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Report No: ICR00005285

IMPLEMENTATION COMPLETION AND RESULTS REPORT

(Original Project: IDA-48320 and H3390)
(Additional Financing-I: IDA-50020 and H6290)
(Additional Financing-II: IDA-58650)
ON A

CREDIT

IN THE AMOUNT OF SDR 83.40 MILLION

(US$123.76 MILLION EQUIVALENT)

AND

GRANT

IN THE AMOUNT OF SDR 31.8 MILLION

(US$48.84 MILLION EQUIVALENT)

TO

NEPAL

FOR A

Road Sector Development Project
September 2020

Transport Global Practice
South Asia Region

CURRENCY EQUIVALENTS

(Exchange Rate Effective {July 31, 2020})

Currency Unit =	Nepalese Rupee (NPR)
NPR 119.58 =	US$1
US$1.413070 =	SDR 1

FISCAL YEAR
July 16 - July 15

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ABBREVIATIONS AND ACRONYMS

AADT	Annual Average Daily Traffic
AF	Additional Financing
BIMP	Bridges Improvement and Maintenance Program
CDO	Chief District Office
CPF	Country Partnership Framework
DFID	Department for International Development
DoR	Department of Roads
EIRR	Economic Internal Rate of Return
EMAP	Environmental Monitoring and Assessment Program
ENPV	Economic Net Present Value
FY	Fiscal Year
GDP	Gross Domestic Product
GESU	Geo-Environment and Social Unit
GIS	Geographic Information System
GoN	Government of Nepal
GRSF	Global Road Safety Facility
HDM	Highway Development and Management Model
ICRR	Implementation Completion and Results Report
IDA	International Development Association
IEG	Independent Evaluation Group
ISR	Implementation Status Review
M&E	Monitoring and Evaluation
MoPIT	Ministry of Physical Infrastructure and Transport
MS	Moderately Satisfactory
MT	Motorized Traffic
MTR	Mid Term Review
MU	Moderately Unsatisfactory
NPV	Net Present Value
PDO	Project Development Objective
PIP	Priority Investment Plan
PRD	Poverty Reduction Strategy
RAP	Resettlement Action Plan
RMDP	Road Maintenance and Development Project
RBN	Road Board Nepal
RSA	Road Safety Audit
RSDP	Road Sector Development Project
RSSP	Road Safety Support Project
SRN	Strategic Road Network
UK	United Kingdom
VOC	Vehicle Operating Cost
VoT	Value of Travel Time
WBG	World Bank Group

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DATA SHEET

BASIC INFORMATION

Product Information

Project ID	Project Name
P095977	Road Sector Development Project
Country	**Financing Instrument**
Nepal	Investment Project Financing
Original EA Category	**Revised EA Category**
Partial Assessment (B)	Partial Assessment (B)

Organizations

Borrower	Implementing Agency
Nepal	Ministry of Physical Infrastructure and Transport

Project Development Objective (PDO)

Original PDO

The Project Development Objective is for the residents of beneficiary districts to have all season road access thereby reducing travel time and improving access to economic centers and social services.

FINANCING

	Original Amount (US$)	Revised Amount (US$)	Actual Disbursed (US$)
World Bank Financing			
IDA-H3390	42,600,000	42,600,000	42,787,737
IDA-48320	41,260,000	41,260,000	40,950,007
IDA-H6290	6,240,000	6,007,958	6,209,360
IDA-50020	27,500,000	12,613,962	10,542,515
IDA-58650	55,000,000	26,033,669	25,954,452
Total	**172,600,000**	**128,515,589**	**126,444,071**
Non-World Bank Financing			
Borrower/Recipient	8,000,000	69,500,000	47,560,204
Total	**8,000,000**	**69,500,000**	**47,560,204**
Total Project Cost	**180,600,000**	**198,015,589**	**174,004,274**

KEY DATES

Approval	Effectiveness	MTR Review	Original Closing	Actual Closing
06-Dec-2007	21-Feb-2008	30-Aug-2010	30-Jun-2012	15-Jan-2020

RESTRUCTURING AND/OR ADDITIONAL FINANCING

Date(s)	Amount Disbursed (US$M)	Key Revisions
06-Sep-2010	30.06	
27-Jun-2012	71.94	
21-Jan-2015	98.01	Change in Results Framework Cancellation of Financing
17-Jun-2015	98.01	Change in Loan Closing Date(s)
09-Jun-2016	98.23	Reallocation between Disbursement Categories
16-Jun-2016	98.23	Change in Loan Closing Date(s)
10-Jun-2019	124.98	Change in Results Framework Change in Components and Cost Change in Loan Closing Date(s) Cancellation of Financing Reallocation between Disbursement Categories

KEY RATINGS

Outcome	Bank Performance	M&E Quality
Moderately Satisfactory	Moderately Satisfactory	Modest

RATINGS OF PROJECT PERFORMANCE IN ISRs

No.	Date ISR Archived	DO Rating	IP Rating	Actual Disbursements (US$M)
01	03-Jun-2008	Satisfactory	Satisfactory	3.80
02	31-Dec-2008	Satisfactory	Satisfactory	11.46
03	27-May-2009	Satisfactory	Satisfactory	21.45
04	04-Aug-2009	Satisfactory	Satisfactory	21.45
05	08-Feb-2010	Satisfactory	Satisfactory	21.45
06	12-Dec-2010	Satisfactory	Satisfactory	32.25
07	13-Jul-2011	Satisfactory	Satisfactory	53.32
08	25-Jan-2012	Moderately Satisfactory	Moderately Satisfactory	53.32
09	17-Oct-2012	Moderately Satisfactory	Satisfactory	71.94

10	01-Jun-2013	Moderately Satisfactory	Moderately Unsatisfactory	71.94
11	07-Dec-2013	Moderately Satisfactory	Moderately Unsatisfactory	89.32
12	18-May-2014	Moderately Satisfactory	Moderately Satisfactory	89.32
13	19-Dec-2014	Moderately Satisfactory	Moderately Satisfactory	98.01
14	14-May-2015	Moderately Satisfactory	Moderately Satisfactory	98.01
15	10-Nov-2015	Moderately Satisfactory	Moderately Satisfactory	98.46
16	02-Jun-2016	Moderately Satisfactory	Satisfactory	98.23
17	05-Jan-2017	Moderately Satisfactory	Satisfactory	101.22
18	01-Dec-2017	Moderately Satisfactory	Satisfactory	120.08
19	29-Mar-2018	Moderately Satisfactory	Satisfactory	119.36
20	25-Oct-2018	Moderately Satisfactory	Moderately Satisfactory	124.98
21	21-Mar-2019	Moderately Satisfactory	Moderately Satisfactory	124.98
22	15-Jul-2019	Moderately Satisfactory	Moderately Satisfactory	124.98
23	23-Dec-2019	Moderately Satisfactory	Moderately Unsatisfactory	124.98

SECTORS AND THEMES

Sectors

Major Sector/Sector	(%)
Public Administration	**10**
Central Government (Central Agencies)	10
Transportation	**90**
Rural and Inter-Urban Roads	90

Themes

Major Theme/ Theme (Level 2)/ Theme (Level 3)	(%)
Private Sector Development	**22**
Jobs	22
Job Creation	22

Urban and Rural Development	**77**
Urban Development	22
Urban Infrastructure and Service Delivery	22
Rural Development	55
Rural Infrastructure and service delivery	55

ADM STAFF

Role	At Approval	At ICR
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Organization of the Implementation Completion and Results Report (ICRR)

The Implementation Completion and Results Report (ICRR) for the Road Sector Development Project (P095977) covers three distinct phases of the Project spanning a 12-year period, namely: (i) the original project (effective on February 21, 2008, closed on June 30, 2015, and referred to as RSDP-Original), (ii) the first Additional Financing, AF-I (effective on July 8, 2011, closed on June 30 2017, RSDP AF I, and referred to as the first major restructuring); and (iii) the second Additional Financing, AF-II (effective on January 15, 2017, closed on January 15, 2020, RSDP AF II, and referred to as second major restructuring). In accordance with OPCS guidelines for projects extending over 10 years, project performance and results related to the first two phases (RSDP-Original and RSDP AF I), including the ratings for all key parameters, were comprehensively covered in the an interim ICRR approved by IEG issued on December 22, 2016 (Report No: ICR00003916)[1]. This ICRR focuses primarily on project performance and results related to RSDP AF II. The composite Outcome rating for the entire project has been derived based on the weighted average of ratings from the interim ICRR and assessment of the third phase, as per OPCS guidelines.

I. PROJECT CONTEXT AND DEVELOPMENT OBJECTIVES

A. CONTEXT AT APPRAISAL

Context

1. **When the project started in 2008, against the backdrop of a decade long conflict and security problems, Nepal was the poorest country in South Asia with an average per capita GDP of US$270 (2005), with an estimated growth rate of 2 percent.** The signing of a comprehensive peace agreement between the Government of Nepal (GoN) and the Communist Party of Nepal-Maoists in 2006 laid out a roadmap for lasting peace, an end to the constitutional monarchy and a new governance structure. A new constitution was promulgated in September 2015, which envisages a federal model of government and a stronger role for states/provinces in delivering basic services.

2. **Nepal had a poor road network that was vulnerable to climate change and seismic events.** Fifty five percent of Nepal's total road network of 33,280 km comprised dry-season fair-weather-tracks. In 2007**,** 14 out of 75 districts did not have road connections and 17 out of 75 were linked with seasonal tracks. The mountainous terrain that characterized project locations was susceptible to extreme precipitation, earthquakes, and landslides that resulted in severed connectivity, loss of life, and damage to property. Strengthening the resilience of Nepal's road and bridge network, particularly through improved maintenance of assets, more resilient construction, and improved capacity to respond to unforeseen events, was important for adapting to eventualities associated with climate change events.

3. **The Bank had established strong working relationships with the GoN and donor partners in the transport sector leading up to the approval of the *original project*.** The successful implementation of the World Bank-funded Road Maintenance and Development Project (RMDP, which closed on June 30, 2007) supported the GoN's Priority Investment Plan (PIP-1997) for the transport sector and its update for 2007-2016. The updated PIP highlighted the importance of improving accessibility to the Strategic Road Network (SRN) by bringing the remote population to an all-season road within two hours walk in the Terai

[1] https://hubs.worldbank.org/docs/imagebank/Pages/docProfile.aspx?nodeid=27066429

region and four hours walk in the hill districts. It identified SRN roads for investment based on their social and economic benefits and was essentially a road master plan that formed a basis for the selection of road projects for the 11th and 12th national plans. The Road Sector Development Project (*RSDP-original*), responded to GoN's aim to link six district headquarters in the mid-western and far western regions by all-weather bituminous surfaced roads.

4. ***The original* scoping of the RSDP made strategic decisions during Nepal's post-conflict era on the tradeoff between the breadth and cost of project investments.** Specifically, a push to deliver increased accessibility led to a compromise on technical enhancements like road geometry, road safety, and additional structure work. Thus, many *RSDP-original* roads required enhancements to keep pace with increased traffic volumes and economic development in the remote areas. The *AF-II* was designed to support further enhancements to the access that RSDP roads provide, including the construction of new bridges at "gaps" in the *original* road alignment.

Theory of Change (Results Chain)

5. The Project's Theory of Change (ToC), as depicted in Figure 1 below, was constructed by the ICR team based on the project documents (PAD and Additional Financing Project Papers).

Project Development Objectives (PDO)

6. The objective of the Project, as specified in the Financing Agreement, **is for residents of the Beneficiary Districts to have all-season road access, thereby reducing travel time and improving access to economic centers and social services**[2].

Key Expected Outcomes and Outcome Indicators

7. The key outcome level indicators of the original project were:

- Percent increase in number of people with all season access to economic centers and social services
- Percent decrease in journey times to key economic centers in the project area
- Kilometers of periodic maintenance undertaken each year and kilometers of backlog within the project period
- Percentage reduction of blacktop SRN in poor condition.

Components

8. The original project was designed along two major components with the key activities listed below:

Component 1: Road and Bridge Development:

- Upgrading about 297 km of existing dry-season roads and tracks to all-season standard with sealed gravel pavements.
- Carrying out periodic maintenance of about 450 km of the strategic highway and feeder road network.

[2] The PDO in the Project Appraisal Document was phrased slightly differently – "for the residents of beneficiary districts to have all-season road access thereby reducing travel time". This, in turn, was envisaged to improve access to economic centers and social services.

