

PROPOSAL FOR FINAL CONSIDERATION

Project Fact Sheet

C110 - Lao PDR - National Road 13 North - Climate Resilient Upgrade and Maintenance	
Partner Agency	World Bank
Executing Agency	Ministry of Public Works and Transport
Sector	Transport policy and administrative management CRS Code: 21010
Country	Lao PDR
Budget - NDF - Partner Agency - AIIB - Government of Laos	~ USD 128 million USD 9.9 million ¹ USD 40 million USD 40 million USD 38 million
Project Period	2018 - 2023
Mode of Finance	Parallel co-finance (loan funding)
Previous Support to Country	Credits: EUR 54.6 million; SDR 8.4 million Grants: EUR 7.3 million
Rio Markers	Mitigation: 0 Adaptation: 2
Gender Marker	1
Climate Screening Satisfied	Yes
Environmental and Social Policy	The investment complies with the Environmental and Social Policy. The risk level has been assessed to “High” due to the resettlement of affected people (2,398 households affected). No qualifications. Monitoring: Yes, verification of compliance with the World Bank OP/BP 4.12 and table 1-1 in the Resettlement Action Plan.
Processing Schedule	Pipeline - November 2017 Final - March 2018 Signature - April 2018 Effective - May 2018

¹ The current EUR/USD rate is 1.24. NDF will commit EUR 8 million.

PROJECT SUMMARY

NDF concessional loan EUR 8.0 million

Project Period: 2018–2023

Partner Agency: World Bank

Implementing Agency: Ministry of Public Works and Transport

Objective

The project builds on discussions between NDF, the Lao Government (GOL), the World Bank and the Asian Infrastructure Investment Bank (AIIB) about the need to ramp up investments for climate-resilient infrastructure in line with the Nationally Determined Contributions (NDC) formulated in preparation for the Paris climate agreement. The proposed activities to be financed by NDF have been designed in close collaboration between the project stakeholders and will be implemented under the World Bank-coordinated project through parallel co-financing from NDF. The NDF-funded activities have been selected with a view to mainstream climate resilience in the project while at the same time taking into consideration factors such as project implementation timing, cost and affordability.

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. Through the on-going LRSP2 project, NDF is supporting substantial capacity development as well as design standards and maintenance planning tools for both provincial and national roads. However, the civil works in that project focus only on provincial roads.

Through this proposed project, proper climate resilience planning, design and works will also be applied to the most heavily trafficked and important national road in the country. The project will use Output and Performance Based Road Contracts (OPBRC) with greater involvement, including financing and risk-taking, of the private sector, as well as lending for climate resilience technical assistance.

The general objectives to which NDF funding will contribute are improved and climate resilient road services and improved road safety on the most heavily trafficked part of National Road 13. The target is that the road will be accessible all year and that floods will not fully stop traffic at any point or during any time along the project road. This will be achieved through a mix of climate-resilient design and construction, and climate-resilient performance-based maintenance.

Given the importance of the road section and the number of people living and working alongside the road, NDF has engaged closely with the government, the World Bank, AIIB and other stakeholders. This broad engagement ensures not only that environmental and social issues are considered from a risk mitigation perspective, but also that positive benefits of the works are realised wherever possible. In addition, gender considerations are fully taken into account in the planning and execution of works because of the participation of a wide range of stakeholders.

According to the World Bank's assessment and estimate, it is expected that the overall project will reduce CO₂e emissions by 188,137 tonnes over a 13-year evaluation period. It should be noted that NDF considers this an adaptation project and does not include mitigation in its Rio marker reporting.

The following outcomes are expected

- All year access to the project road (most heavily trafficked road section in Lao PDR) through climate-resilient design, construction and maintenance.
- Increased capacity among stakeholders, most notably the Ministry of Public Works and Transport and local/regional contractors, on climate-resilient design, construction and maintenance as well as on Output and Performance Based Contracts (OPBRC).
- Successful piloting of OPBRCs allowing more private sector participation in infrastructure investments.
- Improved maintenance standards and processes allowing for better national road infrastructure asset management and thereby increasing the efficiency of expenditures allocated for maintenance and operation.

Financing

The total project cost estimate is USD 128 million. NDF is providing almost USD 10 million in loan while the World Bank provides USD 40 million, AIIB USD 40 million and the government USD 38 million.

