

Semi-annual Report

August 2020

PNG: HIGHLANDS ROADS IMPROVEMENT INVESTMENT PROGRAM (HRRIP) – TRANCHE 3

HENGANOFI-NUPURU ROAD SUB-PROJECT

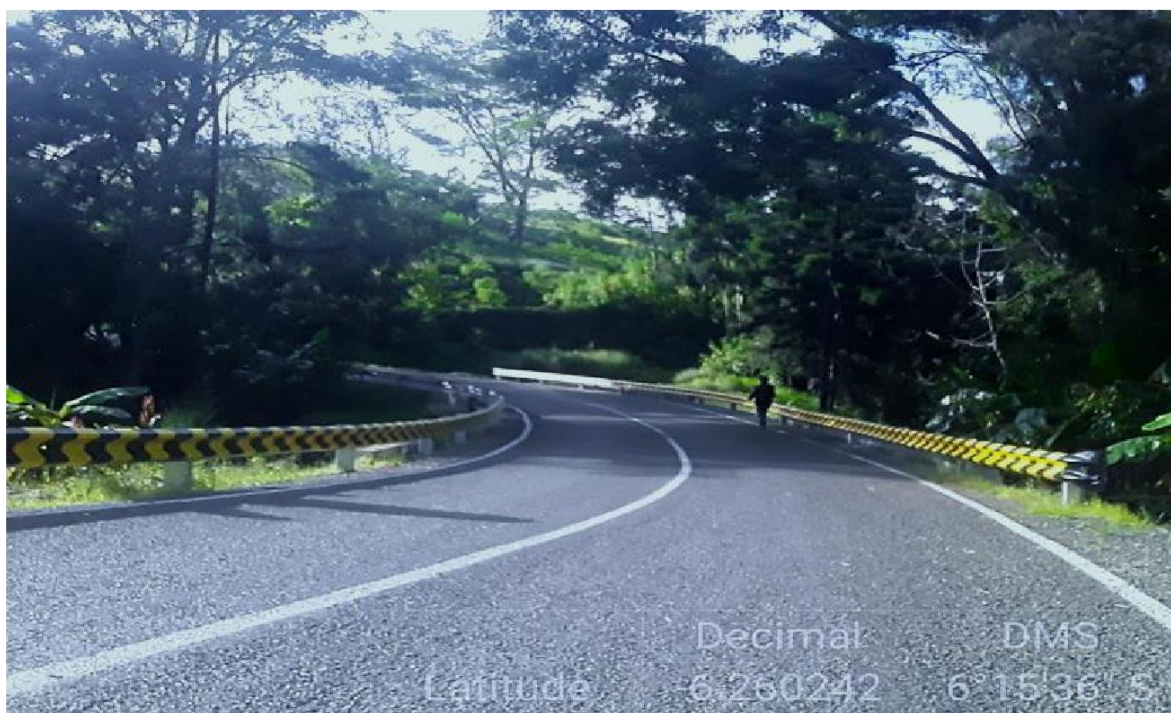
Prepared by Highlands Road Management Group (HRMG), Department of Works for the Asian Development Bank

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**PNG: HIGHLANDS REGION ROAD IMPROVEMENT
INVESTMENT PROGRAM (TRANCHE 3)
CSTB# 3533**

Henganofi-Nupuru Road Sub-Project



Prepared by Highlands Road Management Group (HRMG) of the Department of
Works for the Asian Development Bank

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FACT SHEET

Loan	ADB Loan: 3404/3408 and Grant 0485 PNG
Project Number	CSTB 3533
Subproject	Henganofi – Nupuru Road Subproject
Executive Agency	<p>The Department of Works (DOW) is the executing agency for the Highlands Region Road Improvement Investment Program (HRRIP). It has overall responsibility to manage the planning, implementation and monitoring for all road improvement works including environmental management and environmental compliance monitoring... It also includes the acquisition of use rights for additional land to implement HRRIP subprojects, as well as compensation for damages on project-affected land DOW is also responsible for reporting to ADB and the recruitment of the organization to conduct independent monitoring</p>

Implementing Agency Unit	<p>The DOW will also be the Implementing Agency for the road improvement works. The DOW has delegated to the Highlands Road Management Group (HRMG), the responsibility to carry out the planning, implementation and monitoring for environmental management and environmental compliance monitoring, land acquisition and/or resettlement activities, as required. The more relevant delegated responsibilities include the following.</p> <p>Prior to the commencement of civil works:</p> <ul style="list-style-type: none"> ▪ Submit and indorse environmental assessments required for regulatory approval of the CEPA and require the contractor to obtain approval, e.g., environmental clearance, environmental permit or permits from other statutory authorities as required by the Government. ▪ Ensure that all regulatory clearances for the subproject are obtained from the relevant government authorities and are submitted promptly to ADB. ▪ Ensure that the EMP is updated based on detailed design and included in the bidding document of the subproject and that all bidding contractors have access to the environmental assessments and EMP. ▪ Ensure that the EMP and all required mitigation measures during construction, including conditions stipulated in the CEPA's clearance or environmental permit, are included in BCD with requirements to update the EMP in response to any unexpected impacts and ▪ That all selected contractors have agreed
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	<p>to implement in full the requirements of environmental mitigation measures prescribed in the EMP</p> <ul style="list-style-type: none"> ▪ Provide training as required to HRMG in Mt Hagen and contractor; ▪ Receive environmental safeguard clearance on subproject(s). ▪ Provide training to contractor prior to preparation of CEMP, safeguards requirements of ADB and regulatory requirements of CEPA. ▪ Approve CEMP for the subproject, after being cleared by PSC. <p>During the implementation of civil works:</p> <ul style="list-style-type: none"> ▪ Ensure that the CEMP including all proposed mitigation measures and monitoring and relevant provisions of the environmental assessments is updated as required, ▪ Conduct environmental management and compliance monitoring on a monthly basis in cooperation with the PSC. ▪ Review and assess the contractor's monthly environmental monitoring report and compliances as contained in the CEMP. ▪ Assist the Engineer in the compliance of the submitted CEMP. ▪ Prepare the quarterly and semi-annual reports in cooperation with the PSC for submission to DOW and ADB.
Coverage of the Environmental Monitoring Report	January to June 2020