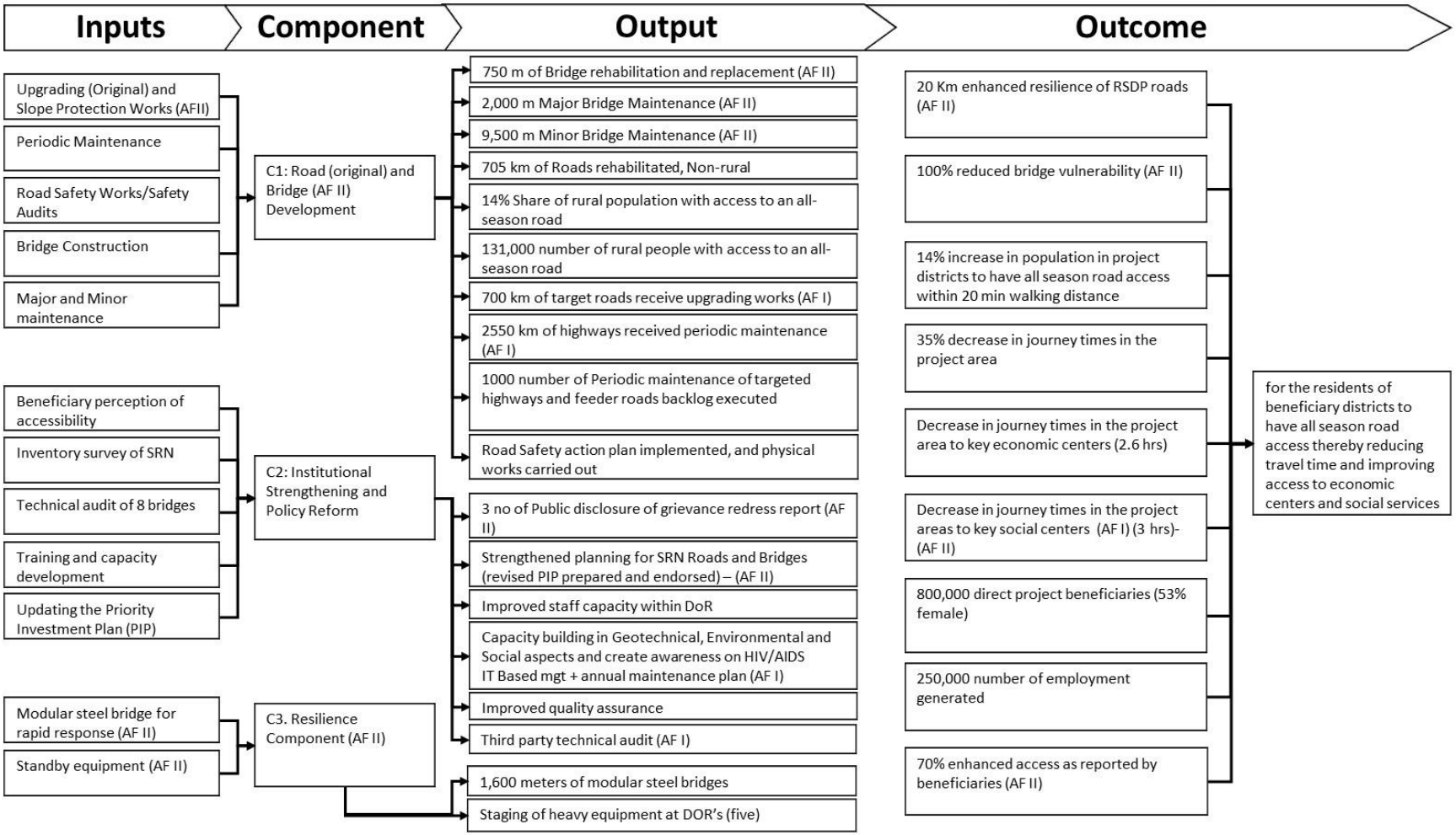

Figure 1. Theory of Change envisioned under the RSDP project. Note the elements which were added during AF-I and AF-II are appropriately noted in parenthesis.

- Carrying out road safety audits to identify black spots in the strategic road network and carrying out road safety physical works to improve the black spots.
- Carrying out a program of compensation, resettlement and rehabilitation of Displaced Persons.

Component 2: Institutional Strengthening and Policy Reform

- Strengthening the institutional capacity of, and providing support to, DOR, the Roads Board Nepal (RBN) and the Ministry of Physical Planning and Works (MOPPW). A detailed list of activities under this component can be found in Annex 5.

B. SIGNIFICANT CHANGES DURING IMPLEMENTATION (IF APPLICABLE)

Revised PDO Indicators and Outcome Targets

9. The RSDP was provided additional financing on two occasions: the AF-I (IDA-48320 effective on April 11, 2011 and closed on June 30, 2015; IDA-50020 effective on July 8, 2011 and closed on June 30, 2017; and IDA-H6290 effective on July 8, 2011 and closed on June 30, 2015) and AF-II (IDA-58650 effective on January 5, 2017 and closed on January 15, 2020). The PDO was not changed on either occasion.

- During AF-I, the following key changes were made to the PDO indicators and outcome targets: the coverage of the indicator on increase in number of people with all season access to economic centers and social services was increased from five to eight project districts; an additional indicator on decrease in journey time to key social services was added; and the target percentage of black top SRN in poor condition was revised from 10 percent to 15 percent as the original target was deemed unrealistic.
- During AF-II, the following PDO indicators were added: an indicator to measure the enhanced resilience of the RSDP roads; an indicator to measure bridge vulnerability; and an indicator to measure enhanced access as reported by beneficiaries. The PDO indicator for the percentage reduction of blacktop SRN in poor condition was dropped.

Revised Components

Component 1: Road and Bridge Development

10. Road Upgrading Works were scaled up from 297 km to 700 km during AF-I. The scope was revised under AF-II with additional 20 km of slope stabilization and all-weather surfacing works. Periodic maintenance of Roads was expanded under AF-1 by an additional 2,100 km (to 2550 km). Major and Minor Maintenance of bridges was added during AF-II in response to the 2015 earthquake, covering 55 bridges/2000 meters for major maintenance and 300 bridges/9,500 meters for minor maintenance. During July 2019 restructuring the scope of Maintenance of Bridges was reduced to 1,500 meters of major maintenance and 6,245 meters of minor maintenance, as most of the maintenance works envisaged under the Project were eventually carried out by the Government through other Projects or from its own resources. Bridge Construction – which included 33 bridges along gaps in SRN roads and replacement of three bridges damaged in earthquake - was added during AF-II. The scope of these works was revised downwards from 750 meters to 670 meters on June 2019, restructure due to increased cost.

Component 3: Resilience Component (US$ 20 million):

11. This component was introduced during AF-II to support: (i) provision and staging approx. 1,600 meters of modular steel bridges; and (ii) provision and staging of heavy equipment at DOR's five heavy equipment division.

Other changes

- On June 30, 2011 an undisbursed amount of SDR 17.5 million (US$27.5 million) under the AF Grant (No. H629-NP) was cancelled and the same amount of funds were recommitted as new credit (No. 5002-NP).
- On June 27, 2012 the closing date of the original IDA Grant was extended by 18 months from June 30, 2012 to December 31, 2013.
- On January 21, 2015 a marginal reallocation of funds across categories was affected. In addition, there was a cancellation of "savings" amounting to US$6.98 million due to the depreciation of the Nepalese Rupee and a revision of targets for some intermediate result indicators.
- On June 18, 2015 the closing date was extended to June 30, 2016 to enable GoN to cope with the disruptions and delays caused by the April 2015 earthquake and the trade blockades at the border with India, as well as to resolve technical challenges involving the design of arch bridges on major highways.
- On February 3, 2016 a reallocation of funds between components and sub-components was affected, with more funding for institutional strengthening.
- On June 15, 2016 the second AF of US$55 million IDA was signed, together with an extension of project closing date from June 30, 2016 to June 30, 2017.
- On June 11, 2019 the AF-II closing date was extended from July 15, 2019 to January 15, 2020 and SDR 14.71 million (US$20 million) of credit (No. 5865-NP) was canceled, along with corresponding component cost revisions and reallocation of the IDA credit.
- The undisbursed balance of SDR 6.234 million (US$8.67 million) in the AF-II grant as of the July 15, 2020 disbursement deadline date was cancelled and the credit account was closed.

Rationale for Changes and their Implication on the original Theory of Change

12. AF-I scaled up the scope of the original project by expanding it to two additional districts and the scope of periodic maintenance. AF-II was in response to the 2015 earthquakes to enhance DoR's resilience capacity and performance maintenance, and upgrades for bridges and roads impacted by the earthquake. The rationale for the various extensions and cancellation of funds are provided in the previous section. Overall, the changes had no substantial impact on the original Theory of Change; the addition of the resilience component under AF-II is aligned with the outcomes of the project as shown in Figure 1.

II. OUTCOME

13. The overall outcome rating for the project has been determined based on the split rating method, as the key outcome targets changed substantially under AF-II even as the PDO remained unchanged. It has been determined based on the outcome rating of the original project plus AF-1 as per the Interim ICR (which was endorsed by IEG) and the Outcome rating of AF-II, as assessed by this ICR, using the disbursements during the respective periods as weights.

A. RELEVANCE OF PDOs

Rating: Substantial

Assessment of Relevance of PDOs and Rating

14. The development objective of the project continues to be well aligned and relevant to the World Bank Group's Nepal Country Partnership Framework for FY19-23. The PDO is directly linked to the CPF Objective 2.2 (Increased Transport Connectivity), where WBG engagement aims to: (i) support construction of safe, climate resilient and cost-effective bridges; (ii) improved maintenance and quality of road infrastructure; and (iii) improved connectivity in rural areas. The RSDP AF is listed in the CPF as providing financing support to achieve the indicators under Objective 2.2. PDO level indicators under AF-II on reducing bridge vulnerability and enhanced resilience of the project roads are aligned with CPF Objective 3.3 of WBG support for increased resilience to health shocks, natural disasters, and climate change. Increasing physical infrastructure and providing for improved accessibility were priorities under the GoN's 14th Periodic Plan (2017-19) and are continued in the 15th Periodic Plan (2020-2024).

B. ACHIEVEMENT OF AF-II PDOs (EFFICACY)

Rating: Substantial prior to AF-II and modest under AF-II

15. The RSDP-original Development Objective for the residents of beneficiary districts to have all-season road access thereby reducing travel time remained unchanged throughout. The achievement of PDO indicators and intermediate outcome indicators for the AF-II phase is presented below in Table 1. **Details of the efficacy assessment of Substantial in the Interim ICR are presented in Annex 6.**

Table 1. Summary of efficacy assessment during AF-II phase

PDO Outcome Indicators	
Indicator Description	**Target Achievement**
Reduced bridge vulnerability - bridges targeted for major or minor maintenance rated to be in good condition as per the DoR's Bridge Management System	With 94% of the bridges targeted for major or minor maintenance rated in good condition, the target of 100% has been almost achieved.
Enhanced access as reported by beneficiaries	At 82% positive response against the target of 70% as per results of the sampled survey, the target has been exceeded.
Enhanced resilience of project roads including civil works on slope stabilization and all-weather surface	With 0.73 km of roads rehabilitated at project closing against a target of 16 km, the target was significantly underachieved. However, by May 2020 (four months after closing), 4.6 km of roads had been rehabilitated by GoN, corresponding to 42% of the target.
Intermediate Outcome and Output Indicators	
Indicator Description	**Target Achievement**
Major and minor bridge maintenance	Targets of 1,500 m of major maintenance and 9,000 m of minor bridge maintenance were achieved.
Bridge rehabilitation and replacement	With only 6 bridges (145 m) fully completed against the revised target of 31 (670 m), the target was significantly underachieved at project closing (January 25, 2020). However, there has been significant progress made by GoN since closing, as by March 15, 2020, an additional 5 bridges had 80% works completed and another 9 bridges had 70% of works completed, achieving an overall weighted physical progress of 64% by March, 2020 in spite of delays due to the COVID pandemic.

Provision and Staging of modular steel bridges for rapid response	With the provision and staging of 1,500 meters modular bridges, the target was satisfactorily achieved.
Public disclosure of grievance redress mechanism (GRM) report	The GRM report was publicly disclosed three times and the target was satisfactorily achieved.

Justification of Overall Efficacy Rating

16. The key AF-II PDO indicator target on enhanced resilience of project roads and the intermediate indicator on bridge rehabilitation, both critical for providing accessibility, were not achieved. However, there has been substantial progress on both activities since project closure using government resources. All remaining maintenance works, and procurement of modular bridges were completed satisfactorily, and contribute to reduced bridge vulnerability and better preparedness for future emergencies. Similarly, beneficiary survey results for the completed bridges indicate that there has been progress towards the objective of providing enhanced access. Considering that only two of the three outcomes were met through the defined indicators, **AF-II efficacy has been rated as Modest**.

C. EFFICIENCY

Rating: Substantial

Assessment of Efficiency and Rating

17. Cost-benefit analysis undertaken for the RSDP-original and AF-I roads, reported in the Interim ICRR, is summarized in Table 2 (see Interim ICRR report for details).

Table 2. Results of Economic Analysis at Appraisal and Completion Under the Interim ICR

Road Sections	NPV at ICR (in USD)	EIRR at ICR	EIRR at Appraisal
Original project	63.7	41.1%	29.4%
AF-I	49.3	29.4%	23.4%

18. The results of the economic evaluation for the three completed road sections under the AF-II involving seal and slope stabilization intervention are shown below, alongside the results at appraisal. They confirm that the individual sections, as well as the overall AF-II investments, are economically viable. Annex 4 provides further details of the economic analysis.