The World Bank approval is expected on 23 May 2018 and the AIIB approval in August 2018. The Government has confirmed its project funding for 2018 already.

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ABBREVIATIONS

AIIB - Asian Infrastructure Investment Bank

E&S - Environmental and Social

EIRR - Economic Internal Rate of Return

GOL - Government of Lao PDR

INDC - Intended Nationally Determined Contributions

LRSP2 - Lao Road Sector Project 2

M&E - Monitoring and Evaluation

MOF - Ministry of Finance

MONRE - Ministry of Natural Resources and the Environment

MPI - Ministry of Planning and Investment

MPWT - Ministry of Public Works and Transport

NDF - Nordic Development Fund

OPBRC - Output and Performance Based Road Contract

PAP - Project Affected Person

QCBS - Quality and Cost Based Selection

RAP - Resettlement Action Plan

SDG - Sustainable Development Goal

TOR - Terms of Reference



1. INTRODUCTION AND PROJECT BACKGROUND

1.1 Introduction

The following proposal seeks final approval for NDF financing consisting of an EUR 8 million concessional credit to the *National Road 13 North - Climate Resilient Upgrade and Maintenance Project*. The proposed Project builds on discussions between NDF, the Lao Government (GOL), the World Bank and the Asian Infrastructure Investment Bank (AIIB) about the need to ramp up investments for climate-resilient infrastructure in line with the Nationally Determined Contributions (NDC) formulated in preparation for the Paris climate agreement. The proposed activities to be financed by NDF have been designed in close collaboration between the project stakeholders and will be implemented under the World Bank-coordinated project through parallel co-financing from NDF.

1.2 Project Background

The proposed project builds on previous NDF support to the country, namely the Lao Road Sector Project 2 (LRSP2) approved in 2016 (grant and loan), other road transport sector loans extended to Lao PDR during 1990-2004, and the recently-completed comprehensive programme to enhance Lao PDR's capacity to tackle climate change. One of the outcomes of this programme was the recommendation that sector-specific action plans and standards for climate-resilient infrastructure should be developed. Through NDF's contributions to the climate-resilient design and the suggested financing, this project is a direct response to that recommendation. The importance of increased climate resilience for roads is now recognised by the government as a significant factor in reducing the demand for emergency repairs, thereby easing the pressure on the budget, as well as reducing disruptions and allowing for all-weather access to services which contributes to economic growth and social development.

The project also builds on NDF's extensive experience from road and other transport projects globally, where NDF has been at the forefront of climate-resilient infrastructure in cooperation with its financing partners.

At the institutional level, the road transport sector faces important capacity gaps for effective sector financing, strategic planning, and the integration of climate change resilience into management of road assets. Through LRSP2, NDF is supporting substantial capacity development as well as revision and upgrading of design standards and maintenance planning tools for both provincial and national roads. However, the civil works in that project focus only on provincial roads. Through this project, best-standard climate resilience planning, design, works and maintenance will also be tested on the most heavily trafficked and economically most important national road in the country. The project will also pilot Output and Performance Based Road Contracts (OPBRC) with greater involvement of the private sector, as well as lending for climate resilience technical assistance.

2. RELEVANCE AND RATIONALE

2.1. Project Relevance

Lao PDR is a landlocked country heavily dependent on road transport for its economy; both in terms of imports, exports and as a trade hub between China, Thailand and Vietnam. With its seasonal weather which includes dry, wet and flood seasons, the country's infrastructure is

often put under severe strain. Roads are affected by, among other things, flash floods, back floods, extended dry and hot periods, and land/mud slides. This limits people's access to crucial services such as health care, education, markets, etc., which in turn impacts negatively on economic growth and social development. Women and girls are often particularly affected by, for example, the lack of access to health care, child care services and education given the more limited options that still exist for women in Lao PDR.

Poorly constructed and maintained infrastructure often impacts negatively on environmental and social factors such as watersheds, increased flooding due to lack of water run-off possibilities, as well as road safety, air quality in congestion zones, and use of potential agriculture and other valuable land for road infrastructure.

This project builds on the openly demonstrated proactive approach of Lao PDR in the climate change area. It is 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 globally.

