road Asset Management
DDIS	Detailed Design and Implementation Support
DPWT	Departments of Public Work and Transport
EIB	European Investment Bank
IDA	International Development Association
INDC	Intended Nationally Determined Contributions
JICA	Japan International Cooperation Agency
KfW	Kreditanstalt für Wiederaufbau
LRSP	Lao Road Sector Project
MOF	Ministry of Finance
MPWT	Ministry of Public Works and Transport
NDF	Nordic Development Fund
NRAM	National Road Asset Management
PBC	Performance-based Contracts
PPP	Public-private Partnership
RMF	Road Maintenance Fund
TA	Technical Assistance

## **1. INTRODUCTION AND PROJECT BACKGROUND**

This proposal seeks final approval for NDF financing consisting of a EUR 5 million grant and a EUR 6 million loan to the Lao PDF Road Sector Project II. The proposal builds on discussions between NDF, the Lao Government and the World Bank about the need to ramp up investments for climate-resilient infrastructure in line with the Intended Nationally Determined Contributions (INDC) formulated in preparation for the Paris climate agreement. Lao PDR is currently in the process of revising its INDC ahead of COP22, and the preparation of this project aims to have positive impact on the revision as well as on the implementation of the revised INDC. The activities suggested to be financed by NDF have been designed in close collaboration between the project stakeholders and will be implemented under the World Bank-coordinated Lao Road Sector Project II through parallel co-financing from NDF. The project builds on previous NDF support to the country, namely road transport sector loans extended during 1990-2004, as well as the recently completed comprehensive program to enhance Lao PDR's capacity to tackle climate change. That program made the recommendation that sector-specific action plans and standards for climate-resilient infrastructure should be developed. Through NDF's contributions to the design and the suggested financing, including the development of a transport climate change action plan, this project is a direct response to that recommendation.

## **2. RELEVANCE AND RATIONALE**

### **2.1. Project Relevance**

Lao PDR is one of ASEAN's most vulnerable countries to natural hazards with the highest 100-year Probable Maximum Loss relative to GDP (11.7%). Five major storms or tropical cyclones have affected the country over the past two decades. In 2009, Typhoon Ketsana resulted in estimated damages and losses of USD 58 million. In 2011, Typhoon Haima and Tropical Storm Nok-Ten caused damages of USD 138 million. In 2013, a series of storms caused extensive flooding affecting 350,000 people in 12 of the country's 18 provinces. Global and regional climate change projections suggest that natural disasters in Lao PDR are likely to intensify and become more frequent. The increase in intensity and in frequency of extreme events (primarily flooding and landslides) is expected to have implications for agriculture, food security, infrastructure and lives.

Being a land-locked country, the transport sector in Lao PDR is dominated by the road sector. The road network is highly susceptible to climate change impacts and the risk increases considerably if current climate change projections are taken into account. The local transport infrastructure is particularly vulnerable to this threat as a result of generally low design and construction standards that have not accounted for increased climate variability, and lack of adequate maintenance. The growing impacts of natural disasters have increased the pressures on the emergency repair budget. The importance of increased climate-resilience for roads is now recognised by the government as a potentially significant factor in reducing the need for emergency repairs, spot improvements and periodic maintenance, thereby easing the pressure on the budget.

At the institutional level, the sector faces important capacity gaps for effective sector financing, strategic planning, and the management of road assets resilient to climate change. Road maintenance and rehabilitation responsibility for provincial roads has been delegated to

provincial governments, which need significant support to build capacity to manage this task properly. National roads are managed at the national level, and also here the need for capacity-building is great.

## **2.2. Relevance to NDF's Mandate and Strategy**

The technical assistance (TA) funding will provide capacity building and project implementation support in terms of technical designs and works supervision. It will also contribute on a policy level to highlight climate change as an important factor in road infrastructure sustainability, and assist the government to face the increasing pressures that climate change impact puts on the transport infrastructure.