Table 3. Results of Economic Analysis of AF-II Road Sections at Appraisal and Completion

No.	Road Name	Length (Km)	Base Case		Scenario with 20% reduction in Benefits	
			EIRR %	NPV US$ Million	EIRR %	NPV US$ Million
	APPRAISAL STAGE					
	Total of five roads [2]	**18.235**	**13.3%**	**0.65**	**10.3% [1]**	**(-)0.18 [1]**
	COMPLETION STAGE					
1	Road: Khodpe-Chainpur	2.71	18.34%	0.08	14.21%	0.03
2	Road: Chhinchu-Jajarkot	0.50	75.52%	0.20	65.66%	0.16
3	Road: Gokulesshore-Darchula	1.60	23.17%	0.10	18.64%	0.05
	Total / Average	**4.81**	**26.72%**	**0.38**	**21.79%**	**0.24**

Note:
1. For the sensitivity scenario in which the traffic growth was reduced to 6.5% from 9.5%.
2. Road wise results for five at appraisal stage were not available.

19. **Design and Implementation Efficiency.** As noted in the Interim ICRR, operational issues at the outset slowed implementation, especially related to road upgrading and road maintenance. Administrative efficiency of the DoR was further impacted by frequent staff rotation, which affected implementation continuity and delayed decision making. Institutional components involving training helped in managing operational efficiency. Overall, by the end of AF-I, technical designs and procurement of road construction and supervision services were executed satisfactorily. During AF-II, however, the project experienced significant delays (particularly in the major bridges' component) as a result of poor contract management and supervision. Implementation of this activity saw cash flow problems resulting in delayed payments to contractors and suppliers, which disrupted contract implementation. Because of changes in currency values (SDR versus the US dollar and the US dollar versus the Nepali Rupee), cost savings due to competitive bids, and lowering of project scope during AF-II the equivalent of US$26.98 million was cancelled during implementation in two instalments; an unutilized amount of US$8.67 million equivalent was canceled at completion.

20. **Efficiency Rating.** Based on the above discussion of economic efficiency of the entire project and considering the administrative inefficiency in specific activities during AF-II, the overall efficiency of the project is rated Substantial.

D. JUSTIFICATION OF OVERALL OUTCOME RATING

Rating: Moderately Satisfactory

21. The table below assesses the overall outcome of the entire project, based on the ratings of the Interim ICR and the ratings in the current ICR. Disbursements of US$99 million on August 31, 2016 and US$125 million at closing (January 15, 2020) have been used to weight the before and after AF-II ratings. The overall outcome of the project is rated Moderately Satisfactory.

Table 4. Overall Outcome Rating using the Split-Rating Method

	From Interim ICR	After AF-II restructuring
Relevance of the PDO	Substantial	
Efficacy	Substantial	Modest
Efficiency	Substantial	
Outcome ratings	Moderately Satisfactory	Moderately Unsatisfactory
Numerical rating of the Outcome rating	4	3
Disbursement	US$99 million (end of AF-I)	US$126 million (at closing)
Share of disbursement	77%	23%
Weighted value	3.08	0.69
Final outcome rating	**Moderately Satisfactory** (with rounded weighted value of 4)	

E. OTHER OUTCOMES AND IMPACTS (IF ANY)

22. **Gender.** Access improvements under the project considered the requirements of female residents in the project area, as well as the gender patterns of migrant labor in the target districts. Improving and sustaining transport access in the target districts increased economic opportunities for women who head absentee households (which is common in Nepal, as many men work abroad). The project also provided construction jobs for women in the area. 78 percent of the women respondents in the beneficiary participation survey provided positive responses or benefited from the construction of bridges under AF-II.

23. **Road Safety.** A significant co-benefit of the project was improved road safety performance through interventions and strengthening the institutional capacity of GoN to manage road safety. The Bank secured a US$7.47 million grant from the UK Department for International Development (DFID) for the Road Safety Support Project (RSSP) to provide road safety treatments to seven of the RSDP roads (70 km). The installation of crash barriers has resulted in improved road safety, reduced the number of crashes, saved lives, and ultimately increased safety on these road sections[3]. The crash barriers were expected to reduce fatalities rate by 30%, major injuries by 25%, and minor injuries by 20%. The project also supported improvements to the institutional set up and regulatory framework to address the road safety and establish a sustainable mechanism to enable the government mainstream road safety.

24. **Institutional Strengthening.** The Institutional Strengthening and Policy Reform Component focused on improving processes and building the long-term capacity of key branches of the DoR, and in the RBN. The DoR benefitted from local and international training opportunities for senior staff and technical experts to build capacity and expertise in information technology, environmental and social safeguards, human resource development, road asset management, road safety, quality assurance of upgraded works, auditing, and logistics. The project also provided technical assistance and training to improved planning of DOR's capital investment program and the execution of infrastructure sub-projects.

25. **Poverty Reduction and Shared Prosperity.** Just over half the two million people in the project districts were poor and included members of two historically disadvantaged groups: the Dalits and Janajatis. Three of RSDP's original target districts (Kalikot, Bajhang, and Jumla) were considered to be the second, third, and sixth poorest districts in Nepal. Project benefeiaries met by the ICR team emphasized that the project roads had improved access to government services and provided increased access to transport services. The additional 25 districts that benefitted from the maintenance of quake-affected bridges under AF-II were home to approximately 10.2 million people with an overall rate of poverty at 19.2% in 2011. In addition, these additional 25 districts are home to an estimated 1.93 million poor people (roughly 36% of Nepal's total population that classifies as poor). Bridges rehabilitated in these districts provide connectivity along the Birgunj-Narayanghat-Mugling-Kathmandu corridor carrying a majority of the freight into and out of Kathmandu and Pokhara. Results of the beneficiary survey showed that the construction of the new bridges was viewed positively by people in terms of improving accessibility to economic and social centers (83% respondents in favor) and contributing to economic development (65% respondents in favor), addition to resilience against future natural disasters.

26. **Innovation.** The remoteness of the Mid-Western and Far-Western regions of the country presented engineering and logistical challenges for the construction firms contracted to upgrade sections of non-engineered roads. Based on past pilot projects, project roads utilized a unique, low-cost design comprised of a riverbed gravel size sourced from the immediate vicinities of project sites and protected by thin coating of Otta Seal to prevent gravel erosion, run-off, and unhealthy dust during the dry season.

III. KEY FACTORS THAT AFFECTED IMPLEMENTATION AND OUTCOME

A. KEY FACTORS DURING PREPARATION

27. **The evolving needs of Nepal's transport sector required AF-II.** As noted in the Interim ICR, the RSDP-original design made strategic decisions during Nepal's post-conflict era on the tradeoff between

[3] The life-saving impact of the crash barrier installation under the project was featured in the *Global Road Safety Facility: Leveraging Global Road Safety Successes Vol 02* and also as part of *World Bank video feature*.

the breadth and cost of project investments. With time, project roads required enhancements to keep pace with both greater traffic volumes and the development that road access has brought to remote areas. AF-II was designed to support access to RSDP-original roads, including the construction of new bridges at "gaps" in the original road alignment, and the needs that came to the fore in the wake of the earthquakes in 2015.

28. **Increased funding for construction and maintenance of the SRN.** The Road Development Component emphasized increased flow of funds to districts with poor access to all-weather roads. The project also sought to increase the flow of government's own funds into periodic maintenance by requiring GoN to share 70% of the corresponding costs, which was further raised to 90% as part of AF-I in 2011.

29. **Alignment post-2015 Earthquake Emergency Needs.** Complementing the Bridges Improvement and Maintenance Program (P125495), which focused on higher priority and technically complex maintenance works, the AF-II grant was prepared to address other important major and minor maintenance on bridges affected by the 2015 earthquakes, and included a component focusing on enhancing resilience of the Department of Roads to better respond in the immediate aftermath of natural disasters.

30. **Risk Assessment and Mitigation.** Critical risks were appropriately assessed, and most risk mitigation measures were efficiently implemented. However, the design of the institutional reform component could have been more realistic; see "Quality at Entry" section.

B. KEY FACTORS DURING IMPLEMENTATION

31. **Dealing with Unanticipated Social and Political Challenges.** The project was affected by frequent strikes ("bandh") called by different political and ethnic groups, two major earthquakes, floods and an unofficial trade blockade at the Indian border. During the 30 months from to the Mid-Term Review (MTR), there were three changes in government, which affected staff continuity and GoN decision-making. Despite this, civil works under the original RSDP and the AF-I (till 2016) were mostly completed within one year of their scheduled completion dates. The project also introduced the e-bidding system and the application of contractual remedies against poorly performing contractors. The overall Implementation Progress rating was consistently Moderately Satisfactory during AF-II; however, the final rating was Moderately Unsatisfactory.

32. **The institutional strengthening and policy reform component was too ambitious.** The Institutional Strengthening & Policy Reform component contributed to Training, Geo-environmental and Social Studies, quality assurance and third-party technical audits; however, challenges were experienced in road asset management, mainstreaming of IT based systems and a technical study on bridges. The range of activities and the lack of a prior strategic assessment of the key areas of support led to implementation difficulties.

33. **Procurement and installation of modular steel bridges was a success.** The procurement of 30 sets of modular bridges was the first major procurement of goods for the DoR. DOR adjusted the technical specifications based on a review by international experts and adopted a lower cost solution. It successfully installed a modular steel bridge on the East-West Highway, where the existing bridge had been washed away during the 2019 monsoon rains.

34. **Poor contract management and supervision quality during AF-II.** The construction of 23 (of the 31) AF-II bridges was handled by a single contractor, which was a challenge in the mountainous terrain. In those bridge contracts that were not completed, the main contractor was not on site and the junior partner was primarily responsible for execution. In addition, payments for interim payment certificates were not adequate to pay workers and suppliers in a timely manner. In terms of grant financing during AF-II, while a disproportionately high amount was spent on supervision consultancies (more than 20%, 3.68 m SDR) the project nevertheless suffered with poor performance in terms of supervision and implementation of main activities.

35. **Technical capacity was not adequate for bridge related construction and maintenance resulting in significant delays.** In the absence of a proper design review mechanism with site verification, bridge alignments and heights were found to be not appropriate to the construction site and contributed to delays in contract implementation. A thorough assessment of goods required prior to the initiation of procurement utilizing sector experts would have reduced the need for a variation order.

IV. BANK PERFORMANCE, COMPLIANCE ISSUES, AND RISK TO DEVELOPMENT OUTCOME

A. QUALITY OF MONITORING AND EVALUATION (M&E)

M&E Design

36. The design of the M&E, particularly its lack of continuity to revised key project outcomes from restructuring, proved to be a shortcoming of the project. The M&E design of AF-II appears to have focused on indicators relevant to AF-II, rather than the overall project objectives. The target values of some of the original PDO indicators that were retained throughout the project were not updated beyond the end of AF-I and thereby limiting the measurement of efficacy during AF-II.

37. Two of the key outcome indicators of the original RSDP –percentage increase in population in project districts with all-season road access within 20 minutes walking distance and percent decrease in journey times to key economic centers - were well linked to the PDO. A third original PDO indictor on percentage of SRN network in poor condition had its target first scaled down and then dropped from M&E during AF-II because of frequent reclassification of the network. This could have been a critical PDO indicator to demonstrate DOR's strategic results-based vision to maintain the SRN and should have been monitored appropriately throughout the project. The original PDO indicators on employment generation, reduced bridge vulnerability and resilience improvements of roads were not directly linked to the PDO.

38. Many of the Intermediate Outcome indicators were relevant but should have been rationalized. Intermediate indicator (#15, Share of rural population with access to all-season roads) should have been a PDO level indicator. Monitoring and reporting on periodic maintenance backlog (Indicator #12) overlapped with Indicator #11, which also measures performance on periodic maintenance. There were many indicators for institutional capacity building, some of which were too broad, e.g., Indicator #3 on "Capacity building in geotechnical, environmental and social aspects and awareness creation in HIV/AIDS".

39. Project monitoring was to be carried out at different levels of government, depending on the activity (Ministry, Department, Project Implementing Unit, DoR Branches, Units, Project Offices, and Divisions), with supervision consultants assigned to manage road upgrading and maintenance contracts were also to collect some data.

M&E Implementation

40. Not all indicators were reported on diligently and there were delays in updating some data. As also stated in the Borrower's completion report, this was due to inadequacies in the DoR's M&E system. Frequent transfers of both junior and senior staff out of the project and their replacement with new personnel who were not conversant with the M&E, introduced continuous weaknesses in the process.

M&E Utilization

41. It was reported that the National Vigilance Center used the data collected as part of the M&E to identify and carry out technical audits on civil works contracts. The data was also used as a progress management tool, especially in adjusting some components during implementation. There is no evidence that the project's M&E framework or data itself would be used beyond the project life.