2.2. Relevance to NDF's Mandate and Strategy

The project will provide financing, capacity-building and support for climate-resilient and sustainable infrastructure. It will also contribute on a policy level to highlight climate change as an important factor in road infrastructure sustainability and assist the government in facing the increasing pressures that climate change impact puts on the transport infrastructure. NDF's participation enhances the quality and focus on climate change. By ensuring that high quality climate resilience activities are mainstreamed in the project, NDF is **catalysing** climate resilience in an important sector for Lao PDR, where forecasted climate change weather events will impact very negatively on a large part of the population. The NDF funding will also include **project preparatory funding** for the next stages of climate-resilient upgrade and maintenance of other parts of National Road 13, ensuring climate resilience in future investments also.

The project will use OPBRCs for contractors, which require significant private sector buy-in and thereby provide **support for linkages between public and private sector**. Contractors take on much of the risk and often provide financing up-front. OPBRCs provide for better maintained roads at lower cost and contribute significantly to capacity development of local and regional contractors. This will be the first OPBRC on a larger scale in Lao PDR, bringing that **innovation** to a new segment of road infrastructure.

The GOL's willingness to take on a loan for climate adaptation investments is part of the momentum of the Paris agreement, showing clear buy-in to climate change adaptation. It warrants a special mention that GOL is now also borrowing for technical assistance to tackle climate change issues. The NDF financing showcases lending as viable for climate change adaptation investments.

NDF has worked and continues to work with the World Bank and AIIB on appropriate gender equality activities and indicators. The activities and indicator on pedestrian access is related directly to gender impact as a study has shown that the vast majority of female road users are pedestrians, and activities are being put in place to directly benefit those women. NDF continues to discuss additional gender indicators during both project appraisal and implementation. The TOR for the NDF-financed consultants will include wording on continuously working to identify additional measures to promote gender equality.

The proposed loan would contribute to SDG Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure.

3. THE PROPOSED PROJECT

3.1. Objectives

The general objectives to which NDF funding will contribute are improved and climate-resilient road services and improved road safety on the most heavily trafficked part of National Road 13. The target is that the road will be accessible all year and that floods will not completely disrupt traffic at any point or during any time along the project road. This will be achieved through a mix of climate-resilient design, construction, and maintenance.

Given the importance of the road section and the number of people living and working alongside the road, NDF has engaged closely with the government, the World Bank, AIIB and other stakeholders. This broad engagement ensures not only that environmental and social issues are considered from a risk mitigation perspective, but also that positive benefits of the works are realised wherever possible. In addition, gender considerations are fully taken into account in the planning and execution of works because of the participation of a wide range of stakeholders.

The project will also provide significant capacity building through on-the-job training, the introduction of OPBRCs on a larger scale, and the environmental and social planning and implementation that goes along with the project.

3.2. Project Activities

The project will finance the construction and maintenance of 58 km of climate-resilient national road from northern Vientiane to Phonhong. Today the road on this most heavily trafficked road section in Lao PDR is two-lane asphalt with low climate resilience, lacking road safety infrastructure and sections of heavy congestion at peak travel times. The project will construct a climate-resilient road (cement concrete paving) where the design takes into account especially vulnerable sections, for instance, those sections where flooding is recurring and expected to increase as a result of climate variability and climate change. The preliminary design is based on vulnerability mapping and includes measures such as improved drainage, elevation, and bioengineering on such parts of the road. The detailed design will be developed with the support of NDF-funded consultants to ensure that international best-practice in terms of climate resilient road infrastructure is applied.

The most heavily trafficked part of the project road will be broadened from 2 to 4 lanes to decrease congestions, thereby reducing CO₂ emissions and improving air quality while further improving accessibility even under difficult weather conditions.

As part of the project implementation, capacity will be built in the Ministry of Public Works and Transport (MPWT), among contractors and other relevant stakeholders. The NDF-funded consultants will provide on-the-job training on, among other things, climate resilience, including the application of the climate change adaptation strategy and planning tools developed as part of the NDF-funded components under LRSP2. This training will enable the ministry to make progress in adaptation and improve their preparedness for climate change. The aim is to have MPWT and its Department of Roads continue to provide services effectively and sustainably as the climate changes. This includes elements of: Robustness -

the ability to resist disruption; Redundancy - the ability to use backup facilities to provide service during disruption; and Recovery - the ability to rapidly return to service after disruption.