1.0 EXECUTIVE SUMMARY

1. This Semi-Annual environmental monitoring report for the year of 2020 covers the period of activities implemented by China Wu Yi Ltd from January to February 2020 respectively for Henganofi-Nupuru Road Subproject CSTB# 3533. This report was carried out by the DOW through the Highlands Road Management Group (HRMG) and the monitoring results will be communicated to ADB through this report.
2. Henganofi-Nupuru sub-project road is one of the 4 sub-projects of Tranche 3 of the Highlands Region Roads Improvement Investment Program, an ADB assisted road program. The sub-project is covered by CSTB contract # 3533 entered into by the Independent State of Papua New Guinea represented by the Department of Works and China Wu Yi LTD.
3. The purpose of this semi-annual report is to present the updated status of the environment including compliance with the approved CEMP in respect of the Henganofi – Nupuru road section covering January to June 2020. Semi-Annual environment safeguards monitoring reports is a requirement under the SPS. In addition, the report provides a clear picture with regard to the future implementation of CEMP activities as well as the environmental outcome.
4. Moreover, the report serves the client, ADB and other organisations to understand the environmental management process, its outcome, the corrective actions that are required and the impact of such actions on the environment.
5. The project is nearing completion by mid-February since it started in 18th November 2017. All earth works are completed. The contractor is now concentrating on the road base and sealing plus road installations which are done by sub-contractor GLC enterprise.
6. In October 2019, the aggregates extraction site at Upegu quarry was terminated and closed for rehabilitation. In November 2019 another quarry was established about 1km upstream near the Bena River bridge on the main highway wherein the contractor extracts its materials in Bena Bridge quarry. Hence, the contractor has already submitted the Quarry Closure and Rehabilitation Plan for Upegu quarry with complete documentations attached. The Project Supervision Consultant has already reviewed, inspected, validated and approved in February 2020.
7. The existing issue and tension at Ch. 32+700 up to Ch. 34+000 has calmed down hence, the works has resumed in January all the way to end of project.
8. Since the project is about to end by middle of February 2020, earth works, four bridges and culverts were all completed. Therefore, the Contractor is now working on base courses, sealing and other road installations like gabions and line drains.

Table 1: Showing the status of Road Construction Activities Progressed on the environment in January 2020.

Activity	Remarks of Chainage reached in the month of January	Estimate percentage completion rate
i. Cleaning / Grubbing	✓ Completed early March,2018	✓ 100%
ii. Cut & Fill, Embankment &Capping	✓ This month, all these activities were performed within Km33- 34 and it reached its completion stage.	✓ 100 %
iii. Slope protections (Gabion, Retaining walls).	✓ Final gabion basket is constructed on Km 24+300 while others are completed.	✓ 100%
iv. Culvert Installation	✓ A culvert at 33+630 which was previously cancelled when then re-approved due to the site condition and installed this month.	✓ 100%
v. Line drain Construction	✓ Line drain has reached kilometer 34. They are working on incomplete line drain and re-work on demolished line drains along the project road corridor.	✓ 100 %
vi. Sub Base	✓ Sub-base has reached Km 34	✓ 100%
vii. Road Base	✓ Road Base has reached Km 34. It's completed.	✓ 100 %
viii. Priming and Sealing	✓ Has reached km 34+04 (end). Priming and first coat sealing were completed while second sealing is expected to be completed as soon as possible.	✓ Prime= 100 % ✓ 1st Coat Sealing with 19mm=100% ✓ 2nd Coat/final with 13mm =94%
ix. Bridge	✓ Bridge 1, 2, 3& 4 were all completed.	✓ 100 %
x. Others	✓ Road Furniture including other necessary work is on-going	✓ Expected to be completed before 15 Feb, 2020.

9. Throughout the project period, Fore Health Centre, the Service Provider has been consistent in providing HIV/AIDS & STDs awareness activity per month. The outcomes of these awareness have impacted the targeted group of people along the road corridor, as they have shared their thoughts during question times at the awareness activity. And these awareness programs have enlightened them to protect themselves from HIV/AIDS & STDs throughout the project period and even in the future while enjoy the good road condition.
10. The daily construction activities that were undertaken throughout the monitoring period were guided by its CEMP and other sub-plans which have been approved by CEPA through the aid of CSC to ensure compliances and environmental sustainability as road construction activities progresses from chainage to chainage.