Justification of Overall Rating of Quality of M&E

42. The overall quality of the M&E is rated Modest, mainly due to the shortcomings in design described above.

B. ENVIRONMENTAL, SOCIAL, AND FIDUCIARY COMPLIANCE

43. RSDP was a Category 'B' Project and triggered Environmental Assessment (OP/ BP 4.01) and Forests (OP/BP 4.36). Social safeguards policies triggered under the project include OP/BP 4.10: Indigenous Peoples and OP/BP 4.12: Involuntary Resettlement. A framework approach was used in managing environmental and social risks, as the precise locations of project activities were not known at the time of project appraisal. An Environmental and Social Management Framework (ESMF), approved by the Bank, provided guidance at the project level. DOR applied the ESMF of June 2007, which was subsequently updated in April 2013 to include procedures and measures which are relevant to addressing bridge-related social and environmental impacts. Each subproject was screened and based on the results of the screening, an Environmental and Social Assessment was conducted followed by the preparation of site-specific ESMPs, RAP, and VCDP as required to address impacts of the sub-projects. Compliance with both social and environmental safeguards policies were rated Moderately Satisfactory during the last implementation support mission in November - December 2019.

44. **Environmental Safeguards.** Environmental performance was weak during the early stages of implementation because of delays in complying with ESMF procedures, including preparedness checks and other monitoring activities, delay in hiring the Environmental Specialist as well as in engaging and coordination with GESU. Joint and continuous efforts made by the Project (with Bank support and guidance) resulted in gradual improvement in environmental performance at sites over time, with the rating improving from 'Moderately Unsatisfactory' to 'Moderately Satisfactory'. GESU staff, project staff, and the contractors were sensitized on Bank environmental management expectations and compliance requirements. Project officials have committed to continue adopting the project's environmental standards and good practices in DoR's work.

45. **Social Safeguards.** Social impacts included land acquisition (resulting in involuntary resettlement) and loss of strips of land; loss of structures, disturbance and disruption of livelihood activities; and loss of

common property resources (CPRs). Cash compensation was paid in full for 91 Project Affected Households (PAHs) in lieu of 76 parcels and 48 structures. In the case of the remaining 24 households with 19 land parcels and 11 structures, compensation remains outstanding as the affected households did not provide the necessary documentation and clearance for payments. The compensation amount for 22 (of the remaining 24 PAHs) has been deposited at their respective DAO offices. In the case of the other two PAHs, once the Compensation Determining Committee (CDC) determines and advise on their payment, the DCID/DoR will deposit the appropriate compensation amount in an Escrow Account4.

46. **Financial Management (FM).** Financial management performance was rated "moderately satisfactory" in the beginning of the project but was downgraded to "moderately unsatisfactory" in FY 2018-19 due to non-compliance with contract terms for the payment of additional 5% mobilization advance, as well as other issues. The rating was subsequently upgraded after proper maintenance of the required ledgers and vouchers, and adjustment of excess claims and payments. Interim Unaudited Financial Reports (IUFRs) were submitted with some delays, which resulted in delays in payment of advances and documentation of expenses incurred. There were issues in the quality of IUFRs because of the frequent transfer of the Finance Officer; it improved over time with IDA support. Audit reports were submitted within the grace period. The auditors provided unqualified audit opinions and no major issues were noted in the management letter, except for slow progress and delays in the reimbursement of expenses.

47. **Procurement.** As noted in the interim ICR report, procurement was recognized as a notable risk, especially in terms of staffing continuity, corruption and collusion among bidders. These risks were mitigated mainly through adopting a disclosure policy, complaint redressal mechanisms and e-procurement. The DoR successfully harnessed e-procurement and established itself as a leader in implementing e-bidding in the GoN. Within two years, all infrastructure related Ministries/ departments adopted this system for public procurement. Procurement was managed satisfactorily till the award stage over the course of the project. In the initial phase of the project, procurement and contract implementation were successful in the introduction of intermediate milestones for physical progress and liquidated damages related to each milestone and splitting of advance mobilization payments based on contractor's mobilization. These contractual provisions were effective for the completion of most of the contracts before schedule. The few instances of poor or non-performance in contracts were effectively dealt with by DoR in consultation with the Bank team. Weaknesses in contract management and administration were more pronounced in the construction of bridges and slope stabilization works during AF-II; these are described under the "Key Factors that Affected Implementation".

C. BANK PERFORMANCE

Rating: Moderately Satisfactory

Quality at Entry

48. The preparation of this project was built on the experience from earlier Bank engagement in the Road Maintenance Development Project (RMDP). This experience was harnessed well to: (i) define a PDO that was fully aligned with the sector needs, country priorities and the Bank's engagement strategy; (ii)

[4] See Para 19 of Project's AM of November 18- December 9, 2019

design components that respectively focused on enhancing access in the targeted poor and remote districts with acute deficiencies in access to economic and social centers, through upgrading and periodic maintenance investments and strengthening policies and key institutions engaged in the planning and management of roads; and (iii) prepare the project on a "fast track" basis, taking advantage of the Environmental and Social Management Frameworks developed as part of the earlier project.

49. As noted in the interim ICR, the design of the Institutional Strengthening & Policy Reform Component, appeared in hindsight to have been ambitious in terms of the range of activities it sought to support, and did not clearly highlight the rationale for the various activities under this component in strengthening the target institutions. In particular, the team appears to have underestimated the challenges implementing areas such as road asset management system and strengthening of RBN.

50. As noted in the previous sections and in the Interim ICRR, because of the framework approach adopted, an ESMF was prepared to address Bank safeguard requirements. As discussed previously, the original project incorporated an M&E design fully aligned with the PDO and outcome targets; however, it had some shortcomings.

51. The preparation of the AF-II demonstrated the ability to be adaptive to the emergency needs of the transport sector, capitalizing on existing engagement of the RSDP. The restructuring of the project addressed critical needs, including new bridge construction, repair of disaster affected bridge maintenance, and enhancements on existing RSDP roads, ensured connectivity to remote areas as per the objectives of the original project. The introduction of a new resilience component ensured DoR's capacity for readiness for future disaster related events on the SRN and also its own procurement management capacity. Fiduciary and safeguard considerations and requirements were given appropriate attention, as were key risks. Specialized social and environmental safeguard arrangements were outlined in the project's ESMF. Risk assessment, as outlined in the Project Paper, anticipated the most relevant risks. Certain shortcomings in the M&E design for the AF-II has been discussed in the previous section.

Quality of Supervision

52. As envisaged at the time of appraisal, the Bank relied on continuous supervision to ensure smooth implementation of the project. In all 23 formal missions were conducted over an 11-year period (from June 2008 – January 2020). The ISRs, Aide Memoires and Management Letters provided regular and appropriate oversight of the project, with the later Aide Memoires' providing more detailed data and analysis. The Aide Memoires and Management Letters enabled the Bank to maintain regular communication with the GoN on implementation challenges and successes. These efforts enabled the Bank to identify operational problems (e.g., poor- or non-performing contracts) as well as the need/scope for AFs, restructurings and cancellations early, and initiate appropriate remedial actions.

53. As noted in Borrower's assessment report, the Bank's persistent and continuous efforts helped to resolve implementation problems, including safeguard compliance issues, during site visits and discussions with the concerned authorities. The Bank's endeavor to maintain the technical, financial, institutional, social and environmental discipline as agreed in the PAD and the grant/credit agreements, established norms and motivated the project staff, as well as consultants and contractors. Particularly during AF-II, which witnessed issues related to technical capacity and engagement of international expertise, timely interventions facilitated by the Bank contributed to the completion of activities. The Bank was not equally effective in helping the project to advance the Institutional Strengthening and Policy

Reform agenda, most likely due to the level of commitment from the implementing agency and the changing political landscape. The Bank responded mainly through progressive downward revision/recalibration of its expectations.

54. The Bank provided regular support to ensure compliance with the environmental and social safeguard policies, as well as fiduciary aspects, as discussed in the relevant earlier sections. The follow-on Nepal Strategic Road Connectivity and Trade Improvement Project (SRCTIP), which is now effective, strengthens sustainability of RSDP outcomes through the new project's components on institutional improvements for periodic maintenance, road asset management capacity and road safety institutions in the country.

Justification of Overall Rating of Bank Performance

55. Based on the above discussion on Quality at Entry and Quality of Supervision, Bank performance for the entire RSDP is rated as Moderately Satisfactory.

D. RISK TO DEVELOPMENT OUTCOME

56. DoR has established itself as a capable implementing institution, but its technical capacity remains limited due to multiple demands and the limited number of experienced engineers who are able to plan and manage works effectively. DoR continues to get a separate maintenance budget from the government and local bodies get separate unconditional grants that they may use for local maintenance. The government is also allocating a significant budget (US$80 million financed by World Bank) to undertake periodic maintenance of high traffic sections of the SRN.

57. *Building and Maintaining Bridges that Connect Upgraded Roads.* The DoR has initiated the construction of bridges that connect RSDP upgraded roads. The technical capacity of the Bridge Branch of the DOR requires strengthening through the institutionalization of a proper design review mechanism with site verification.

58. *Fiduciary Transparency*. Government programs in Nepal remain vulnerable to fiduciary risks despite financial controls, procurement oversight, regular financial audits and reporting, and other controls. The introduction of e-bidding and general improvements in DoR's fiduciary systems have had a positive impact; however, residual risks remain.

V. LESSONS AND RECOMMENDATIONS

59. The development and implementation of RSDP over a period of 12 years provides the opportunity to reflect on lessons learned that can inform future partnerships between the Bank and the GoN. The project also offers lessons on reforming institutional capacity and performance of the road sector during changes in the political and economic environment, as well as major natural disasters.

60. **Investments in roads and bridges should be based on a robust and thorough understanding of the needs of the transport sector and available opportunities for reform.** RSDP design facilitated the flow of additional funds to the remote and poor districts and was aligned with the GoN's goal for developing the SRN. It balanced the allocation of funds between construction of new roads and increasing the commitment of government funds for periodic maintenance. As part of the follow-up SRCTIP, the

Government will be pursuing a substantive Periodic Maintenance Program covering high traffic sections within the SRN. SRCTIP has provided the opportunity to address road safety, sectoral policy reforms and institutional capacity building as relevant, while retaining its focus on improved accessibility to remote corners of the country.

61. **Road investments have the potential to contribute economic recovery in post-conflict environments.** RSDP highlights the contribution of improving all-weather infrastructure and strengthening the institutional capacity of the transport sector to economic recovery in the post-conflict period. This was particularly important in improving accessibility in remote and challenging terrains so that the residents feel connected to the essential services and economic opportunities.

62. **Major project restructuring and additional financing must think critically of their relevance to the original project goals.** The Bank was able to quickly mobilize additional support through AF-I and AF-II in the aftermath of natural calamities. AF-II, with its focus on bridges, RSDP road enhancements and climate resilience, was adaptive to the emerging needs of the transport sector. However, it would be important to critically assess whether the advantages of a long ten plus year engagement with the same PDO would be offset by the loss of the opportunity to engage the government in a fresh dialogue before undertaking a new operation.

63. **Support for innovative approaches to the development and use of local materials in road construction can be cost effective, environmentally friendly, and promote local entrepreneurship.** RSDP incentivized the creative use of local materials to build or upgrade low traffic roads at a lower cost and with a minimal carbon footprint. Similarly, lessons on developing the e-bidding system supported by RSDP was replicated across other GoN entities. RDSP also demonstrated lessons on managing stronger incentives for reducing time and cost overruns, ensuring maintenance after construction, and reducing administrative burdens. These are expected to be mainstreamed more broadly within the DOR for wider replication.

64. **Relying on local contractors to bear risks beyond their capacity impacts progress heavily in a complex environment.** A highlight of the project was that the DOR, based on its appreciation of national level challenges, packaged contracts to meet the needs of the local construction industry and advised the units accordingly. This improved competition, speed of implementation and contributed to the growth of the local construction industry. Contracts involving international contractors can help develop the national construction industry through transfer of knowledge on project management, site management, resource management and technology transfer. However, unless the lead partner manages the contract at site, there are likely to be delays in completion and even termination of contracts. Key lessons from RSDP show that the contract packaging strategy requires the assessment of not only the capacity of the contractors but also: (i) working terrain/ geography; (ii) weather conditions; (iii) accessibility/ distance between the bridges; (iv) availability of resources; and (v) transportation conditions for mobilizing resources.