NDF will specifically finance the design, implementation and supervision consultants, and part of the resettlement activities. The technical assistance is where NDF ensures that climate resilience, gender and other aspects of particular importance to NDF and which have been included in the project design and agreed with GOL, World Bank and AIIB, are implemented and “followed through.” When the project was initially being planned by the GOL and the World Bank, it was designed as a more typical road infrastructure project not adequately taking into account climate resilience (in NDF’s view). Once NDF was asked by the World Bank and GOL to participate in the project, NDF took the position that in a project financing 58km of economically very important road, the entire stretch should be climate proofed, rather than only including certain climate components or pilot interventions along the road. After some discussion, the World Bank and GOL agreed, and once AIIB got involved they expressed great satisfaction with this approach. Therefore, it was agreed that the early designs should look at vulnerability mapping and include climate resilience measures as and where necessary along the entire stretch of road, and that the existing paving should be removed and replaced with concrete pavement to properly withstand climate-related adverse weather impacts in a longer forecasting period.

Based on the agreed “mainstreaming” of climate resilience throughout the project, which is supervised through the NDF-financed design, implementation and supervision consultants, NDF has agreed to shift the remaining funding to resettlement issues instead of the previously planned civil works. NDF funding, along with part of the GOL budget (for 2018) will be available earlier than World Bank and AIIB funds. The NDF financing agreement will include cross-effectiveness with the World Bank Board approval which is expected on 23 May 2018; however, the World Bank financing agreement will include cross-effectiveness also with the AIIB funding which is expected to be approved in August 2018, and therefore NDF funds will be available earlier than the World Bank and AIIB funding.^{2,3} This way, by speeding up project implementation, the risk of (costly) project implementation delays will be minimised, thereby ensuring overall project implementation success and affordability. In Lao PDR, it is also important to take into account rain and flood seasons during which civil works can generally not be done.

An international resettlement consultant will be contracted to assist the government in the implementation of the Resettlement Action Plan (RAP; the TOR have been reviewed by NDF and assessed to be well-prepared) to ensure safeguards and social issues are properly handled. The consultant will report to AIIB with copy to NDF and GOL to ensure that NDF is kept well-informed of the progress of resettlement. NDF joined the AIIB and World Bank E&S specialists on a field mission that included discussions with project affected persons and one

² The NDF funding will include a cross-effectiveness clause with the World Bank funding approval to ensure that no NDF funds are disbursed before the full project financing has been approved by all parties. The GOL has sent a formal letter to World Bank, AIIB and NDF committing the GOL counterpart funding for the project.

³ The AIIB funding for the RAP consultants will come as grants from a TA grant fund within the bank, and follows a separate approval process. The RAP consultancy funds are expected to be available in May 2018, allowing the resettlement work to start in May or June and use NDF funding for the actual resettlement payments. The aim is to have most of the resettlement work done by the time the World Bank and AIIB loan funds for civil works are available.

resettlement committee. Project Affected Persons (PAPs) have been informed and the resettlement committees have experience from earlier projects. The resettlement will be conducted as per usual procedures in World Bank projects, i.e. the government is responsible for resettlement payments through local resettlement committees, based on the RAP and other relevant safeguards documents and plans prepared by GOL in cooperation with, and approved by, the World Bank. Agreements will be entered into between the Lao authorities and the PAPs as per usual procedure. However, since NDF is co-financing the resettlement activities, NDF has insisted that an international consultant monitors the progress while providing on-the-job training to the relevant authorities.

The project also includes substantial road safety components.

3.3. Cost Estimates and Financing Plan

Table 1 below provides an overview of the total project costs and the sources of financing.