2.0 INTRODUCTION

2.1 Background

11. The GoPNG has negotiated a Multi-Tranche Financing Facility (MFF) loan with the Asian Development Bank (ADB) to implement the Highlands Region Road Improvement Investment Program (HRRIP) in tranches. The HRRIP includes projects to improve the HCRN, the preparation of long-term maintenance contracts for the HCRN, and the capacity development of road agencies. In total, 13 road sections are expected to be funded under the program.
12. Project 1 has included the improvement to two road sections and Project 2 is currently being implemented to upgrade three road sections while Project 3 proposes to rehabilitate four road sections comprising 113.3 km of the HCRN.
13. The Execution Agency (EA) for the program is the Department of Works (DOW) whilst the Highland Region Management Group (HRMG) is the Implementation Agency (IA).
14. Tranche 3 (ADB 3043/3408 and EU Grant 0485) include the upgrading, rehabilitation and maintenance of four road sections one of which is Henganofi-Nupuru Road in the Eastern Highlands Province.
15. The rehabilitation of the Henganofi to Nupuru road in the Eastern Highlands province has a length of 33.96 km. The works proposed for the upgrading and rehabilitation of the Henganofi to Nupuru Road such as earthworks, establishment and operation of quarry sites and extraction of materials, minor civil works and discharge of wastewater are Level 2 activities under the EPAR and may require an EP depending on the duration and scale of those activities.
16. The contract was awarded in March 4, 2017 to China Wu Yi LTD (CWYC China) and civil works started in October 2017 following the contractor's mobilization. The construction period of the project is 24 months. The Long-Term Performance Based Maintenance Services is 60 months from the issuance of the Performance Certificate for the Improvement Work.
17. The Henganofi-Nupuru Road Section is covered by CSTB contract # 3533 entered into by the Independent State of Papua New Guinea represented by the Department of Works and China Wu Yi LTD (CWYC China).

2.2 Sub-Project Description

18. The road from Henganofi to Nupuru, passing through Fayantina, is approximately 34 km in length. The road commences at the junction with the Highlands Highway, approximately one kilometre from Henganofi Station and ends at the junction with the Lufa road in Nupuru. The road serves the Henganofi and Lufa Districts of Eastern Highlands Province which together have an average population of 40,000. The road is the only link from the two districts to Goroka and Kainantu townships and hence improvement is vital to the economic development of the area and the delivery of fundamental services to the population.

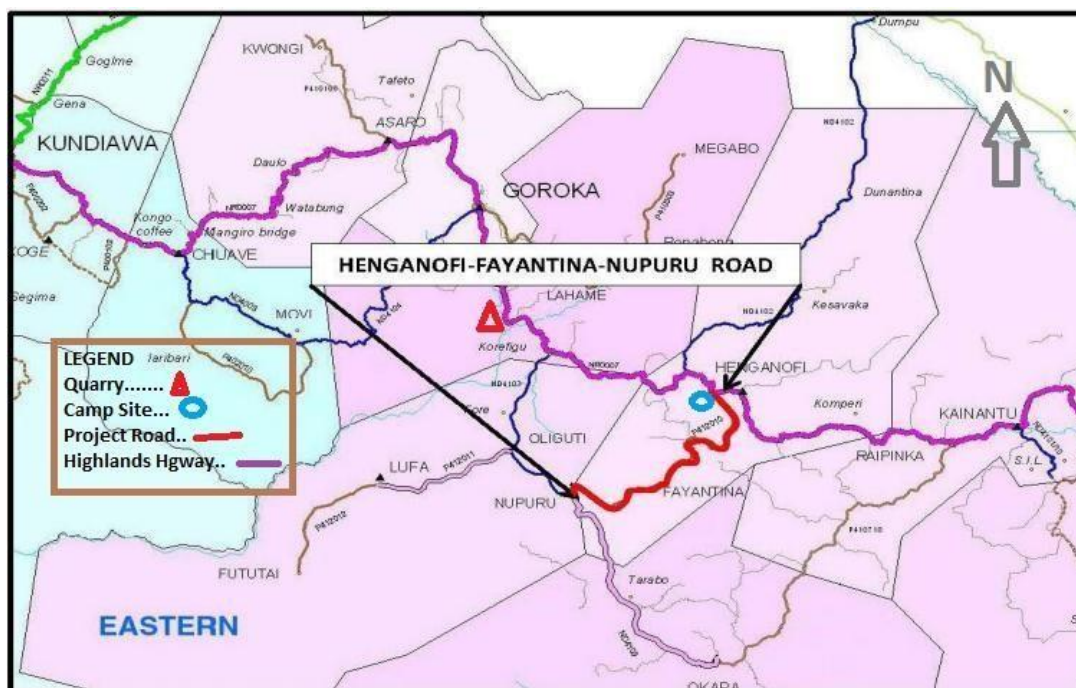


Figure 1 Location Map of Henganofi Nupuru Road

19. The Henganofi – Nupuru road was initially a walking trail which since the late 1960s or early 1970s has gradually been opened to provide the current road. The route traverses mountainous terrain and extensive sections of the alignment follow ridges. Elsewhere, the route is benched into sidelong ground and comprises a twisting alignment with steep gradients at the approaches to river and creek crossings. Improvement of either the horizontal or vertical alignment would not be economically justified at the present time.
20. The route crosses a total of 4 rivers and 3 major creeks on existing bridges. Two of these bridges are of comparatively recent construction and will require only minor maintenance whereas the remaining structures will require rehabilitation of the superstructure, the provision of steel decking to replace the existing timber and the provision of pedestrian facilities across the bridges. One new bridge is required.
21. The route passes through 11 villages/tribal settlements, the largest of which is Pore that acts as a local centre for the population living within the middle third of the road length and the immediate surrounding area. There are also numerous junctions along the road with local roads connecting to the interior.
22. The first 20 kilometres of the road primarily follows a ridge top alignment and the landscape is dominated by swathes of grassland with occasional secondary growth of trees, generally

around settlement areas and individual homes. In the section of the road from km 20 to the end at Nupuru, the local tribes have made extensive plantings of pine trees.