ANNEX 1. RESULTS FRAMEWORK AND KEY OUTPUTS

A. RESULTS INDICATORS

A.1 PDO Indicators

Objective/Outcome: For the residents of beneficiary districts to have all season road access

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Enhanced resilience of RSDP roads	Kilometers	0.00 16-Jun-2016	20.00 30-Jun-2019	16.10 15-Jan-2020	0.73 15-Jan-2020

Comments (achievements against targets):
By the end of the Project period (Jan 15, 2020), the Project achieved 0.73 km of road upgradation against the revised target of 16.1 km. The contracts achieved weighted average physical progress of 18%. As of end-March 2020, the Project achieved road upgradation of 2.84 km with weighted average progress of 42%. *[Indicator pertaining to AF-II]*

Source: Based on progress report submitted by DoR.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Reduced bridge vulnerability	Percentage	74.00 16-Jun-2016	100.00 30-Jun-2019	100.00 15-Jan-2020	93.50 15-Jan-2020

Comments (achievements against targets):
There were 220 bridges being considered for major/minor maintenance works. Among them, 93.5% achieved a condition classification of 1 (ranking 7 and 8 ii.e. good condition) by the end of the Project closure date. *[Indicator pertaining to AF-II]*

Source: Bridge Condition Assessment carried out by DoR through Bridge Management System (BMS). Available at www.dor.gov.np

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Enhanced access as reported by beneficiaries	Percentage	0.00 01-Jul-2017	70.00 15-Jul-2019	70.00 15-Jan-2020	82.40 15-Jan-2020

Comments (achievements against targets):
By the end of the Project period (Jan 15, 2020), RSDP AF-II claims that 82.4% beneficiaries have reported improvement in accessibility in social and economic service facilities, reduce travel time, and improvement in economic development. Out of this, 78% represents women beneficiaries to have been benefited from the project intervention. *[Indicator pertaining to AF-II]*

Source: Project's Beneficiary Perception Report conducted by DoR on six completed bridges as of Jan 2020.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Percent increase in population in project districts to have all season road access within 20 minutes walking distance	Percentage	8.00 25-Jun-2007	14.00 21-Jan-2015		15.00 30-Jun-2016

Comments (achievements against targets):
The original target of 14% was achieved and marginally exceeded by 7%. The original target was not revised and there is evidence that at the time of the main restructuring in Sep. 2010, this indicator had progressed satisfactorily. *[Original Indicator]*

Source: SRDP Accessibility Study Report of Sep. 2014, based on a GIS analysis

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Employment generated	Number	0.00 25-Jun-2007	2500000.00 30-Jun-2015		6680000.00 30-Jun-2016

Employment generated-Male	Number	0.00 25-Jun-2007	2500000.00 30-Jun-2015		6017663.00 30-Jun-2016
Employment generated-Female	Number	0.00 25-Jun-2007	2500000.00 30-Jun-2015		663211.00 30-Jun-2016
Employment Generated-Dalit	Number	0.00 25-Jun-2007	2500000.00 30-Jun-2015		280907.00 30-Jun-2016
Employment Generated-Janajatis	Number	0.00 25-Jun-2007	2500000.00 30-Jun-2015		3280292.00 30-Jun-2016

Comments (achievements against targets):
Target was substantially exceeded by 170%. Employment as an indicator was introduced during the AF. Against the target of 2.5 million person-days, the project generated employment of 6.68 million person-days. This employment refers to direct engagement of people on road sites by contractors during the life of the project. The relevance or importance of this indicator is not elaborated in the project paper. *[AF-I indicator]*

Source: ISRs with inputs from GoN based on Contractors' Reports.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion

Percent decrease in journey times in the project area	Percentage	0.00 25-Jun-2007	35.00 21-Jan-2015		53.00 30-Jun-2016
Decrease in journey times in the project area to key economic centers	Text	4 hours	2.6 hours		1.9 hours
Decrease in journey times in the project areas to key social centers	Text	4 hours	3 hours		1.2 hours

Comments (achievements against targets):
The original target, which also remained unchanged, was exceeded significantly – by 51%. The report makes reference to markets and district headquarters as economic centers, whereas social services centers include schools, colleges, and hospitals. Although the original target was not revised, there is evidence that at the time of the main restructuring in Sep. 2010, this indicator had progressed satisfactorily well. *[Original Indicator]*

Source: GoN 2016 Impact Study on Project Roads.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Direct project beneficiaries	Number	200000.00 25-Jun-2007	800000.00 30-Jun-2015		752000.00 30-Jun-2016
Female beneficiaries	Percentage	0.00	53.00		53.00

			31-Aug-2017		

Comments (achievements against targets):
The target was underachieved, falling short marginally, by 6%. This indicator was added during the first AF. The underachievement can be explained by the slightly fewer-than-planned length of roads upgraded or rehabilitated. *[AF-I indicator]*

Source: *ISR of June 2, 2016 and GoN study based on GIS analysis.*

A.2 Intermediate Results Indicators

Component: Institutional Strengthening & Policy Reform

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Strengthened planning for SRN Roads and Bridges	Text	Last PIP Prepared in 2007 19-Apr-2016	Revised PIP endorsed 13-Jul-2018	Activity discontinued 10-Jun-2019	The activity was dropped from the Project scope. 10-Jun-2019

Comments (achievements against targets):
This activity originally envisaged further updating/revision of PIP based on road inventory survey mentioned above and the traffic data available with DoR, and, in turn, use it for identifying high priority investments or follow-up projects. However, as the inventory survey work was delayed and the Department's interest in carrying out this as part of this Project waned, the activity was agreed to be dropped during the restructuring carried out on Jun 10, 2019. *[Indicator pertaining to AF-II]*

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Public disclosure of grievance redress report	Number	0.00 01-Jul-2017	3.00 15-Jul-2019	3.00 15-Jan-2020	3.00 15-Jan-2020

Comments (achievements against targets):
By the end of the Project period (Jan 15, 2020), RSDP AF-II achieved its original set target by disclosing all three (3) grievance redressal reports for public access.

[Indicator pertaining to AF-II]

Source: Project progress report and public disclosure of grievances at DoR website: https://dor.gov.np/home/publication/road-sector-development-project-rsdp/grievnance-record-resolution-status-2-19

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Capacity building in Geo-technical, Environmental and Social aspects and create awareness on HIV/AIDS	Text	n/a	Capacity building in geotechnical, environmental and social aspects, and awareness creation on		a) Geotechnical assessments carried out b) Site specific EMAP and RAP monitoring being

			HIV /AIDS and planned activities carried out		done periodically c) Creating awareness among project construction workers and road users on HIV/AIDS is ongoing
		25-Jun-2007	30-Jun-2015		30-Jun-2016

Comments (achievements against targets):
The target was fully achieved. All the listed sub-activities have been completed. *[AF-I indicator]*

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Third party technical audit	Text	No third party verification	Third party technical audit carried out for 20% of the project works each year		Third party technical audit of upgrading and periodic maintenance works under RSDP has been carried out on selected contracts
		25-Jun-2007	30-Jun-2015		30-Jun-2016

Comments (achievements against targets):
The target was achieved. Third party technical audit of upgrading and periodic maintenance works under RSDP has been carried out on 20% of the project works. *[AF-I indicator]*

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Improved quality assurance	Text	n/a 25-Jun-2007	Quality monitoring plan prepared each year and quality audit carried out by Central Road Lab 30-Jun-2015		Central Road Lab has been carrying out internal quality road audits of the selected roads. Quality assurance has been monitored 30-Jun-2016

Comments (achievements against targets):
The target was achieved. The Central Road Lab is reportedly carrying out quality audits and monitoring quality assurance. The scope and periodicity of such activities, however, is not clear. *[AF-I indicator]*

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Improve staff capacity within DoR	Text	n/a	HR policy updated and 3-year training plan finalized		HR policy updated and 3-year training plan finalized. Domestic and international training provided for DoR staff as per policy

		25-Jun-2007	30-Jun-2015		and plan 30-Jun-2016

Comments (achievements against targets):
The target was achieved. HR policy updated and 3-year training plan finalized. Domestic and international training provided for DoR staff as per policy and plan. *[AF-I indicator]*

Component: Road and Bridges Development

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Major bridge maintenance	Meter(m)	0.00 16-Jun-2016	2000.00 30-Jun-2019	1500.00 15-Jan-2020	1500.00 15-Jan-2020

Comments (achievements against targets):
The combined weighted average physical progress of the minor and major maintenance contracts was 98%. For both the major & minor maintenance works funded by the Project, the physical targets of 1,500 m & 9,500 m respectively were achieved. *[Indicator pertaining to AF-II]*

Source: Aide-memoire of December 2019.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion

Minor bridge maintenance	Meter(m)	0.00 16-Jun-2016	9500.00 30-Jun-2019	9500.00 15-Jan-2020	9500.00 15-Jan-2020

Comments (achievements against targets):
The combined weighted average physical progress of the minor and major maintenance contracts was 98% . For both the major & minor maintenance works funded by the Project, the physical targets of 1,500 m & 9,500 m respectively were achieved by the end of the Project period (Jan 15, 2020) . *[Indicator pertaining to AF-II]*

Source: AIde-memoire of Dec 2019

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Bridge rehabilitation and replacement	Meter(m)	0.00 30-Jun-2016	750.00 30-Jun-2019	670.00 15-Jan-2020	145.00 15-Jan-2020

Comments (achievements against targets):
By the end of the Project period (Jan 15, 2020), the Project achieved 145 m completed bridges against the revised target of 670 m with overall weighted physical progress of 52%. Of the 31 (670 m) bridges targeted for construction, two bridges (25 m) were dropped as they were determined not to be feasible in the Project period. Of the balance 29 bridges (645 m), 6 bridges (145 m) were substantially completed and 9 more bridges (145 m) achieved a progress of above 70%. In the remaining 14 bridges, seven bridges (145 m) achieved a physical progress of above 40% and the progress in the balance seven bridges (210 m) was at below 40%. *[Indicator pertaining to AF-II]*

At the end-March 2020, the Project progressed with 5 bridges >80%, 9 bridges >70%. The bridges above 50% progress were expected to be completed before end- April, however, due to Covid-19 pandemic, the progress halted completely. The Project achieved overall weighted physical progress of 64%.

Source: ISR of Dec 2019 and borrower's completion report Jul 2020.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Roads rehabilitated, Non-rural	Kilometers	0.00 25-Jun-2007	297.00 30-Nov-2010	705.00 21-Jan-2015	680.00 30-Jun-2016

Comments (achievements against targets):
The original target of 297 km was achieved and exceeded by nearly 130%, the revised target of 705 km was slightly underachieved by 4%. The marginal underachievement was due to justifiable omission of road sections with peculiar technical challenges. Specifically the road sections had unstable slopes and would have required more resources to construct, thus reducing the achievable road length with the same amount of funding even further. These omitted sections have commendably been included as part of Second AF. *[Original+AF-I indicator]*

Source: ISR of June 2, 2016 and Aide-memoires.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion

2550 km of highways received periodic maintenance	Number	0.00 25-Jun-2007	450.00 30-Nov-2010	2550.00 21-Jan-2015	2595.00 30-Jun-2016

Comments (achievements against targets):
The original target was overachieved significantly, by 477%. The revised target was also overachieved, albeit marginally by 2%. A total of 2,595 km road length (Out of which 450 km was funded from original financing; 1,728km from AF and 417km by GoN) had been completed as of end-June, 2015. *[Original Indicator]*

Source: Aide Memoires and ISRs.

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Periodic maintenance of targeted highways and feeder roads backlog executed	Number	0.00 25-Jun-2007	1000.00 30-Nov-2010	1000.00 21-Jan-2015	1692.00 30-Jun-2016

Comments (achievements against targets):
The data is not well supported. Actual GoN funding dropped from US$58.5 million as planned to US$24.5 million. It is therefore unclear how the target would have been exceeded. Besides, the indicator seems to partly measure outputs related to Indicator 10 above. Indeed government did finance several periodic maintenance contracts (dubbed Year 1, Year 2, Year 3 etc.) but the monitoring thereof was not well documented. Based on the annual work reports, a total of 690 km appear to have received periodic maintenance: Year 1- 182 km; Year 2 and 3 - 268 km; and Year 4 – 244 km. *[Original Indicator]*

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
700 km of target roads received upgrading works	Number	0.00 25-Jun-2007	297.00 30-Nov-2010	705.00 21-Jan-2015	680.00 30-Jun-2016

Comments (achievements against targets):
This indicator is similar to the previous indicator on road rehabilitation. It should have been deleted. *[Original target]*

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Road Safety Action Plan & physical works	Text	No action Plan 25-Jun-2007	Road Safety Action Plan implemented and physical works carried out. 30-Nov-2010		Road safety action plan developed and approved and physical works carried out. 30-Jun-2016

Comments (achievements against targets):
The target was achieved. Road safety action plan was developed and approved, and is under implementation. All the physical works executed through 9 contracts have been completed. *[Original Indicator]*

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised	Actual Achieved at

				Target	Completion
Share of rural population with access to an all-season road	Percentage	7.60 25-Jun-2007	14.00 30-Jun-2015		15.00 30-Jun-2016
Number of rural people with access to an all-season road	Number	71500.00	131000.00		328144.00

Comments (achievements against targets):
The target was marginally overachieved, by 7%. This indicator is an amplification of PDO Indicator 1 and was not appropriate as an Intermediate Outcome Indicator. *[AF-I indicator]*

Component: Resilience Enhancements

Indicator Name	Unit of Measure	Baseline	Original Target	Formally Revised Target	Actual Achieved at Completion
Provision and staging of modular steel bridges for rapid response	Meter(m)	0.00 16-Jun-2016	1500.00 15-Jul-2019	1500.00 15-Jan-2020	1500.00 15-Jan-2020

Comments (achievements against targets):
The target was fully achieved. All 30 bridges (1500 m) were delivered.

Source: ISR of Dec 2019.