Table 1: Project costs and financing (USD)

Project Components	Project cost	IDA	AIB	NDF	Government
Component 1: Road Improvement and Maintenance	120.00	36.60	39.40	5.50	38.50
Subcomponent 1.1: Road improvement and maintenance	100.00	36.60	39.40	-	24.00
Subcomponent 1.2: Land acquisition	20.00	-	-	5.50	14.50
Component 2: Technical Assistance and Supervision	5.30	0.70	0.60	4.00	-
Subcomponent 2.1: Traffic Safety, Overloading Control and Safeguards Monitoring	0.70	0.70	-	-	-
Subcomponent 2.2: Climate resilience-focused implementation supervision	3.50	-	-	3.50	-
Subcomponent 2.3: Preparation of Future Climate Resilience Investments	1.10	-	0.60	0.50	-
Component 3: Project Management	2.70	2.70	-	-	-
Total Estimated Project Cost USD	128.00	40.00	40.00	9.50	38.50

3.4. Nordic Interest

Nordic consultancy firms are very strong in climate-resilient infrastructure. A number of Nordic firms have been contracted for climate change components that are funded by NDF globally as well as in Lao PDR, where Sweroad has an NDF-funded contract with MPWT under LRSP2. By strengthening the climate resilience aspects and promoting more modern, high-quality road infrastructure designs, NDF is also allowing for best-practice Nordic firms to propose innovative solutions to clients.

There is significant Nordic experience in climate-resilient transport infrastructure. All five countries have studied potential climate change impacts on their transport systems. Norway's XGEO tool allows real-time monitoring and forecasting of floods, landslides and avalanches that could affect transport systems. Denmark has the Blue Spot Model to assess flood risk which is now being utilised in Zambia as part of another NDF-financed transport and climate

project. Swedish, Danish and Finnish consulting companies have recently won international tenders for providing technical assistance to addressing climate change impacts in the transport sector in countries in Africa and Asia. Discussions are on-going between the GOL and the AIIB about potential co-financing to this project. The World Bank and NDF are well-informed of these discussions. The Nordic countries support the AIIB and this project allows NDF to collaborate with the bank.

3.5. NDF's Added Value and Comparative Advantage

NDF has been very active in the project design, to ensure among other things that climate resilience is mainstreamed. This involvement has been very successful; NDF has an excellent working relationship with the World Bank team in Lao PDR from the LRSP2 project and is included as a full partner of the project preparation team. This project will also allow NDF to co-finance with AIIB for the first time, and AIIB has expressed gratitude to NDF for its participation and focus on climate change and E&S issues.

NDF has significant experience from climate resilient road transport⁴ and other infrastructure projects globally, which has contributed significantly to the project design, and will continue to do so throughout implementation.

NDF will extend a concessional loan to make the project more affordable to the GOL, while at the same time increasing NDF's loan portfolio allowing for a reflow of funds for future climate financing. NDF's ability to provide affordable and high-risk financing through a set of financing instruments provides the possibility to be adaptive to needs in the global climate finance architecture.

4. IMPLEMENTATION ARRANGEMENTS

4.1. Technical Aspects

The road sector in Lao PDR is proactively developing its capacities to strengthen the climate resilience of the network, and this work is underway through the NDF co-financed LRSP2 on provincial and district roads. Through the proposed project, improved designs and standards being developed under LRSP2 will be scaled up to national roads. The NR13 project road will feature stronger bridges and drainage systems, raised profiles in flood-prone sections, stronger side ditches and a paved concrete surface to minimise the impacts of flooding. Care will be taken to ensure that the outflow of flood water from the road does not damage nearby fields. Bio-engineering and nature-based solutions will be explored, including grassing, tree planting and other types of slope protection.

The road design is based on a mapping of areas vulnerable to flooding. The design of bicycle and pedestrian lanes and crossings are partly based on gender data in order to maximise benefits for women who, along this road, make up a majority of users of such facilities. The first 19 km of road from Vientiane will be broadened from 2 to 4 lanes to improve road safety and reduce congestion, which will reduce GHG emissions, improve air quality and accessibility.

⁴ NDF: *The Road Ahead - Road Transport and Climate Change Adaptation: A Portfolio Review*. Helsinki 2015

The construction and maintenance will be contracted through an OPBRC. This type of contract increases the role of the private sector contractors not only in construction and maintenance, but also the financing and risk-taking. Payments are made based on milestones and are “back-loaded” to ensure that the maintenance period is properly implemented. While the project from the financing point of view (disbursements) will last for five years, the OPBRC(s) will last for 10 years, with an estimated three-year construction time and a seven-year maintenance period. The OPBRC approach will further enable defining the performance requirements for better preservation of road assets, making the road more resilient to climate events during the maintenance and operation phase.