The Lao Government's willingness to take on a loan for climate change adaptation investments is part of the momentum of the Paris agreement, and marks a shift in developing countries' borrowing standards, showing clear buy-in to climate change adaptation. Lending as a tool to further increase the positive climate change impact of NDF funding is also innovative as it increases the number of financing tools available to NDF under the climate mandate, while showcasing lending as viable for climate change adaptation investments. The lending operation is well in line with the NDF Strategy and Business Plan, which both mention that NDF should explore other instruments and blended finance. Further, the project is in line with a number of NDF strategic focal areas:

**Catalytic role:** The NDF funding, in particular the loan for civil works, has already had impact as the World Bank and EIB are talking about climate-resilient roads and more active gender equality activities. In the early stages of preparation of this project, the World Bank did not include substantial climate issues. The NDF grant will set higher design standards while the NDF loan-funded civil works impact on the overall design quality of the program, as World Bank has said in discussions that they now aim to use the same design standards as NDF.

**Support for linkages between public and private sector:** Although not included in the project description above, as it is not directly affected by NDF funding, the World Bank is looking at the possibilities of preparing a public-private partnership (PPP) for one national road. PPPs will be more attractive to private sector investors, and easier to price for both sides, if resilient design standards can be proven to decrease the risk of damage from extreme, climate change-related weather events. Furthermore, the World Bank is piloting Performance-based Contracts (PBC) for road maintenance contractors, whereby the contractors agree to keep the road infrastructure in a certain condition for a certain period of time against a lump sum cost. This system involves the private sector more in the routine maintenance of road infrastructure, drawing on private sector resources while allowing for more climate-smart solutions from it. Such solutions, as well as the PBCs themselves, contribute to new **innovations**. The civil works based on modern designs will also provide relevant experience for national/regional private sector contractors.

**Identification of emerging climate change issues:** NDF has vast experience from climate-resilient road projects globally, as is confirmed by the interest of multilateral development banks and other actors to partner with NDF in such a project. Drawing on this experience, NDF has assisted and will continue to assist the World Bank and the Government of Lao



PDR to identify and address climate change issues in the road sector in Lao PDR, while further using the experience from this project in future road and other transport infrastructure projects. Design standard reviews and revision along with the data collection and development of vulnerability maps will forecast climate change-related impacts on the road infrastructure. While much research has already been done, context-specific forecasts may lead to further lessons learned and conclusions about emerging climate change issues.

### **3. THE PROPOSED PROJECT**

#### **3.1. Objectives**

The general program objectives to which NDF funding will contribute are: (i) improved climate-resilient road connectivity in selected provinces; and (ii) strengthened climate-resilient and efficient road asset management practices at national and provincial levels.

#### **3.2. Project Activities**

The Project will finance road maintenance works in six selected provinces in northern Lao PDR (Oudomaxay, Phongsaly, Houaphan, Xiengkhouang, Xayabouly and Bolikhamxay). The intention is to pilot climate-resilient and sustainable maintenance practices with the aim to roll this out in all 18 provinces in the country in the coming years. To this end, the Project also includes substantial TA and capacity-building to enhance planning and implementation of road maintenance and overall asset management.

The NDF grant will finance TA for Detailed Design and Implementation Support (DDIS), Climate Resilient Road Asset Management (CRRAM) and National Road Asset Management (NRAM). The World Bank and possibly the EU Asia Investment Facility (AIF) will provide additional TA funds.

The NDF grant will finance the following activities:

- a. Support to the Ministry of Public Works and Transport (MPWT) for: (a) development of a climate change action plan as described in Lao PDR's INDC; (b) participation in the cross-ministerial National Disaster Management Committee; and (c) improvement of national road asset management through the preparation of long-term road maintenance and improvement programs;
- b. Operationalisation of existing hazard maps by transforming them into practical vulnerability maps for use by engineers in planning of infrastructure maintenance or investments;
- c. Review and revision of current planning tools to include risk-based planning, by, among other things, identifying sections vulnerable to extreme weather. Such risk-based planning will be linked to the ICT systems which will be upgraded through a separate, IDA-funded TA;
- d. Support to annual field surveys for data collection and input in relevant tools for risk-based planning;

- e. Reviews of national design standards and guidelines in cooperation with other development partners in the sector (mainly ADB, JICA and KfW) to incorporate climate-resilience aspects<sup>1</sup>;
- f. Project implementation support to the MPWT and the six selected provinces, including design of maintenance works, procurement and contract management;
- g. Capacity-building of relevant stakeholders on climate-resilient design and maintenance, contract management and supervision, maintenance planning and prioritisation, data collection and analysis, etc.

The Terms of Reference for consultants to carry out the above work will include a training needs assessment to ensure that the capacity-building is well-coordinated, targeting identified needs.