23. The entire length of the road corridor has been extensively disturbed by human habitation and the activities of clearance for cultivation, the gathering of wood for fuel and hunting for food, hides and feathers for ceremonial purposes. As a consequence, there are no natural habitats of significance immediately adjacent to the road corridor and within the areas which will be affected by the proposed improvement works.
24. The Eastern Highlands province plays host to the Crater Mountain WMA and is located southwest of the Henganofi Nupuru road.
25. The environmental impacts assessed at the time of preliminary design categorised the subproject as Category B for environment. The same category was confirmed by the in-depth environmental analysis conducted at the time of project preparation. The Initial Environment Examination (IEE) dated April 2016 has already been disclosed in the web site. The IEE confirmed that environmental impacts of the rehabilitation of the Henganofi-Nupuru subproject road are limited to the road corridor, are of minor scale and can be mitigated through the thorough implementation of the measures contained in the environment management plan. The impacts such as dust, noise, materials sourcing, storage, haulage, soil erosion, sedimentation and run-off are likely to occur mainly during the construction phase.
26. Based on the EMP presented in the IEE, a construction environment management plan (CEMP) was prepared by the contractor and was issued a no objection letter in January 23, 2018.
27. An Induction Meeting was conducted for all the contractors in July 12, 2017 by the Engineer and HRMG with the PSC to provide a background of the environmental management plans and compliance monitoring requirements. A reference compact disc (CD) was also provided to the contractors during this meeting containing best practices for environmental management and mitigation, including sewage treatment, solid and hazardous waste management; and soil erosion control and management. Based on the experiences with Tranche 1 and Tranche 2, environmental laws including a summary presentation on the legal framework of PNG, CEPA Act, Environment Act of 2000, list of suggested environmental monitoring equipment, and PNG Water Quality Standards, was also provided in the CD. Further, also provided were sample forms and requirements on sample monthly monitoring report, Notice of Violation Form, and Logbook Sample Content.
28. Internal monitoring will be conducted by the environmental specialist of the Project Supervision Consultant (PSC) whereas independent monitoring will be conducted by the Environmental Officer (EO) of HRMG.

2.3 Proposed Scope of Works

29. The project intends to improve the existing Henganofi – Nupuru road through the provision of a 5.5 meter wide pavement, sealed with DBST and 0.25 meter wide shoulders. Earthworks will be required to provide an adequate bench for construction of the pavement. Associated drainage will also be required where improvements are necessary in the vertical alignment to ensure adequate stopping sight distance. An average additional width of 1.0 m on each side of the existing cleared width will be required to accommodate the improvement works. The estimated volume of excavation is 95,000 cu.m. of which 60,000 cu.m. will be reused for embankments and the remainder is expected to be

unsuitable and therefore to be disposed of. Approximately 40,000 cu.m. of borrow area will be required for the balance of embankment construction.

30. The proposed drainage system for the road will entail the installation of 80 new culverts, primarily to provide relief to road side drains, the removal and replacement of 50 existing culverts which are either badly damaged or undersized and the maintenance of 9 large diameter existing culverts i.e. dia >1,200 mm. Most of the culverts to be maintained will require extensions on each side to accommodate the carriageway above. Approximately 21,000 linear meters of lined roadside drains will be constructed to cater for run-off from the carriageway and the adjacent slopes.

31. There are 7 existing bridges within the road length, the details of which are presented in the following Figure 1 Location of the Henganofi - Nupuru Road. Five of the bridges require major rehabilitation and the provision of steel decks. The Pore bridge is relatively new and require only minor maintenance while the bridge at the Imayata River has been washed out and requires replacement. This will necessitate the construction of bank seat abutments with gabion protection to prevent scour of the foundations and the installation of Barley bridge superstructure.

Table 2: Bridges along the Henganofi - Nupuru Road

NAME	CHAINAGE	TYPE	PROPOSED WORKS
Konamebi River	00 + 365	Steel Girder	Rehabilitation of Girders and provision of Steel Deck.
Menipi Creek	00 + 925	Steel Truss	Rehabilitation of Truss and Provision of Steel Deck
Pore River	20 + 520	9 Bay Bailey	Good Condition – No Works Required
Okoteri Creek 1	23 + 815	10 Bay Bailey	Minor Rehabilitation and Provision of Steel Deck
Okoteri Creek2	24 + 240	4 Bay Bailey	Rehabilitation and Provision of Steel Deck
Imayata River	28 + 030	6 Bay Bailey	Construction of a new Bailey bridge includes provision of Steel Deck
Iyapa Creek	29 + 722	2 Bay Bailey	Rehabilitation and Provision of Steel Deck

32. The rehabilitation and upgrading would approximately take 36 months and would involve the following:

- (i) Transport, handling and storage of construction materials, fuel and lubricants and, machinery to site;
- (ii) Preparation of contractor's camp and work sites;
- (iii) Establishment of ancillary facilities, i.e. identification and establishment of suitable material sources/quarries, batching, crushing and asphalt plants;
- (iv) Clearing and grubbing (shoulders and drainage);
- (v) Excavate defective sections and improve side drains as required;
- (vi) Excavation and/or filling to widen the existing road bench;
- (vii) Culvert removal, installation, extension and/ or replacement;
- (viii) Construct masonry retaining walls;
- (ix) Construction of gabion protection works;
- (x) Rehabilitate bridges which may include installation of new steel decks if necessary, removing rust and repainting and, construct a new bridge;

- (xi) Backfill and compact as required;
- (xii) Layout sub-base and base materials and compaction;
- (xiii) Install road furniture required (guardrails, pavement markings, etc.)
- (xiv) (xiv) Pave roadway with DBST.