4.2. Institutional Aspects and Project Organisation

The loan will be extended through parallel financing meaning that NDF will have a loan agreement with GOL. The relationship with the World Bank is regulated by an existing cooperation agreement. This set up is identical to that of LRSP2. AIIB will have a separate agreement with World Bank as they will do joint co-financing. There will be no formal agreements between AIIB and NDF.

The project will be implemented through the existing Government structures. The project will receive the overall policy and strategic guidance from the Project Steering Committee chaired by the Vice-Minister of MPWT and co-chaired by the Vice-Governors of Vientiane Province and Vientiane Capital, with representatives from the Ministry of Finance (MOF), Ministry of Planning and Investment (MPI), Ministry of Natural Resources and Environment (MONRE), and MPWT’s Department Directors directly involved in project implementation.

MPWT is the Project Implementing Agency and has appointed a Project Manager with responsibilities for day-to-day implementation, who will be supported by a technical consultant.

World Bank assists NDF with supervision assistance for the project similar to LRSP2, where such cooperation works very well.

NDF has a strong and direct relationship with MPWT, and often communicates directly with the Client while keeping the World Bank in copy to ensure best possible cooperation and communication.

4.3. Procurement and Contract Structure

The project will use the World Bank procurement framework adopted in 2016. NDF will finance two components:

- Supervision and implementation consultant. This will be one contract, procured using QCBS. NDF will monitor the selection process and provide No Objection to relevant stages as per usual NDF procedure.
- Resettlement payments. This will be extended through a special account to allow the GOL to make payments based on confirmations that the requirements in the RAP and relevant safeguards are fulfilled. The project will finance an international consultant to assist with this and provide quality assurance. AIIB will finance the consultant, and NDF will review the TOR for the consultant in cooperation with AIIB.

4.4. Risk Analysis

Technical risk: The project will pilot OPBRCs on a large scale, whereby much of the risks and responsibilities for implementation (construction and maintenance) will be shifted to the private sector contractors. There is a risk that available and interested contractors have limited experience and capacity for this type of contracting, especially the “pay for results” type of financing where the contractors will get paid for successfully implementing milestones under the construction phase and successful maintenance of roads (as approved by inspectors) during the maintenance phase. At the same time however, this type of contracting ensures that the GOL and financiers get the results required, which is especially important in terms of the climate resilience components.

The World Bank and GOL have held one workshop with contractors already, to inform them on the type of contracts and get input from the market. This was preceded by a formal market sounding implemented by the GOL with the support of the World Bank. More contractor workshops are being planned, including a pre-bid meeting, to ensure the best possible understanding of the tasks and contract type. There are a number of large and experienced international contractors present in Lao PDR, and significant road work has been done in the last few years, so a good deal of experience has been built. With the support of the implementation and supervision consultants, the type of contract, the presence of international contractors and the experience built in terms of highway construction over the last few years, overall technical risk is assessed as **low**.

Institutional risk: the project will be implemented by MPWT in close collaboration with the World Bank. AIIB will co-finance the project, and thereby provide some additional monitoring resources including TA grants for the RAP consultant. NDF has a good working relationship with MPWT and the World Bank team in Lao PDR and the region through LRSP2 as well as the preparation of this project and is also building a good relationship with the AIIB team. There are no indications of any institutional issues, and therefore the institutional risk is assessed as **low**.

Procurement risk: based on experience from LRSP2, the procurement capacity of MPWT is relatively low. While the quality of the procurement is high (firms have been scored and selected after a thorough and realistic review of capacity and cost), MPWT’s staff resources are very limited which significantly delays procurement processes. To mitigate this risk, the World Bank is financing one international and one national procurement expert to assist MPWT with, among other things, the National Road 13 project, as well as LRSP2. In addition, AIIB is looking at potentially strengthening the procurement capacity further by financing an additional international procurement expert. The project will also use advance procurement for the supervision and implementation consultants as well as the RAP consultant, which will reduce the risk of delays. There have been no allegations or signs of corruption in the procurement processes in NDF projects in Lao PDR. The overall procurement risk is assessed as **low**.

Financial risk: As the loan will be sovereign, financial risk is **low**.

Absorption risk: LRSP2 provides capacity-building to MPWT and other relevant stakeholders. The proposed project will provide additional capacity-building coupled with physical investments. With this well-balanced approach, and the supervision technical assistance, the absorption risk is **low**.