The NDF loan funding will finance civil works for climate-resilient road infrastructure rehabilitation and maintenance. The NDF loan would finance road sections in the project provinces which have been identified as high priority for improving climate resilience.

### 3.3. Cost Estimates and Financing Plan

The total project financing requirements are estimated at USD 35 million and EUR 11 million (approximately USD 12 million), inclusive of price and physical contingencies. Table 2 shows the current project financing. Under the program, the EIB and EU are anticipated to provide complementary financing in 2017 of EUR 20 million, and EUR 5 million, respectively. This is not reflected in the table below.

#### Project Cost and Financing

Project Component	Project Costs US\$ m	IDA US\$ m	NDF US\$ m	RMF US\$ m	Province US\$ m	NDF Financing (%)
Component 1: Climate Resilient Road Maintenance	36.4	17.4	9.0	7.0	3.0	25%
1.1 Climate Resilient Periodic Maintenance and Spot Improvement	20.7	14.2	6.5	0.0	0.0	
1.2 Routine Maintenance	13.0	3.0	0.0	7.0	3.0	
1.3 Design and Supervision	2.7	0.2	2.5	0.0	0.0	
Component 2: Institutional Strengthening	8.6	5.6	3.0	0.0	0.0	35%
Component 3: Project Management	2.0	2.0	0.0	0.0	0.0	0%
Component 4: Contingent Emergency Response	0.0	0.0	0.0	0.0	0.0	0%
Sub-total 1+2+3+4	47.0	25.0	12.0	7.0	3.0	
<b>Total Financing Required</b>	<b>47.0</b>	<b>25.0</b>	<b>12.0</b>	<b>7.0</b>	<b>3.0</b>	

<sup>1</sup> Consultants hired through ADB and JICA financed projects are currently reviewing national road maintenance design standards. This project will ensure that relevant climate aspects are taken into account.



The government funding will come from the Road Maintenance Fund (RMF), which was set up partly as a result of the project NDF352 and in cooperation with Sida. The RMF is financed from fuel levies; however, this revenue is not enough to cover the funding needs for road maintenance in the country. This project will further strengthen the role of the RMF by increasing its efficiency through better planning, as well as by reducing the unit cost of road maintenance.

The proposed NDF loan terms will include a maturity of 25 years with a grace period of five years, a service charge of 1.25% and a commitment fee of 0.5%, to start 18 months after the loan is signed. These terms are similar to those of the World Bank.

For reference, it can be mentioned that the indicative World Bank terms, as outlined in the draft grant agreement, will include a maturity of 25 years with a grace period of five years, a service charge of 0.75%, an interest rate of 1.25% and a commitment fee of 0.5%. As Lao PDR is now categorised as a “gap” country by the World Bank, what they call “blend terms” apply, which means that in addition to the most concessional IDA terms including only commitment and service charges, they also add interest. NDF cannot, according to its statutes, charge interest on sovereign loans, and therefore a service charge of 1.25% is proposed to stay in line with the new IDA terms for Lao PDR.

### **3.4. Nordic Interest**

NDF is closely involved in the development of the investment and the capacity development programs. In addition to increased focus on and financing for climate-resilience, NDF involvement has ensured that gender has a strong role and that indicators are in place which will actively seek to engage women in project implementation, e.g. through the employment of women for local routine maintenance. NDF will remain highly engaged throughout the implementation of the project to ensure that all relevant climate-resilience, gender and other aspects are followed through.

### **3.5. NDF's Added Value and Comparative Advantage**

NDF has significant global experience from the road transport sector, especially in terms of climate-resilience. NDF's added value and comparative advantage are based on the experience from funding climate change-resilient road infrastructure projects in various parts of the world and with various financing partners. This experience has been actively utilised in the design process of this project. NDF also has significant experience from providing credit for road infrastructure investments, including in Lao PDR. The pivotal role of the RMF in a future sustainable road maintenance scheme in Lao PDR points to the importance of the fund. This project allows NDF to work together with the RMF, MPWT, World Bank and other partners in further strengthening the role of the RMF in increasing the quality and climate resilience of the road infrastructure in the country, thereby building on previous NDF projects. The ability to couple TA grants with credit for physical investments also gives NDF

a very important role to develop and showcase climate change-resilient infrastructure solutions.