KEY OUTPUTS BY COMPONENT

Component	Key Outcomes or Outputs
Component 1: Road and Bridge Development	
Road Upgrading and enhancements	- 680 km of non rural roads rehabilitation completed during Original and AF I - 1.38 km of slope stabilization and 0.73 km of road rehabilitation enhancement on original RSDP roads completed during AF-II
Periodic Maintenance	2,595 km of periodic maintemance of highways completed
New Bridge Construction	Construction of 6 bridges comprising 145 m completed
Major and Minor Maintenance of bridges	1,500 meters of *major* and 9,500 meters of *minor* bridge maintenance completed
Component 2. Institutional Strengthening and Policy Reform	- Beneficiary Perception Survey completed—survey findings suggest 82.4% beneficiary have enhanced access - Three number of Grievance Redressal Reports completed and disclosed - Technical audit of 8 bridges completed through National Vigilance Center (NVC) - Inventory Survey of 12,000 km of SRN completed - Consulting support on Design and Supervision works - Four service vehicles were purchased - Design of Slopes/Upgradation Works and Supervision of Slope/Upgradation and bridges construction works - Procurement of 4 no. of service vehicles for institutional strengthening completed - Domestic and international training provided to DoR staff per updated HR policy and plan (AF I) - Capacity building on (i) Geptechnical and completed Geotechnical Assessments; (ii) E&S and periodic monitoring carried out for site specific EMAP and RAP; (iii) awareness on HIV/AIDS to project construction workers and road (AF-I) - Quality audits from Central Road Lab according to Quality Monitoring Plan - Road Safety Action Plan developed and executed
Component 3. Resilience Component	- Provision and staging of 1500 m (total 30 sets) of modular steel bridges completed - Procurement of thirteen heavy equipment for rapid response such as cranes, dozers, mix plants and excavators completed

ANNEX 2. BANK LENDING AND IMPLEMENTATION SUPPORT/SUPERVISION

A. TASK TEAM MEMBERS

Name	Role
Supervision/ICR	
Sri Kumar Tadimalla, Deepak Man Singh Shrestha	Task Team Leader(s)
Dipan Bose	ICR TTL
Shambhu Prasad Uprety, Chandra Kishor Mishra	Procurement Specialist(s)
Bishwa Raj Basaula	Financial Management Specialist
Jun Zeng, Alidu Babatu Adam, Jaya Sharma	Social Specialist
Drona Raj Ghimire	Environmental Specialist
Shubu Thapa	Team Member
Nagendra Nakarmi	Team Member
Neena Shrestha	Procurement Team
Ramesh Raj Bista	Procurement Team
Bibash Shrestha	Team Member
Tema Alawari Kio-Michael	Team Member
Hari Prasad Bhattarai	Team Member
Vishnu Prasad Shrestha	Team Member
Sunita Shakya Chitrakar	Team Member
Dron Pun	Team Member
Pradeep Shrestha	Team Member

B. STAFF TIME AND COST

Stage of Project Cycle	Staff Time and Cost	
	No. of staff weeks	US$ (including travel and consultant costs)
Preparation		
FY06	2.000	10,868.04
FY07	16.368	82,325.67
FY08	29.619	84,107.71
FY09	0	- 62.15
Total	**47.99**	**177,239.27**
Supervision/ICR		
FY08	19.354	67,327.20
FY09	38.871	133,118.57
FY10	41.206	183,169.77
FY11	50.578	179,844.42
FY12	36.955	118,181.41
FY13	33.701	126,191.41
FY14	29.735	264,667.04
FY15	21.463	126,862.52
FY16	9.858	78,182.19
FY17	22.677	217,128.80
FY18	28.298	247,162.76
FY19	34.909	168,748.23
FY20	31.001	122,503.22
Total	**398.61**	**2,033,087.54**

ANNEX 3. PROJECT COST BY COMPONENT

Project Cost by Component (in US$ Million equivalent)

Component	Original Estimate at the time of Appraisal				Actual Expenditure*				% of Appraisal
Original	Original	AF I	AF II	Total	Original	AF I	AF II	Total	
C1. Road and Bridge Development	**34.88**	**59**	**27**	**120**	**40.80**	**60.20**	**12.76**	**113.76**	**94%**
Road Upgrading	31.45	53	10[5]	95	30.50	43.40	9.94	83.84	89%
Periodic Maintenance	3.43	5	-	9	10.30	16.80	-	27.10	309%
Major and Minor Maintenance	-	-	17	17	-	-	2.82	2.82	17%
C2. Inst Strengthening and Policy reform Component	**6.66**	**13**	**8**	**27**	**9.30**	**7.10**	**3.78**	**20.18**	**74%**
# Refund of Project Preparation (PPA)/# Contingency	**1.00**	**4**	0	**5**	1.70	1.20	-	2.90	**60%**
C3. Resilience Enhancements	**-**	**-**	**20**	**20**	**-**	**-**	**14.5**	**14.5**	**72%**
Total	**42.53**	**75**	**55**	**173**	**51.80**	**68.50**	**31.04**	**151.34**	**88%**

Source: Financial Agreement and Department of Roads, Government of Nepal

***Notes*:** US$ Amounts in "estimate at the time of appraisal" are calculated using respective exchange rate as mentioned in the Financial Agreement. The total of Original project does not match in Financial Agreement ($42.53 mln) and PAD ($50.6 mln) because the costs, (i) incremental operating cost; (ii) physical contingencies; and (iii) price contingencies are not mentioned in the financial agreement

Saving Cancellations (i) In June 2011, an undisbursed amount of SDR 17.5 million under the AF Grant was cancelled and the same amount of funds were recommitted as new credit; (ii) ~US$ 7 million cancelled in January 2015 restructuring; and (iii) SDR 14.7 million, ~US$ 20 million saving cancelled in June 2019 (*AF-II*), transfer of UDS 8 million saving at the end of project period.

[5] Cost includes approx. US$ 6 million for 33 bridge construction

ANNEX 4. EFFICIENCY ANALYSIS (Economic Analysis)

Summary of Results and Conclusions from the Economic Analysis at the End of Project (for ICRR)

Economic evaluation was carried out for completed Road Sector Development Project (RSDP *AF-II*) Nepal covering three completed road sections with seal and slope stabilisation intervention totalling 4.81 km length. In the analysis, the '*with project'* improvement alternative was compared with the '*without project'* alternative of minimum maintenance of the existing road: "Do Minimum" i.e., (a) *Base case* (Without improvements and with annual *"Do Minimum"* maintenance), and (b) *Improvement Alternative* (with seal and slope stabilisation and annual "routine maintenance" supplemented by a periodical maintenance at five year intervals). The results of the economic analysis conducted considering (i) final completion costs, (ii) observed traffic growth during the period 2015-2020 and (iii) actual implementation period on completion of project packages and their sensitivity analysis after 20% reduction in benefits are summarized in Annex 4 provides further details of the economic analysis.

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The end-of-project EIRRs of the above road stretches of RSDP *AF-II* are in the range of 18.34% to 75.52%%, which indicates that all the completed road sections are economically viable. In all three road sections, the NPV discounted at 12% is positive. The combined three completed road AF-II sections have an EIRR of 26.72% and an NPV of $0.38 million, confirming the economic viability of the project. Under the sensitivity analysis, considering a 20% reduction in yearly benefits for the analysis period, the EIRRs for road stretches are in range of 14.21% to 65.66%, with a combined EIRR of 21.79%. The combined results for three roads at completion. estimated at 26.72%, is higher than the combined results for five roads estimated at appraisal at 13.3%.

The higher EIRR at completion is due in part to the higher traffic growth observed during the period 2015-2020. Against the 9.5% annual growth rate considered at appraisal for 2015-2020, the observed traffic growth was between 26.6% to 58.7%. In addition, costs at completion were lower than estimated at appraisal: the average project cost per km at appraisal was $138,980 per km compared to the completion cost of $119,277 per km (Table 5).Together these have resulted in increased savings on VOCs and travel time cost compared to the appraisal estimates. Completion stage EIRR of 26.72% for three roads, higher to the EOCC of 12%, confirms that the seal and slope stabilization of the roads is economically viable.

Table 5: Details of Project cost and Observed Traffic Growth Rates during 2015-2020

Road Section	Length km	Traffic Growth Rate			Traffic Volume (AADT) No. of Vehicles		Economic Intervention Cost [$/Km]	
		Processing stage Analysis	ICR Stage Analysis					
		(2015 - 2034)	2015-2020	2021 - 2034	At Appraisal (2015)	At Completion (2020)	At Appraisal (2015)	At Completion (2020)
Road 1: Khodpe-Chainpur	2.71	9.50%	26.60%	9.50%	149	388	1,17,470	1,21,719
Road 2: Chhinchu-Jajarkot	0.50	9.50%	58.70%	9.50%	258	1635	1,50,000	75,000
Road 3: Gokulesshore-Darchula	1.60	9.50%	33.20%	9.50%	130	409	1,50,000	1,28,933
Total	**4.81**						**1,38,980**	**1,19,277**

Summary of Previous Rounds of Economic Analysis

At the time of appraisal of the project, economic analysis was carried out for five roads with a total length of 18.235 km and with different improvement options within the roads (with seal and stabilize or stabilize only options). The existing carriageway configuration of all road sections was generally single lane gravel road. The economic viability of project sections due to improvement options was obtained considering reduction in vehicle operation cost and saving in travel time cost of passengers with respect to without improved project sections. The combined Economic Internal Rate of Return (EIRR) for all five road sections was 13.3%.

Approach and Methodology for the Economic Analysis for ICRR

The economic analysis carried out in 2015, at the project appraisal stage, was revised and updated for the Implementation Completion and Results Report (ICRR) with actual data as on completion of works. For this, three completed RSDP *AF-II* sections with seal and slope stabilisation intervention totalling 4.81 km road length are considered and analysed using the Highway Development and Management Model (HDM-4). Due to data availability constrains, bridge appraisal could not be considered in this PCR analysis.

The details of completed sections of RSDP *AF-II* and their improvement proposals are presented in Table 6.

Table 6: Details of Road Sections Considered for ICRR Analysis

Road section	At Appraisal (km)			At Completion (km)		
	Seal and stabilize (km)	Stabilize (km)	Total	Seal and stabilize (km)	Stabilize (km)	Total
Road 1: Khodpe-Chainpur	0.24	0.18	0.42	1.690	1.023	2.71
Road 2: Chhinchu-Jajarkot	0.51	0.00	0.51		0.499	0.50
Road 3: Gokulesshore-Darchula	0.30	0.00	0.30	1.15	0.45	1.60
Total	**1.05**	**0.18**	**1.23**	**2.84**	**1.97**	**4.81**

Cost increase for different improvement types is given above in Table 7. However, cost comparison for the road sections is attempted. The following Table 7 presents the variation in costs in the upgrading contracts from processing (2015) to project completion (2020).

Table 7: Comparison of Initial Cost (2015) and Completed Cost (2020) for selected Roads

Road Section	Length km	Project Cost US$/Km		
		At Appraisal (2015)	At Completion (2020)	Change %
Road 1: Khodpe-Chainpur	2.71	1,17,470	1,21,719	3.6%
Road 2: Chhinchu-Jajarkot	0.50	1,50,000	75,000	-50.0%
Road 3: Gokulesshore-Darchula	1.60	1,50,000	1,28,933	-14.0%
Total	**4.81**	**1,38,980**	**1,19,277**	**-14.2%**

Approach: The economic evaluation is carried out within the broad framework of social cost-benefit analysis assuming the analysis period of 20 years including the achieved construction period. There will be reduction in road user costs of motorized traffic (MT) upon the improvement of the existing road. The economic savings at significant levels in the following areas are expected to occur due to improvement of the existing roads.

- *Savings in VOCs*
- *Savings in journey time of passengers and goods*

The economic analysis is based on comparison of costs and benefits under two scenarios: 'without the upgradation project' and 'with upgradation road project'. All costs and benefits are valued in monetary

terms and expressed in economic prices to obtain the analysis on resource-based framework. The analysis is made section-wise and the results are expressed in terms of Economic Internal Rate of Return (EIRR) and Economic Net Present Value (ENPV).

Construction Program: The analysis period of the project has been taken as 20 years including construction time. The completed RSDP *AF-II* road sections were constructed during FY 2019 and FY2020 and the same is considered in the analysis. For the analysis purpose, it is assumed that traffic is opened on completion of all construction activities.

Procedure for Estimation of Benefits: The following procedure has been employed to estimate the aforesaid benefits:

- Estimation of processing stage traffic volume was from field surveys in 2015
- Estimation of completion stage traffic volume was from field surveys in 2020
- Estimation observed traffic growth rate during 2015 -2020 and projected traffic growth rates for the period from 2021 is adopted from the 'initial base analysis of 2015'
- The time values and other HDM IV model unit data used in the VOC / time value estimation at processing stage are retained.
- Usual maintenance provisions and costs in 'with' and 'without' conditions considered in processing stage analysis at 2015 prices are retained for the present ICRR
- Except the changed variables during implementation (construction cost and construction phasing, achieved traffic growth during 2015-2020, all other variables used during the processing stage were retained
- Base year used in processing stage analysis (2015) is retained for the present ICRR analysis and all completed costs were converted to the Base Year (2015)
- The model used for analysis is HDM-4
- EIRR and NPV Estimation with the sum of benefits from
    - VOC savings
    - Time savings

Components of Cost: From the financial costs of completed packages of RSDP *AF-II*, the economic cost has been worked out by multiplying the financial cost by a factor of 0.81, and is presented below in Table 8

Table 8: Details of Project Cost for Sample Roads

Road Section	Length km	Financial cost $/km	Economic cost $/km
Road 1: Khodpe-Chainpur	2.71	1,21,719	98,593
Road 2: Chhinchu-Jajarkot	0.50	75,000	60,750
Road 3: Gokulesshore-Darchula	1.60	1,28,933	1,04,435
Total	**4.81**	**1,19,277**	**96,614**

Maintenance Cost: The maintenance works considered in the analysis include:

- Annual *Routine* maintenance
- Periodic Maintenance

The financial costs and maintenance costs pertaining to maintenance operations considered in the processing stage is adopted for the ICRR analysis.