Execution and integrity risk: Corruption is widespread in Lao PDR. Furthermore, the World Bank has found that the transport sector is particularly vulnerable to fraud and

corruption risks. NDF and the World Bank have significant experience from project implementation in Lao PDR, and local authorities have experience from internationally funded projects. NDF also has experience from road infrastructure projects globally where TA consultants have provided training on the World Bank's Red Flags online tool. These risks will be discussed with the World Bank and included in the TOR for the NDF-financed technical assistance unless otherwise covered in the project. World Bank safeguards apply, and close monitoring coupled with project implementation support lead to both execution and integrity risks being rated as **medium**.

4.5. Monitoring and Evaluation

The World Bank project team will monitor all aspects of the project, including NDF and AIIB financed components. An international consultancy firm will be contracted by MPWT for implementation supervision and support, and another international consultancy firm for the implementation of the RAP.

A semi-annual M&E report will be submitted to the financiers, in time for regular supervision missions to be conducted jointly with the World Bank and AIIB. The progress reports will also include information on compliance with safeguards, citizen engagement and grievance redress. Annual independent financial audits of the special accounts will be carried out. A midterm review of the project will be carried out within 30 months after project effectiveness to assess the status of project implementation, as measured against the performance indicators. A Completion Report will be prepared within six months after the closing date of the project.

NDF, the World Bank and AIIB will plan semi-annual supervision missions to coincide with the LRSP2 project to allow efficient in-field monitoring from NDF's side of both projects.

5. ECONOMIC AND SOCIAL ASPECTS

5.1. Economic Justification

Economic analysis was conducted based on a standard methodology applied for appraisal of road works, resulting in an EIRR of 22.1%. The economic evaluation focuses on the overall project road improvement cost over the first three years (excluding resettlement costs) and maintenance and operation costs for seven years. The economic analysis will be further confirmed during the later stage project appraisal, which is on-going.

The NDF financing will be in the form of a loan. 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 12 months after the loan is signed. These terms are similar to those of the World Bank for Lao PDR. This will be NDF's fourth sovereign loan under the climate mandate (NDF currently has LRSP2 in Lao PDR, as well as WACA project loans in Senegal and Benin), adding further to NDF's financial sustainability and the possibility to re-use the revolving funds for more climate change financing in the future.

5.2. Environmental and Social Aspects

Technical project description

Proposed works on the road include widening the road from 2 to 4 lanes along the first 19 km and rehabilitation from Km 30.5, the alignment of the road itself will be modified slightly at 4 locations:

- the Houay Xaimoun Bridge will be expanded from 2 to 4 lanes, with the added lanes on the left side requiring that the centreline be shifted to the left by 200m from each end of the bridge;
- the Houay Xone Bridge will be expanded from 2 to 4 lanes, with either one lane added to each side or 2 lanes added on the right side (the preferred option), and the preferred option requiring that the centreline be shifted to the right by 150m from each end of the bridge;
- the Nam Houm Bridge will be expanded from 2 to 4 lanes, with the added lanes on the left side requiring that the centreline be shifted to the left by 200m from the south end of the bridge and 150m from the north end; and
- the sharp curve to the right at Ban Na Nga, where the radius of curvature will be increased from 200m to 280m.

Classification

The Project has been categorised as “High Risk” due to the resettlement of affected people, not due to its potential negative impacts on the environment. This is as per regular procedure in projects that include construction; however, the number of PAPs is relatively low compared with projects with mostly new construction (most construction in this project will be on already existing roads). It should be noted that PAPs are not the same as people in need of resettlement; also, people whose livelihood will be impacted by e.g. noise and dust during a fairly short construction period are counted among the PAPs.

Potential negative Environmental & Social Impact

The proposed impacts from the works will mainly be within the existing right of way but will still require land acquisition of private and government land as well as structures, as confirmed by the preliminary measurement survey based on the ongoing engineering designs and a social survey of affected households.

The current design alignment will result in:

- 2,398 affected households, of which 96% are Lao Tai, 2% are Hmong, 0.5% are Khmu, and 1.5% are foreign (Chinese and Vietnamese business operators);
- 2,625 plots of land affected, of which 95% are along the section where the road will be expanded from 2 to 4 lanes, and 211 of the land plots will lose more than 10% of their area;
- 3,297 built structures affected belonging to 2,161 households, of which 30% are houses, 13% are fences, and 25% are cement slabs in front of commercial buildings; and
- 1,808 businesses fronting the road, varying from one-person stalls to medium enterprises employing 50 or more staff.