33. The upgrading and rehabilitation works for the Henganofi to Nupuru Road would require approximately 231 people of which 120 unskilled workers will be sourced from the local communities in the area. Various machinery and heavy equipment will be required in the rehabilitation and upgrading works. This would range from 4WD vehicles to bulldozers. The human-power complement, machinery and equipment required for the works rehabilitation and upgrading would approximately take 24 months and would involve the following:

34. The works require materials including fuel, lubricants, paint, bitumen, cement, aggregates, sand, timber, geotextile, drainage pipes and culverts. All materials will be sourced from approved suppliers. Workers, including local women, will make gabion baskets for embankment and bridge pier protection.

2.4 Purpose

35. This report is written to present the status of the environment including compliance with the approved CEMP in respect of the Henganofi – Nupuru road section covering January to June 2019. Semi-Annual environment safeguards monitoring reports is a requirement under the SPS. In addition, the report provides a clear picture with regard to the future implementation of CEMP activities as well as the environmental outcome.

36. Furthermore, the report serves the client, ADB and other organisations to understand the environmental management process, its outcome, the corrective actions that are required and the impact of such actions on the environment.

2.5 Methodology

37. This six-month consolidated report is written using data gathered from several sources. These include (i) Contractor's interviews and monthly reports; PSC monthly reports and; (iii) HRMG-PIU verification of site and field observations.

38. This report is reviewed by the Supervision Consultant and HRMG-PIU prior to its submission to ADB. It also follows the format prescribed by ADB and a checklist for monitoring environmental compliance.

39. The list of reports reviewed is in Appendix 1 whilst names of people interviewed are in Appendix 2.

2.6 Institutional Arrangements

40. The Department of Works, as the executing agency, has the overall responsibility to manage the planning, implementation and monitoring related to acquiring use rights for additional land to implement HRRIP subprojects, as well as compensation for damages on project-affected land.

41. DOW established a Project Management Office (PMO) headed by a Project Director which manages the day to day activities of the program. Within the PMO, there are two units, the Project Management Unit (PMU) which is based in Port Moresby. The other is the Highlands Road Management Group (HRMG), the DOW's Project Implementation Unit (PIU) for HRRIP subprojects to carry out the planning, implementation and monitoring for land activities, as required and is based in Mt. Hagen.
42. In the revitalized organizational chart (as of February 2017), the HRMG is headed by the Field Project Manager (FPM). Under the FPM are two sub-units, the construction unit headed by the "Engineer" and the social and environmental safeguards unit headed by the Senior Field Project Coordinator (SFPC).

2.7 Report Organisation

43. The report consists of the foregoing introduction and 2 other sections as follows:
- i) Section 1 – Executive Summary ii)
Section 2 - Introduction,
 - iii) Section 3 – Monitoring results and finding
 - iv) Section 4 – Conclusions and recommendations and appendices

3.0 MONITORING RESULTS AND FINDINGS

44. The main findings of monitoring shall include the assessment of environmental impacts during the review period and proscriptive requirements are presented in this section.
45. The basis for monitoring are the following parameters in accordance with the approved CEMP:
- 1. Training, Mentoring and Meetings
 - 2. Health and Safety Issues
 - 3. Contractor's Camp and Yard
 - 4. Earthworks
 - 5. Erosion and Sedimentation
 - 6. Water Quality
 - 7. Air Quality
 - 8. Noise Level
 - 9. Waste Management
 - 10. Hazardous Waste Management
 - 11. Aggregates Extraction
 - 12. Ancillary Facilities Management
 - 13. Tree Removal and Vegetation Management
 - 14. Socio-Economic Issues of Workers
 - 15. Socio-Impacts to the community
 - 16. Public Safety
 - 17. Traffic Management
 - 18. Prevention of /HIV/AIDS and STIs
 - 19. Existing Infrastructure Issues
 - 20. Environmental Related Issues

Table3: Summary of Compliance & Non-Compliance Notices for January to June 2020

Monitoring Parameters x=non-compliance, √=compliance, N/A = Not Applicable		Monitoring Months					
		Jan	Feb	Mar	Apr	May	Jun
1	Training, Mentoring and Meetings	✓	✓				
2	Health and Safety Issues	✓	✓				
3	Contractor's camp and Yard	✓	✓				
4	Earth Works	✓	✓				
5	Erosion and Sedimentation	✓	✓				
6	Water Quality	✓	✓				
7	Air Quality	✓	✓				
8	Noise Management	✓	✓				
9	Waste Management	✓	✓				
10	Hazardous Waste Management	✓	✓				
11	Aggregates Extraction	✓	✓				
12	Ancillary Facilities Management	✓	✓				
13	Tree Removal & Vegetation Mgmt.	N/A	N/A				
14	Socio-economic Issues of Workers	✓	✓				
15	Socio-Economic impacts – Comm.	✓	✓				
16	Public Safety	✓	✓				
17	Traffic Management	✓	✓				
18	Prevention of HIV/AIDS and STIs	✓	✓				
19	Existing Infrastructure issues	N/A	N/A				
20	Environmental Related Grievances	✓	✓				

3.1 CONTRACTOR'S CAMP AND YARD

47. All campsite facilities were inspected, nevertheless, all facilities were generally well maintained.

48. The drainage system has been cleared as per the recommendation in the previous month's report. However, the contractor should continue to ensure the drains are cleared all the time.

49. The campsite yard was generally well maintained and properly supervised.



Photographs 1-4: Clean and well-maintained camp site and yard

3.2 Earthworks

50. Construction activities have been progressed well in this month along the road corridor. They are undertaken by the Contractor together with its Sub-Contractor (GLC). Hence, work progressed status within the total distance of 34.4 kilometres are outlined and summarized in table below.