## **4. IMPLEMENTATION ARRANGEMENTS**

### **4.1. Technical Aspects**

The Project will finance climate-resilient periodic maintenance of 687 km of provincial and district roads in the six selected provinces. These roads will, once the periodic maintenance has brought them up to fair or good condition, be included in routine maintenance contracts funded under this project. The technical designs will aim to ensure that the roads receiving routine maintenance are resilient to forecasted climate impacts over a ten-year period. Furthermore, the issue of overloading (where Lao PDR roads are currently not built to ASEAN standards, and there is little control in practice) will be targeted through weigh stations, better information and capacity-building. The total length of the project roads, which at the end will be in fair or good condition and receive routine maintenance, is 2,856 km.

Lao PDR currently has tools for data collection and analysis for road maintenance planning and road asset management in place. These are the Provincial Roads Maintenance Management System (PROMMS) for provincial and district roads, and the Road Management System (RMS) for national roads. Work is currently being done to build on these in order to fully set up the Integrated Road Asset Management System (IRAM), which is a centralised web-based system used by MPWT for the whole process of road maintenance, from planning to implementation, including contract management, and follow-up.

### **4.2. Institutional Aspects and Project Organisation**

A consultancy firm will be contracted by MPWT for the DDIS, to assist with implementation of the civil works at provincial level. The World Bank will finance a project management support consultant as well as some other experts, including a procurement specialist, to assist MPWT with overall project implementation. Such experts will be contracted by MPWT and sit in the ministry full- or part-time, as necessary. In addition, a consultancy firm will be contracted by MPWT for the CRRAM, which includes significant capacity-building for climate-resilient road asset management, and for NRAM which will assist MPWT to prepare long-term sustainable road maintenance plans.

The Implementing Agency will be MPWT. Road maintenance and rehabilitation for provincial roads has been delegated to the Departments of Public Work and Transport (DPWT), i.e. the provincial departments of the MPWT, while national roads remain with the MPWT centrally.

The grant and loan will be provided as parallel co-financing with the World Bank. A Financing Agreement including both the grant and the loan will be signed with the Ministry of Finance (MOF), and a project-specific Memorandum of Understanding may be signed

with the World Bank. No formal relationship is foreseen with the EIB. The NDF grant-funded TA contracts will be signed between MPWT and the consultants.

NDF will disburse directly to contractors and consultants as per regular procedures.

#### **4.3. Procurement and Contract Structure**

The NDF grant will finance three consultancy contracts with firms (DDIS, CRRAM and NRAM), to be procured using the cost- and quality-based procurement method. Procurement of the DDIS consultant will begin before signing the financing agreements (advance procurement) to minimise delays. The same approach may be applied to the CRRAM and NRAM consultancy assignments. World Bank procurement guidelines will apply; however, NDF will do prior review for all three TA procurements.

Civil works will be procured and contracted by the DPWTs, using National Competitive Bidding as per Lao PDR procurement laws and procedures (for contracts estimated to cost between USD 200,000 and USD 2 million, above that International Competitive Bidding will be used). There are between 20 and 30 road construction companies registered in each province with different classes, (Class I, II or III) based on their financial and equipment capacity.

Prior review will apply to civil works contracts estimated to cost more than USD one million, and all documentation will likely be in the Lao language. The DDIS consultants will provide support throughout the procurement process, as well as with contract management. Invoices from contractors will be checked by the consultants, who will assist the DPWTs to perform acceptance checks and issue acceptance certificates before payment.

#### **4.4. Risk Analysis**

**Social and environmental risks:** The project has been categorised by the World Bank as A in the World Bank environmental assessment, meaning that it is by World Bank definition “likely to have significant adverse impacts that are sensitive, diverse or unprecedented.” Although this is generally not the case for road maintenance investments, the inclusion of a PPP study necessitates Category A. The project preparations therefore involve measures such as environmental and social impact assessments, an environmental and social monitoring framework, resettlement policy development, etc. NDF has participated in two project preparation missions, and been actively involved in safeguard monitoring during project preparation. The DDIS consultancy financed by NDF will include safeguard training for both DPWT staff and contractors. Social and environmental risks are medium to high, but are mitigated by existing World Bank safeguards and standard mitigation actions planned as part of these safeguards, as well as the training included in the TA.