Traffic Specific parametric values: The economic unit costs (Year 2015) parametric values for motorized vehicles have been taken from the Base Analysis (2015) during the processing stage, are used in HDM Model inputs.

Volume of Traffic and Growth Rates: The AADT traffic on different road sections during 2015 and at completion stage in 2020 including the annual growth rates achieved during 2015-2020 are given below in Table 9. The observed traffic growth during the period 2015 – 2020 and the traffic growth used in the initial analysis (9.5%) from 2021 are adopted for the present analysis.

Table 9: Average Annual Daily Traffic (AADT) at Processing and Completion Stages

Road Section	Year	AADT (No. of vehicles)						
		Motorcycle	Car/ Van/ Jeep	Microbus	Bus/ Minibus	Light Truck/ Tractor	Heavy Trucks	Total
Road 1: Khodpe-Chainpur	2015	54	36	1	22	20	18	151
	%	*35.8%*	*23.8%*	*0.7%*	*14.6%*	*13.2%*	*11.9%*	*100.0%*
	2020	139	93	3	57	51	46	388
	CGR% 2015-2020	26.6%	26.6%	26.6%	26.6%	26.6%	26.6%	26.6%
Road 2: Chhinchu-Jajarkot	2015	122	41	1	43	36	15	258
	%	*47.3%*	*15.9%*	*0.4%*	*16.7%*	*14.0%*	*5.8%*	*100.0%*
	2020	773	260	6	273	228	95	1635
	CGR% 2015-2020	58.7%	58.7%	58.7%	58.7%	58.7%	58.7%	58.7%
Road 3: Gokulesshore-Darchula	2015	61	21	1	22	18	8	130
	%	*47.3%*	*15.9%*	*0.4%*	*16.7%*	*14.0%*	*5.8%*	*100.0%*
	2020	193	65	2	68	57	24	409
	CGR% 2015-2020	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%	33.2%

Project Benefits

Vehicle Operating Cost Savings: HDM - 4 has been used to estimate the Vehicle Operating Costs (VOC) for traffic in each vehicle category on each selected road *with* and *without improvement*. The model estimates VOC in both the with- and without-project situations considering the speed and travel time including surface quality and road congestion. The model comprehensively predicts the performance and operating costs of motorized vehicles in the selected fleet. Motorized vehicle performance predictions include speeds (free flow and congested conditions) and consumptions. Predictions for vehicle operating costs include fuel, oil, tire and parts costs, crew and maintenance labour costs, capital depreciation, borrowing costs, and overhead costs.

Travel Time Saving: The model estimates the Value of Travel Time (VOTT) for passengers and goods in transit in both the *with*- and *without*-project scenarios taking into account speed and travel time including surface quality, road congestion etc.

Economic Viability

The economic internal rate of return is calculated by the model applying a project discount rate of 12 percent to the annual undiscounted net differences of the economic elements considered in the analysis. The sum of these discounted values gives the net present value (NPV) of the project which is generated and presented, together with the associated EIRR from HDM output.

The results of section wise economic analysis conducted considering modified cost of project packages and their sensitivity analysis after 20% reduction in benefits are summarized in Annex 4 provides further details of the economic analysis.

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The EIRR obtained for road sections of RSDP *AF-II* are in range of 18.3% to 75.5% with the overall EIRR of 26.7%. EIRRs for all road sections were found with more than the minimum required 12%. Hence, it can be concluded that the project is found economically viable after absorbing the changes happened during the implementation like (i) decreased construction cost, (ii) observed higher traffic growth during the period 2025-2020 and (iii) experienced time delays. These results show considerable changes with respect to earlier study due to the following:

- Much higher annual traffic growth rates observed during the implementation period of 2015-2020, ranging between 26.6% and 58.7%, is the main reason for the increased EIRRs during the completion stage. For the same period, the annual traffic growth considered during the processing stage was only 9.5%.
- About 14% cost decrease from the cost considered in the initial analysis, as discussed above in Error! Reference source not found., is one of the main reasons for the higher EIRR at c ompletion stage.
- Implementation of seal and slope stabilization interventions were delayed by 1 – 2 years.

The sensitivity analysis is conducted after 20% reduction of yearly benefits for analysis period and EIRR obtained for road stretches are also more than required 12%. However, this decrease in project benefits is unlikely to happen due to following:

- As traffic is expected to grow to accompany the current economic growth
- there is little uncertainty on the cost of the works as all the contracts are nearing completion and the costs have been updated to take into account the price escalation as well as variations, and

VOCs are unlikely to be reduced in view of the past trend for the price of inputs such as fuel, lubricants, tires, and salaries

ANNEX 5. SIGNIFICANT CHANGES DURING IMPLEMENTATION

RSDP – Original	RSDP – AF I First Major Restructuring	RSDP – AF II 2nd Major Restructuring
PDO: *The objective of the Project is for residents of the Beneficiary Districts to have all-season road access, thereby reducing travel time and improving access to economic centers and social services.*		
Part 1: Road Development (i) Road upgrading works (297 km) (ii) Periodic maintenance works (450 km) (iii) Road safety audit of SRN to identify black spots and Road safety physical works to improve black spots (iv) Program of compensation, resettlement and rehabilitation of displaced Persons.	Part 1: Road Development **(Scaling up)** (i) Scaling up of road upgrading works (700 km) (ii)Scaling up of Periodic maintenance works (2550 km) (iii) Emergency maintenance for the slope protection and feasible pavement works to complete the ongoing upgrading works in selected districts (**New**) (iv) Road safety audit of SRN to identify black spots and Road safety physical works to improve black spots	Part 1: Road and **Bridge Development** (**Modified**) (i) Slope Stabilization and pavement sealing (20 km) (**modified**) (ii) Periodic Maintenance (2550 km) (iii) Emergency maintenance for the slope protection and feasible pavement works to complete the ongoing upgrading works in selected districts (iv) Road Safety audit of SRN to a. Inform the identification of high priority road safety investments for inclusion in and an updated PIP b. Identify black spots c. Carry out road safety physical works (v) Construction on approx. 33 bridges in selected SRN and replacement of three earthquake affected bridges with permanent structure in Central Development Region (**New**) (vi) Major maintenance of approx. 55 existing bridges (**New**) (vii) Minor maintenance of approx. 300 bridges in Central and Western Development Regio (**New**)
Part 2: Institutional Strengthening and Project Implementation Support (i) technical assistance and training to the Road Sector Skills Development Unit of DOR (ii) technical assistance and training to the Geo-Environment and Social Unit of DOR	Part 2: Institutional Strengthening and Project Implementation Support **(No change)** (i) technical assistance and training to the Road Sector Skills Development Unit of DOR (ii) technical assistance and training to the Geo-Environment and Social Unit of	Part 2: Institutional Strengthening and Project Implementation Support **(Modified)** (i) technical assistance and training to the Road Sector Skills Development Unit of DOR (ii) technical assistance and training to the Geo-Environment and Social Unit of DOR (iii) Upgrading of DOR field unit information technology (IT) assets and connectivity

RSDP – Original	RSDP – AF I First Major Restructuring	RSDP – AF II 2nd Major Restructuring
(iii) Upgrading of DOR field unit information technology (IT) assets and connectivity (iv) Integration and loading of existing roads databases and geographic information system (GIS) capabilities into a comprehensive networked road asset management system; (v) Undertaking of activities to improve road transport safety (vi) technical assistance and training to the Central Road Laboratory Unit of DOR (vii) technical assistance and training to the Mechanical Training Center of DOR (viii) technical assistance and training to RBN (ix) technical audits of the civil works carried out under the Project (x) Project implementation support (xi) Undertaking pre-investment studies for the preparation of a follow-up project in road sector	DOR (iii) Upgrading of DOR field unit information technology (IT) assets and connectivity (iv) Integration and loading of existing roads databases and geographic information system (GIS) capabilities into a comprehensive networked road asset management system; (v) Undertaking of activities to improve road transport safety (vi) technical assistance and training to the Central Road Laboratory Unit of DOR (vii) technical assistance and training to the Mechanical Training Center of DOR (viii) technical assistance and training to RBN (ix) technical audits of the civil works carried out under the Project (x) Project implementation support (xi) Undertaking pre-investment studies for the preparation of a follow-up project in road sector	(iv) Integration and loading of existing roads databases and geographic information system (GIS) capabilities into a comprehensive networked road asset management system; (v) Undertaking of activities to improve road transport safety (vi) technical assistance and training to the Central Road Laboratory Unit of DOR (vii) technical assistance and training to the Mechanical Training Center of DOR (viii) technical assistance and training to RBN (ix) technical audits of the civil works carried out under the Project (x) Project implementation support (xi) Undertaking pre-investment studies for the preparation of **one or more high-priority** follow-up project in road sector **as identified in updated PIP** (**modified**) (xii) Technical assistance and training to improve planning of DOR's capital investment program and the execution of physical works projects including (a) training and capacity development of DoR/MoPIT; (b) Updating PIP for future development of SRN; (c) carryout beneficiary outreach and feedback collection (**New)**
-	-	Part 3: Resilience Component **(new component added)** (i) Modular steel Bridges (approx. 1600 meters) at selected DoR staging site for rapid response to unforeseen failures along the SRN (ii) Standby equipment at selected DoR staging site for rapid response to unforeseen failures along the SRN

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ANNEX 6. Efficacy Analysis Summary (Original and AF-I)

PDO Outcome Indicators	
Indicator Description	**Target Achievement**
Journey time in the project areas to key economic centers	Decreased from 4 hours to 1.9 hours, a decrease of 53% far exceeding the appraisal target of 35% reduction
Journey time in the project areas to key social services centers	Decreased from 4 hours to 1.2 hours, a decrease of 60% far exceeding the appraisal target of 25% reduction
Population in project districts with all season road access within 20 minutes walking distance	Increased from 8% to 15% exceeding the appraisal target by 7%
The number of direct project beneficiaries within 4 hours walking distance	Increased from 200,000 to 752,000. The appraisal target was underachieved by 6%. This is explained by the slightly fewer-than-planned length of roads upgraded or rehabilitated.
The percentage of roads in good and fair condition as a share of total classified roads	Increased from 82% to 88.7%, slightly lower than the original target of 90% but higher than the revised target of 85%.
Employment generated	Project generated employment of 6.68 million person-days (male employment 6,017,663, female employment 663,211, and Dalit 280,907), exceeding the AF target 2.5 million person-days by 170%
Intermediate Outcome Indicators	
Indicator Description	**Target Achievement**
Share of rural population with access to an all-season road	Increased from 7.6% to 15% marginally overachieving the target by 7%.
Number of rural people with access to an all-season road	Increased from 71,000 to 328,000, far exceedingly the target of 131,000 by 150%
Roads in good and fair condition as a share of total classified roads	Increased from 82% to 88.7%, slightly lower than the original target of 90% but higher than the revised target of 85%.
Road asset management tools used for prioritization of road maintenance and upgrading works	The original target to use HDM 4 was not achieved. The interim ICR reports that the efficacy of using road inventory for the preparation of annual road maintenance plan cannot be ascertained.
Improved quality assurance	Target achieved with the Central Road Lab reportedly carrying out quality audits and monitoring quality assurance

ANNEX 7. BORROWER, CO-FINANCIER AND OTHER PARTNER/STAKEHOLDER COMMENTS

The GoN submitted a detailed Borrower's Completion Report both with updated data and information included in the main body and annexes of this ICRR. Below are three sections (verbatim) of the Borrower's Completion Report that provide a concise overview of Bank and Borrower performance, lessons learned, and overall observations. It is noted that the Borrower's Completion Report focused on the *AF-II* phase of the project, as an interim completion report was submitted previously to report on the period till the end of *AF-I* and has been summarized in the interim ICRR report.

Performance of Borrower

Government of Nepal is the borrower and Ministry of Physical Infrastructure and Transport is the executive agency and Department of Roads is the implementing agency of this project. On behalf of Departments of Roads, Deputy Director General of Development Cooperation Implementation Division manages the project and Senior Divisional Engineer is the Project Coordinator. Project Coordination Team includes engineers, account staffs and other supporting staffs.