Table 4: Showing the status of Road Construction Activities Progressed on the environment in the months of January & February 2020

	Construction Activities	Progress description		Comments
		January 2020	February 2020 (Chainage level reached)	
1.	Clearing & Grabbing	- 34	- 34 .04	✓ Completed.
2	Earthworks (Cut & Fill/ Maintenance	- 34.04	- 34.04	✓ Completed
3	Embankment & Capping	- 33+630-34.04	- 34.04	✓ Completed
3	Gabion Installation & retaining walls	- CH23+800 - CH33+850 (LHS)	- 34.04 (CH0+355) constructed at Konamempi Bridge to	✓ All of these are completed successfully.

		<ul style="list-style-type: none"> - CH33+900 (RHS) to protect mass movement. - CH33+300 - 32+250 RHS outlet (retaining wall) <p>Km 24+260</p>	<p>protect the stone walls and the bridge.</p> <p>-</p>	
4	Sub-base	- 33+300- 34.04	- 34.04	✓ Completed.
5	Base course Or Road base	<ul style="list-style-type: none"> - CH24+200-24+560 - CH28-CH29+250 - CH32+540-33+200 - CH33+200-CH34 - 	- 34.04	✓ Completed
6	Line Drain	<ul style="list-style-type: none"> - 23+790-23+840 - 24+040-24+180 - 24+240-24+310 - 33+260-33+390 - 33+630-33+760 - 33+765-33+820 (Finish point) 	- 34.04	<ul style="list-style-type: none"> ✓ Completed ✓ Few reworks & maintenance
7	Culvert construction	- Completed	- 34.04	✓ Completed. No environmental issues arise.
8	Priming/Sealing	<ul style="list-style-type: none"> ✓ 29+190-29+800 ✓ 29+800-30+010 (sealed) ✓ 30+520-31+970(sealed) ✓ 31+970-32+010 (sealed) ✓ 32+430-32+430-32+850 ✓ 23+700- 24+300 ✓ 24+400- 24+ 560 	<ul style="list-style-type: none"> ✓ 34.04 ✓ 24+540- 27+740 (second sealing with 13 mm). 	<ul style="list-style-type: none"> - Prime-completed - 1st coat sealing with 19mm – completed - 2nd coat/final is 94 % on-going expected to be finished as soon as possible.





Photographs 5-9. Showing the status of Road Construction activities progressed on the environment in January 2020. (Source: CWYC)



Photographs 10-13. Showing the Final Road Construction activities along the project corridor in February 2020. (Source: CWYC)



Photographs 14-19. Showing the Final Road Construction activities along the project corridor in March and April 2020. (Source: CWYC)

3.3 EROSION AND SEDIMENTATION



51. There was an additional landslide at km 33+300 due to excavation to construct a gabion basket and covered the local casual workers working on packing stones in a gabion basket. This issue was already addressed by the contractor and the works resumed immediately the next day after the incident.

52. At Km 24+300 we encountered a depression and a gabion basket was built to mitigate further depression and landslide at this location.

53. Furthermore, there is a road depression at the Nupuru junction km 34+040, the road leading to Okapa District due to our earthworks and gabion baskets were further extended to prevent future landslips and depression.

54. In addition, there is four other little landslips/sediments flow along the road corridor and they are cleaned and now the road is safe even for public safety. Of these four, one at Km 20+900 gabion was built but several times sediment flow has reached the road, but we hope it will be stable once all the unstable soil eroded down as the land is too sloppy.

Table 5: Description of Sedimentation and erosion related issues encountered for January, 2020.

Location	Photograph	Description/Remarks
Km33+ 300		<p>There was an additional landslide at km 33+300 due to excavation to construct a gabion basket and covered the local casual workers working on packing stones in a gabion basket. This issue was addressed well by the contractor and the work has been proceeding well next day after the incident.</p> <p>Now, this gabion is already completed.</p>
Km 32+270		<p>Also there is a road depression at the Nupuru junction km 34+040, the road leading to Okapa District due to Contractor's earthworks. However gabion baskets were built to contain this depression.</p>

55. Scientifically, erosion is usually caused by verities of factors such as rain water, wind, and human activities from earthworks in construction activities which can destabilise the soil layers and natural disaster like earthquakes which triggers erosion at unstable locations. Therefore, the basic types of erosion encountered along the project corridors& camp sites during project period are wind erosion and water/rainwater erosion including human activities during earthworks at unestablished locations. Meanwhile, rain water erosion is mostly encountered during rainy periods and at unstable or a water-prone locations, where the soils have poor horizons. Thus, sediment eroded forms sedimentation along the road side, which needs clearance when it blocks the project road corridor which prevents construction activities.

56. In doing the contractor had come up with mitigation measures through the RE to prevent these erosion and sedimentation, thus gabion baskets, retaining walls, stone masonry, including apron from the in-lets and out-lets of the culverts had been built. Thus, total numbers of slope protection and culverts installed are given.

57. In addition, wind erosion had been less as water trucks have been used to contain it. Hence, as of these project completion months (March & April, 2020), several landslips were encountered of which four of them were major ones at CH7 & CH16, 22+560, 22+270 and 32+700 which were mitigated with gabion baskets. Apart from these four, others landslip were minor ones which were cleared along the road corridor.

58. From now, if any other future erosion and sedimentation occurs would be contained by the maintenance team which will be placed to completely eradicate erosion & sedimentation along the project road corridor.

59. Nerveless, the contractor does not want any of the erosion and sedimentation issues after the maintenance team goes out, thus to ensure road corridor must be free from any issues with this monitoring parameter. The Table below summarized the erosion and sedimentation issues encountered during March and April, 2020.