**Financial risk:** As the loan will be sovereign, financial risk is small. The World Bank Cost-Benefit Analysis shows a good IRR for the project. Financial risk is low.

**Absorption risk:** The World Bank has provided capacity-building to the MPWT and other relevant stakeholders through the LRSP. The proposed project is well-balanced in that it will

provide substantial additional capacity-building, coupled with significant physical investment. With this well-balanced approach, and the TA provided for project implementation support, the absorption risk is estimated to be medium.

**Execution and integrity risk:** Corruption is widespread in Lao PDR, as in other countries in the region. Furthermore, the World Bank has determined that the transport sector is particularly vulnerable to fraud and corruption risks, and in 2011 it intensified investigation and enforcement efforts in the sector. The World Bank has significant experience from project implementation in Lao PDR. Furthermore, NDF has extended a number of credits to Lao PDR, including in the road sector, as well as two grants under the climate mandate, all with good results. World Bank safeguards as well as the NDF Anticorruption Policy apply, and with close monitoring coupled with significant project implementation support from NDF and World Bank, execution and integrity risks are seen as medium. Post review will apply to civil works contracts estimated to cost less than USD one million, which adds to procurement risk. This will be mitigated by the support of the DDIS consultants as well as the involvement of the local World Bank procurement specialist.

#### **4.5. Monitoring and Evaluation**

Monitoring and evaluation will be done for the whole project as one, i.e. not specifically for NDF-financed components. The Monitoring and Evaluation Framework in Appendix 1 has been agreed between the World Bank, NDF and MPWT, and will be followed closely by NDF and the World Bank. NDF will follow the implementation continuously, including through monitoring missions. MPWT and consultants will report periodically to NDF and the World Bank. Both financial and technical audits will be done on the full project; no specific auditing will be done on NDF-financed components. NDF may, however, carry out independent evaluations of the project or specific components.

As this project will include both grant and loan finance, NDF may engage in supervision at least twice each year for the first two years, to ensure smooth implementation of both TA and civil works contracts.

### **5. ECONOMIC AND SOCIAL ASPECTS**

#### **5.1. Economic Justification**

Lao PDR presently spends large amounts on emergency repair of roads, while relatively little goes to routine maintenance. This is partly because much of the road network is too dilapidated to be suitable for routine maintenance, partly because there is limited understanding of the cost savings and other benefits that arise from good, climate-resilient road maintenance planning and the execution of routine maintenance. By bringing more of

the road network up to a maintainable standard, and strengthening the quality of routine maintenance planning and contracting, it is expected that running costs for the road network will decrease significantly. The table below shows a summary of the economic analysis made by the World Bank.

**Table 3. Summary of Economic Analysis**

	<b>EIRR</b>	<b>NPV</b>
Base Case	38.92%	9.08
Investment cost increases by 20%	17.08%	2.21
Length of road reduced by 20%	19.27%	2.59
Share of population affected reduced by 50%	21.84%	3.56
AADT <sup>2</sup> reduced by 20%	25.71%	4.80

EIRR is calculated to be 38.92% and NPV USD 9.08 million with a 12% discount rate (standard discount). The sensitivity analyses on various assumptions are illustrated in the table.

## **5.2. Environmental and Social Aspects**

The project has been categorised by the World Bank as A, meaning that it is by World Bank definition “likely to have significant adverse impacts that are sensitive, diverse or unprecedented.” The project preparations therefore involve measures such as environmental and social impact assessments, an environmental and social monitoring framework, resettlement policy development, etc. Relevant World Bank safeguards apply to the project, which will also be reflected in NDF’s financing agreement with the Government of Lao PDR.

Gender markers have been included in the project to ensure, among other things, that women benefit from the employment opportunities that arise. Data will be collected in order to measure the impact in terms of access to services such as health care, education, markets, etc. If possible, such data will be disaggregated by gender.

## **6. CONCLUSION**

Road maintenance, both routine and periodic, including spot improvements and rehabilitation of road sections, is important in order to maintain a certain level of road quality while keeping costs down. Once roads deteriorate to a certain level, the cost of bringing them back up to a maintainable level is high. In a climate-sensitive country such as Lao PDR, it is also very important that the road infrastructure is as climate-resilient as possible given budgetary and other constraints. While the direct benefits of the project will include bringing the provincial road infrastructure in the selected provinces up to a maintainable standard and thereby bringing running costs down for maintaining the roads, even more important benefits

<sup>2</sup> Annual Average Daily Traffic

are foreseen to be the demonstration effect and the capacity-building at the central level. The proposed project will therefore increase the quality of the provincial and national road networks while making such maintenance more affordable.