Performance of Government

Government as per its road transport policy has approved RSDP *AF-II* as a key infrastructure development project for mid-western and far-western development regions of the country and also to enhance the resilience of the institution for post-earthquake situation. The main responsibility of the government is to ensure adequate annual budget for the project and to create conducive environment at project site and in project management offices for smooth implementation of the project activities. Likewise, the government plays a vital role in coordinating inter-ministerial, inter-departmental and inter-agencies for resolving project issues and problems related to them.

In most cases government has extended maximum support to the project and encouraged for speedy implementation. Allocation of overall annual budget and government counterpart fund was never a problem. However, the budget amendment process through LMBIS (Line Ministry Budget Information System) and approval process is bit time consuming.

In overall performance of the government towards the execution Road Sector Development Project Second Additional Financing is always positive, encouraging and sensitive.

Performance of Executive Agency

Ministry of Physical Infrastructure and Transport (MOPIT) as an executive agency plays a pivotal role in implementing the project in smooth manner. Guidance and instruction from MOPIT were always found to be very fruitful and constructive. It has provided important support to prepare annual work program, financing plans and other policy level activities. Deputation of required project staffs is also done by the ministry. MOPIT carries out monitoring and evaluation of the project in regular basis. Since MOPIT being a line ministry all important communication between project and government are done through this office.

However, there is lack of sufficient number of technical staffs at MOPIT which may hinder the frequent monitoring process. Monitoring and evaluation mechanism adopted by the ministry is not adequate and it needs basic improvement for better feedbacks to the project.

Frequent transfer of project staffs in different levels has hampered the project progress in many occasions. This has been mentioned in Bank's aide memoires several times. Project staffs should be designated for fixed time period so that the activities can run in systematic manner.

Performance of Implementing Agency

Implementing agency has established a separate project coordination team at Development Cooperation Implementation Division. Deputy Director General is responsible for the overall coordination and monitoring of the project. Senior Divisional Engineer is the Project Coordinator for RSDP. The team is supported by the subordinate staffs and equipped all logistic facilities. However, the team has been disturbed repeatedly by discontinuity of supporting staffs, less experience in donor funded projects and even frequent transfer of higher authorities within the Department. This has resulted in delayed preparation of implementation progress reports, audit reports and other technical and financial reports. A separate field level PIU office for overall management of construction supervision works of Bridge Construction and Road Upgradation/Slope Stabilization job could not be established and the job was given to different Road Division Offices. This caused lacking in coordination, decision making processes and lack of environmental and social sensitivity among different staffs caused delay in decision making processes. Due to lack of well experienced staffs, financial management and even other works management had been cumbersome job and reporting system was occasionally late and incomplete. Monitoring of such activities was a problem. Likewise, institutional strengthening component activities are also managed by respective branches and units of the Department and structured monitoring is lacking. Department has to improve the monitoring and evaluation mechanism in order to streamline widespread activities and to achieve the project goal.

Performance of the Bank

The World Bank is always supportive to the RSDP *AF-II* project and has provided necessary assistance to make the project success. Bank's persistent and continuous effort has helped to resolve many issues and problems raised during the implementation. Particularly safeguard compliance issues were minutely addressed by Bank mission team while visiting the site and discussing with concerned authorities. The monitoring work carried out by the Bank is commendable. Comments, remarks, advices and recommendations provided in aide memoire after each mission were very fruitful for solving issues, expediting project works and streamlining the outstanding problems and lagging activities. Bank's endeavor for maintaining the technical, financial, institutional, social and environmental discipline as agreed in PAD and grant/credit agreements has established definite norms and motivated the project staffs including consultants and contractors. As a result, despite of various impediments project objectives have been achieved to great extent. All the time missions' attitude and their suggestions were within the agreed standards and norms and were directed to the success of the project

Road Sector Development Project Additional Financing Second is being implemented since December 2016 and it covers remote hilly areas of Mid-western and Far-western Development Regions of Nepal for Bridge Construction and Road Upgradation. Its scope of works includes mainly Road and Bridge Component, Institutional Strengthening and Resilience (Modular bridge and standby equipment). Road upgrading and slope stabilization, Bridge Construction and institutional strengthening are dynamic activities DOR is regularly performing and updating with new technology. Likewise, national construction industry has also gained substantial experiences and opportunities for enhancing its capacity and capabilities. Some of the major lessons learnt from the project are as follows:

a. Project development objective adopted by RSDP *AF-II* is very relevant for providing reliable and safe all-weather access to poor people from remote hilly areas of the country. Similar objectives have to be continued in future as well by the government policies and departmental targets.
b. Project Implementation Unit should have been established near construction sites so that easy coordination and implementation could have been maintained.

c. The Project envisaged to make 700 Km of RSDP Roads all seasoned and durable. The final approval of the design work submitted by the Consultant for Slope Stabilization and Road Upgrading works took longer duration as the design did not completely fit at site demanding subsequent design review. However, the loan closing date was close, and the new contract could not be floated for Surkhet-Jumla Section. If there had been certitude of time extension of loan closing date, borrower could have taken more steps towards making that longer section of the road all seasoned and durable. The initial duration of the RSDP *AF-II* was about two and half year and later it was extended by six months. Nevertheless, it was strongly felt that the project duration could have been extended with a view of distribution of the location of the construction areas at remote section of Nepal and prevailing limitations of construction industry of the country.
d. Progress of Bridge Construction work was lagging seriously. However, due to combined effort from DCID and World Bank, the authorized representatives of JV partner of Contractors were forced to take part in construction job and accelerate the progress. Due to this effort, the progress of the bridges again started rising. This intervention was very good lesson learning for upcoming other projects.
e. The Site Incompatibility of few bridges caused delay in implementation of construction. However, some bridges with relatively higher or lower deck height with respect to approach road were later improvised by adjusting grade of the approach road. Therefore, site compatibility of any bridges should be checked before the commencement of the work so that the issues can be addressed timely.
f. Road safety component should be included in all roads upgrading and slope stabilization contracts more aggressively so that accident rate could be minimized. It should be integrated with safety awareness programs to be conducted in different levels and groups.
g. Procurement of 30 sets of Modular Bridge is the first huge procurement for the supply of Goods for Department of Roads. Such procurement enhanced the DoR personnel with the capacity in Procurement of Goods.
h. Small sized civil contracts have attracted many national contractors, whereas it failed to attract international contractors. Contracts involving international contractors can help to develop national construction industry through transfer of knowledge in terms of project management, site management, resource management and technology transfer.
i. Joint venture provision in civil contract should be elaborated in the sense that capable and lead partner manages the contract at site. Otherwise, in many occasions it was found that the inferior/junior partner handles the contract and lots of problems and issues crop up due to lack of experience and competency resulting delay in completion and even termination of the contract.
j. Coordination with all stakeholders including road users, road neighbors, government offices, private agencies and other public institution is very essential for the success of project. Project information should be transparently disseminated to all stakeholders in every stage of project so that they can understand the project objectives and accordingly contribute their effort for the success of project.
k. Acquisition of land, public and private properties required for the project is very difficult task, which needs lots of coordination and cooperation among various agencies. Concerned district

administration office, land revenue office, district survey office, forest office, project affected persons and local consultative forums should be made aware of all project objective, construction activities, schedules and plans for carrying out the project works. They should be convinced that without successful completion of land acquisition and resettlement action plan construction work cannot be implemented.

l. For the smooth implementation of any donor assisted construction project it is very essential that the concerned government offices such as Ministry of Finance, Finance Comptroller Office, and Auditor's General Office etc are aware of project details including grant/loan agreements and their conditions.

m. Programmatic approach for the implementation of the project will help to solve many issues developed during the project period. Institutional commitment from concerned agencies shall be assured so that implementation process can be expedited.

n. There are many incidents which affected the implementation of project such as adverse weather condition, strike/bandh called by different local and national groups, shortage of construction materials including fuel due to various reasons and even unforeseen site conditions. Conditions of contract of civil works should explicitly spell out the provisions and solutions for such incidents so that the issues could be resolved without losing the time.

Conclusion

Implementation of Road Sector Development Project Additional Financing has revealed that such infrastructure development project can deliver lots of benefits to the people of remote hilly areas of Nepal. Government should encourage preparing such infrastructure development projects in cooperation with bi-lateral and multi-lateral donor agencies so that more and more all weather, safe and locally sustainable road access will be available for poor people from remote areas. However, such project could have benefitted more of the funds if the flexibility on loan closure duration could have been adopted. The World Bank as an important and major development partner should continue to work together with the government in such types of vital projects which will support to alleviate poverty in remote rural areas and help to promote the overall social and economic development of the area.

ANNEX 8. List of Supporting Documents

- **Aide Memoires**
  - February 25-March 22 2007
  - June 3-12 2007
  - September 10-18 2007
  - March 9-13 2008
  - October 15-23 2009
  - March 12-19 2010
  - August 30-September 6 2010
  - December 19-28 2010
  - July 16-26 2011
  - July 23-27 2012
  - February 4-8 2013
  - August 26-September 4 2013
  - March 20-31 2014
  - September 16-26 2014
  - January 19-28 2015
  - July 29-August 6 2015
  - February 29-March 4 2016
  - September 1-9 2016
  - March 14-24, 2017
  - August 17-25, 2017
  - February 15-28, 2018
  - April 15 to May 9, 2019
  - November 18- December 9, 2019
- Country Partnership Strategy for Nepal, FY 2014-18, Report No. 83148-NP
- Financing Agreements – Road Sector Development Project
- January 31, 2008, Grant No. H339-NEP
- March 4, 2011, Grant No. H629-NP, Credit No. 4832-NP, (AF)
- Implementation Status and Results (ISR) Reports: Sequence 1-15
- Interim Strategy Note for Nepal, January 22, 2007, Report No. 38119-NEP
- Implementation Completion and Results Report (Interim), December 22, 2016
- Ministry of Physical Infrastructure and Transport, Department of Roads, Road Sector
- Development Project, Second Trimester Report of FY 2015-16
- Nepal Road Sector Assessment Report, 2014
- Nepal: Transport Sector Policy Note, March 31, 2014
- Project Appraisal Document on a Proposed Grant in the Amount of SDR 27.8 Million
- (USUS$ 42.6 Million Equivalent) To Nepal. For a Road Sector Development Project, Sustainable Development Department South Asia Region, Report No. 40698 – NP, November 6, 2007
- Project Paper on a Proposed Additional Credit in the Amount of SDR 26.60 Million
- (USUS$ 41.26 Million Equivalent) and Proposed Additional Grant in the Amount of SDR 21.70 Million (USUS$ 33.74 Million Equivalent) to the Government of Nepal for a Road Sector Development Project, Sustainable Development Unit, Nepal Country Unit, South Asia Region, Report No: 57154-NP, October 27, 2010

ANNEX 9. PROJECT TIMELINE AND MAPS

Figure 2 RSDP Project timeline with other WBG transport engagements and country context events.

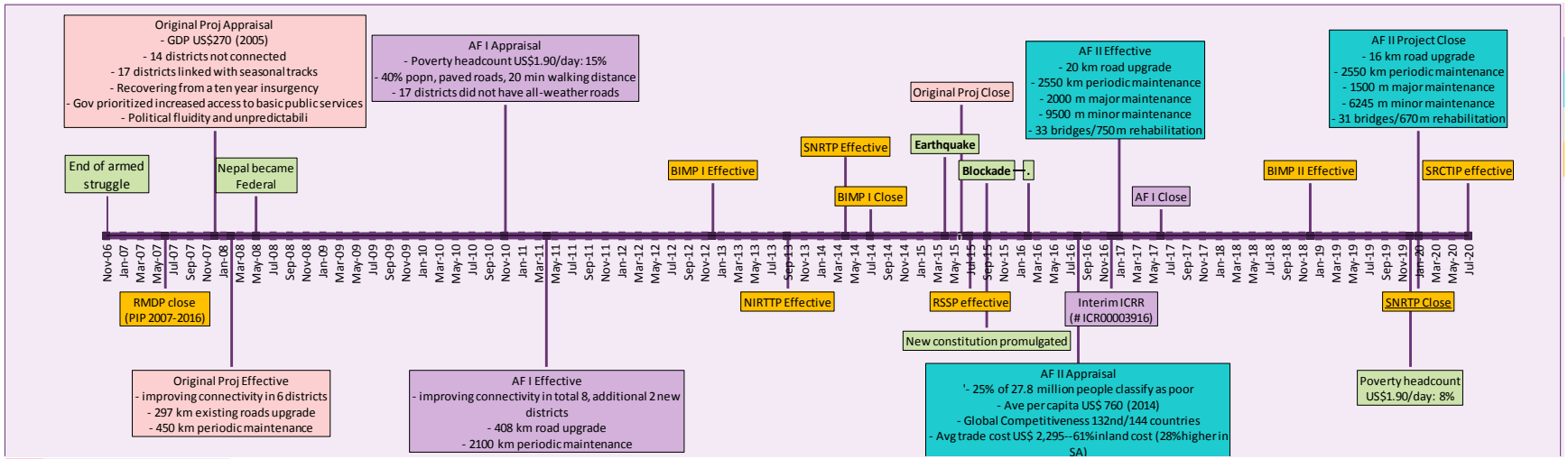

Figure 3: MAP: Location of Bridge Maintenance and Planned New Bridges (AF-II)