Photograph 20: Workers cleaning the sediments eroded down to road side at CH 18 +060. The sediments have damaged the line drain where re-work is needed.

3.4 WATER QUALITY

60. During the monitoring period, the contractor has ensured that there were no spoils and wastewater specifically waste oil, kerosene, petrol wastes and other liquid waste are discharged into local rivers, streams, lakes and irrigation channels and any other water bodies.

61. To ensure that there was no discharge, In-situ equipment for water quality testing has been used to test water bodies during monitoring along different stations where construction activities have been concentrated.

Table 6a: Water quality test data along the road corridor for the months of January 2020.

Stations	Water quality test results obtained in January, 2020.			Comment
	Temp (°C)	TSD (ppm)	Road status n/Remarks	
CH 0 + 480	28.9	086	✓ Sealed (bridge 1) Konamempi	These results shown that water quality along the project corridor is in line with CSC baseline data. This is because the contactor disposed of the spoils at designated locations including waste water.
CH20+540	27.2	109	✓ Sealed (Creek at Fore).	
CH23+790	26.3	056	✓ Sealed (Hogeteru Bridge)	
CH27 + 950	25.2	095	✓ Sealed (Imaka Bride)	
CH29+625	25.9	048	✓ Sealed	
CH32+250	24.9	098	✓ Sealed.	
CH33+670	27.3	107	✓ Unsealed (Road Base)	

Table 6b: Water quality test data along the road corridor for the months of February 2020.

Stations	Water quality test results obtained in February, 2020.			Comment
	Temp (°C)	TSD (ppm)	Road status n/Remarks	
CH 0 + 480	28.6	189	✓ Sealed (bridge 1) Konamempi	These results show that water quality along the project corridor is in line with CSC baseline data. This is because the contactor disposed of the spoils at assigned locations including waste water & other hazardous liquids and substances. Hence, the contactor is complying well to maintain water quality
CH20+540	26.7	103	✓ Sealed (Creek at Fore).	
CH23+790	25.1	034	✓ Sealed (Hogeteru Bridge)	
CH27 + 950	25.8	087	✓ Sealed (Imaka Bride)	
CH29+625	27.3	039	✓ Sealed	
CH32+250	25.0	043	✓ Sealed.	
CH33+670	27.5	102	✓ Sealed	

3.5 AIR QUALITY

62. Dusts arise from unsealed locations especially during dry season at day time as vehicles move to and fro have been contained well by water spraying using the Water Trucks. Basically, this is done at Chainage where village and market are located.

63. Other emission from vehicles and machines are controlled by conducting a regular periodic maintenance at the Contractors workshop.

64. Furthermore, Air Quality tests data collected along the road corridor at respective stations in the month are presented below;

Table 7a: Results collected for Air Quality Testing along the Road Corridor for January 2020

Stations	Pm2.5	Pm10	Road Status	Comments
0+410	23ug/m3	31 ug/m3	Sealed	Populated (Konamempi)
6+500	9 ug/m3	18 ug/m3	Sealed	Populated (Sky)
20+480	15 ug/m3	28 ug/m3	Sealed	Populated (Fore Market)
26+340	9 ug/m3	16 ug/m3	Sealed	6-mile market/populated
27+760	12 ug/m3	21 ug/m3	Sealed	Imaka/ populated
32+700	10 ug/m3	19 ug/m3	Sealed	Populated
33+200	09 ug/m3	20 ug/m3	Sealed	Populated/community
34+000	24 ug/m3	41 ug/m3	Unsealed	Populated/ market (Nupuru junction)

Table 7b: Results collected for Air Quality Testing along the road corridor for February 2020

Stations	Pm2.5	Pm10	Road Status	Comments
0+410	19ug/m3	36 ug/m3	Sealed	Populated (Konamempi)
6+500	7ug/m3	15 ug/m3	Sealed	Populated (Skipundanu community)
20+480	13 ug/m3	24 ug/m3	Sealed	Populated (Fore Market)
26+340	11 ug/m3	20 ug/m3	Sealed	6-mile market/populated
27+760	18 ug/m3	30 ug/m3	Sealed	Imaka/ populated
32+700	9 ug/m3	17 ug/m3	Sealed	Populated
33+200	08 ug/m3	15 ug/m3	Sealed	Populated/community
34+000	20 ug/m3	38 ug/m3	Sealed	Populated/ market (Nupuru junction)

3.6 NOISE AND VIBRATION

65. The ambient noise level safe for human is between 45-60 dB. Sounds which are unpleasant to human ears can be classified as noise. A person must not be exposed to noise level of 60 – 85 dB for over 30 minutes as it can cause injuries to the ear drum.

66. The main source of noise generated for this project come from heavy machineries, heavy and light vehicles, generators, etc. Contractor working hours is between 7:00am to 5:00pm.

67. Noise/sound level meter has been used in January and February 2020 to measure the noise levels along the road corridor and results are shown in the table below.