## 7. RECOMMENDATION

***The Board approved loan financing of up to EUR 6 million and grant financing of up to EUR 5 million to the project C92/C93 - Lao PDR - Lao PDR Road Sector Project II***

Helsinki, 7 September 2016



Pasi Hellman

Managing Director



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## Annex 1 - Project Results Matrix

### Project Development Objective(s)

#### PDO Statement

The project development objective (PDO) is to strengthen maintenance systems to improve reliable road connectivity in Lao PDR and, in the event of an Eligible Crisis or Emergency, to provide immediate and effective response.

### Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values				
		YR1	YR2	YR3	YR4	End Target
Roads in good and fair condition as a share of total classified roads (Percentage) (Core)	50	50	55	60	65	70
Share of rural population who live within 2 km of an all-weather road	TBC	TBC	TBC	TBC	TBC	TBC
Direct project beneficiaries (number), of which are female (percentage)	0	0	300,000 (50%)	700,000 (50%)	1,000,000 (50%)	1,600,000 (50%)

### Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values				
		YR1	YR2	YR3	YR4	YR5 End Target
RMF budget allocation based on 3-year rolling plan incorporating the climate-resilience dimension (Yes/No)	No	No	Yes	Yes	Yes	Yes
Length of road receiving climate-resilient periodic maintenance (Km) (Cumulative)	0	0	262	525	687	687
Length of road receiving routine maintenance (Km)	0	0	2,169	2,432	2,694	2,850
Share of women participating in paid routine maintenance work (percentage)	0	0	10	15	20	20
<b>Citizen Engagement</b>						
Grievances registered related to delivery of project benefits that are actually addressed (Percentage) - (Core)	0	0	75	80	85	90



## Indicator Description

Project Development Objective Indicators				
Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Roads in good and fair condition as a share of total classified roads (percentage)	Measures the percentage of the total classified road network in the project area that is in good and fair condition depending on the road surface and the level of roughness.	Annual	Project Annual Report	DoR/DPWT
Share of rural population who live within 2 km of an all-weather road	Measures the percentage of the population in the project area living within 2 km of an all-weather road.	Annual	Project Annual report	DoR/DPWT
Direct project beneficiaries	Direct beneficiaries are people or groups who directly derive benefits from an intervention (i.e., children who benefit from an immunisation program; families that have a new piped water connection). Please note that this indicator requires supplemental information. Supplemental Value: Female beneficiaries (percentage). Based on the assessment and definition of direct project beneficiaries specify what proportion of the direct project beneficiaries are female. This indicator is calculated as a percentage.	Annual	Project Annual Report	DoR/DPWT/DPC
Female beneficiaries	Based on the assessment and definition of direct project beneficiaries, specify what percentage of the beneficiaries are female.	Annual	Project Annual Report	DoR/DPWT/DPC
Intermediate Results Indicators				
Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
RMF budget allocation based on 3-year rolling plan incorporating the climate resilience dimension (Yes/No)	Measures improvements in RMF allocation based on PROMMS system integrating climate resilience dimension.	Annual	Project annual report	DoR
Length of road receiving climate-resilient periodic maintenance (Km) – (Cumulative)	Measures the length of provincial and district roads in the project area that receive periodic maintenance integrating designs and techniques that account for disaster and climate change risk to enhance the roads' climate-resilience.	Annual	Project annual report	DoR/DPWT

Length of road receiving routine maintenance (Km)	Measures the length of provincial and district roads in the project area that receive routine maintenance.	Annual	Project annual report	DoR/DPWT
Share of women participating in paid routine maintenance work (percentage)	The project will promote and measure the increased participation of women in paid routine maintenance in project roads.	Annual	Project annual report	DoR/DPWT
Grievances registered related to delivery of project benefits that are actually addressed (Percentage) - (Core)	IDA Citizen Engagement Indicator. This indicator will monitor the success rate for resolving registered grievances on the project.	Annual	The project will introduce a grievance response mechanism to monitor resolution rates.	DOI/PTRI/ICT