Of the 2,398 affected households, 81 are considered vulnerable:

- 32 households fall below the official poverty line with a per capita income of less than 240,000 Kip/month;
- 34 female-headed households that include dependents, with a per capita income between 240,000 and 500,000 Kip/month;
- 5 households are headed by an elderly person and comprise only one or two members, and have a per capita income between 240,000 and 500,000 Kip/month;
- 10 households with a disabled member, and a per capita income between 240,000 and 500,000 Kip/month.

The compensation policy applied is based on the Lao Compensation and Resettlement Decree 2016 and the World Bank OP/BP 4.12.

Impact on Natural Habitats

Landscape of the areas along the proposed project road is typical of a marshy area (with flood plains and riverine forest vegetation along both sides) combined with small hilly zones.

It has been established through the ESIA that there are no significant environmental issues that cannot be either totally prevented or adequately mitigated to levels acceptable by World Bank standards.

Qualifications and Monitoring

The project complies with NDF's Environmental & Social Policy and Guidelines and there are no qualifications. There is a requirement on monitoring the compensation to affected people and verification that the compensation is in compliance with the World Bank OP/BP 4.12 and table 5-1 in the Resettlement Action Plan. An internationally recruited consultancy firm will support the GOL with the implementation of the RAP and provide such verification.

6. CONCLUSION

The Lao PDR - National Road 13 North - Climate Resilient Upgrade and Maintenance project will showcase best-practice climate-resilient road infrastructure for the most heavily trafficked and thereby most visible road section in Lao PDR. This project will build on LRSP2 by using capacity built under that project, as well as climate resilience planning tools, on a different type of road, thereby demonstrating the viability and advantages of climate resilience investments also on highways. The project will also introduce a new type of contracts for highways which shifts part of the financing, implementation and funding risks on to the private sector, paving the way for more climate-resilient road infrastructure investments in the future. This project also presents a first opportunity to work with the AIIB, and NDF has through this project started building a close working relationship with the bank.

The NDF financing will be in the form of a concessional sovereign loan.

7. RECOMMENDATION

The Board approved loan financing of up to EUR 8 million to the project Lao PDR - National Road 13 North - Climate Resilient Upgrade and Maintenance

Helsinki, 27 April 2018



Pasi Hellman
Managing Director



Erik Holmqvist
Program Manager

Annex 1 - Project Results Matrix

RESULTS FRAMEWORK

Indicators and Targets

COUNTRY: Lao PDR

Lao National Road 13 Improvement and Maintenance Project (P163730)

Development Objective(s): To improve road condition, safety and climate resilience on critical sections of the National Road 13

Results Indicators		CRI	Unit	Baselines	Yearly Cumulative Targets (Optional)				End Targets
					Y1	Y2	Y3	Y4	Y5
PDO Indicators									
Objective 1: Road condition	Reduction in vehicle operating costs on the project road		Percentage	0	0	0	0	20	20
Objective 2: Road safety	Increase in average iRAP star rating of the project road		Number	1	1	1	1	3	3
Objective 2: Climate resilience	Project road upgraded and improved, with climate resilient measures		Yes/No	No	No	No	No	Yes	Yes
Intermediate Results Indicators									
Component 1: Road Improvement and Maintenance	Reduction in average IRI		Number	7	7	7	7	3	3
	Kilometres of road upgraded from 2 to 4 lanes, with climate resilience measures		Km	0	0	0	10	19	19
	Kilometres of road		Km	0	0	0	20	39	39

	improved on 2 lanes, with climate resilience measures								
	Percentage of adjacent markets with improved pedestrian access facilities		Percentage	0	0	0	50	90	90
	Contractor's workforce trained on the Worker Code of Conduct		Percentage	0	100	100	100	100	100
Component 2: Technical Assistance and Supervision	Grievances registered related to delivery of the project addressed, with disaggregated data by gender		Percentage	0	90	90	90	90	90
	Number of MPWT staff received training on OPBRC		Number	0	0	10	10	10	30