Table 8a. Results for noise level testing for January 2020 along road corridor

Stations	Data collected in January, 2020		Remarks	Road Status
	With Car/Machines	Without Car/Machines		
0+410	83.3 dBA	46.9 dBA	Populated (Konamempi)	Sealed
6+500	76.0 dBA	46 dBA	Populated (Sky)	Sealed
20+480	79.2 dBA	52.1 dBA	Populated (Fore Market)	Sealed

26+340	73.1 dBA	54.6 dBA	6-mile market/populated	Sealed
27+760	69.4 dBA	49.8 dBA	Imaka/ populated	Sealed
32+700	76.6 dBA	44.0 dBA	White house/ populated	Sealed
33+200	71.0 dBA	42.1 dBA	Populated /a community	Unsealed
34+000	76.7 dBA	56.4 dBA	Nupuru Junction/populated	Unsealed

Table 8b. Results for noise level testing for February 2020

Stations	Data collected in January, 2020		Remarks	Road Status
	With Car/Machines	Without Car/Machines		
0+410	80.2 dBA	40.4 dBA	Populated (Konamempi)	Sealed
6+500	75.1 dBA	42.3 dBA	Populated (Sky)	Sealed
20+480	68.5 dBA	46.2 dBA	Populated (Fore Market)	Sealed
26+340	70.9 dBA	50.5 dBA	6-mile market/populated	Sealed
27+760	71.0 dBA	41.9 dBA	Imaka/ populated	Sealed
32+700	68.9 dBA	43.4 dBA	White house/ populated	Sealed
33+200	78.9 dBA	39.3 dBA	Populated /a community	Sealed
34+000	80.1 dBA	53.7 dBA	Nupuru Junction/populated	Sealed

3.7 WASTE MANAGEMENT

68. The Campsite domestic/household waste were generally well managed.

69. The waste produced in camp site are separated into organic and inorganic, organic waste are used as compose and the organic are dumped at the dump pit at CH: 1 + 940. The company had been maintaining the conducive and healthier working environmental for employees and the visitors.





Photographs 21-23: Showing the waste management undertaken by the Contractor.

70. Other materials like empty drums and old tyres and scrap metals are kept inside the campsite and re-used as fences, storage vessel for bitumen and tyres are re-used as barrier for chips stock pile inside the camp yard.

3.8 HAZARDOUS MATERIAL MANAGEMENT

3.8.1 Fuel

71. Transportation, storage and refuelling have been adequately managed by the contractor. The fuel pump station is strictly supervised with spillage charged to the pump handler thus handling have been done with care to avoid spills.

3.8.2 Bitumen

72. The bitumen workers were seen wearing their respective PPEs such as boots, gloves, eye and nose protection.

73. The contractor constructed a bitumen spill trap that collects all bitumen accidentally spilled, which are collected and utilized.

3.8.3 Cement/Concrete Mortar

74. Workers loading and off-loading and cement bags, which produces a lot of cement dust which is very toxic to human health, nevertheless, the inspection showed workers wearing proper PPEs especially eye and nose protection.

3.8.4 Oils and Lubricants

75. There are no problems with the transportation and storage of oils and lubricants, however the ongoing issue is with the disposal of used or waste oil and lubricant containers.

76. Waste oil should be collected in trimmed drums and stored in sealed drums for re-use or disposed in an appropriate environmental manner such as handing out to locals to use for Timber Treatment.

77. All used and unwanted lubricants containers should be collected and disposed at the landfill at Ch:1+900.

3.8.5 Used florescent tubes and batteries

78. The handling and disposal of used florescent tubes and batteries have not been properly inspected and will be looked into in the coming monitoring.

3.8.6 Cooking Gas

79. The contractor uses gas for its kitchen, nevertheless site inspection showed that the gas cylinders were well and safely secured.

3.8.7 Others

80. Used tyres has many other uses and should not be burnt. The current arrangement of dishing out to locals for other uses is all right, however instruction should be given so that they should not burn tyres.



Photographs 24-26: Showing the Hazardous Waste Management undertaken by the contractor.

3.9 ANCILLARY FACILITY MANAGEMENT

3.9.1 Workshop

90. The contractor regularly inspects the workshop ensuring that oil spills are properly handled by using trim drums to collect waste oil and use sawdust as absorbents for spills. Therefore, workshop is kept conducive for mechanics and no related issues encountered in January

3.9.2 Fuel Depo/Station

91. The fuel station has been well management and strictly supervised.

3.9.3 Electricity Switchboard and Standby Generators

92. Electricity switchboard and standby generators were well secured and safely operating.

3.9.4 Materials Laboratory

93. The materials lab has been well managed. Lab equipment were safely secured and authorised personnel only allowed to access the lab.

3.9.5 Storage Areas and Sheds

94. All storage areas were well secured and generally well managed. Each storage area and shed has its owner supervisor.



Photographs 27-32: Showing the facilities management at camp and along the project road corridor.

3.10 AGGREGATES EXTRACTION

95. The contractor had established a riverine quarry site for its project CSTB: 3533 at Unpeg where Bena River flows adjacent to Asarco River in the Ungai-Bena district which is approximately 14.5 kilometres from Goroka Township and 31 kilometres from the Contractor's base camp site at Konamemopi in Henganofi district of EHP.

96. It's QMP which was constructed prior to the quarry operations were approved by CEPA on 23rd March, 2018 and it has been implemented throughout the operation period. Extraction begins on May, 2018 and ceased on October, 2019 due to the landowners (Board of Directors) in-house issues affecting the operations, also the contractor meant

to leave the site because there were insufficient materials. On May, 2019 its QMP was expired and it was renewed again in July, 2019. Royalty payments had been made through an association named “Upeii River Gravel Suppliers” which is comprised of Board of Directors who are the Landowners. Of these aggregates, the landowner company and the contractor had agreed for k3.15 per cubic metres, which means a dump truck with 11.6 m³ volume of space has cost K36.54.

97. Furthermore, after Upegu quarry was ceased and the contractor has made a business deal and extracts its aggregates at Ben Bridge quarry which is operated by the same company but different administration under different program which is Sustainable Highlands Highway Improvement Programs of category Civil Works 2(CW2) which is guided by its QMP.
98. In addition, there were other borrow pits established along the road corridor for cabin materials. The main ones are at Km13 +200 – Meanafe, Km21, Km 32 and Km 33+500 of these cabin materials per dump truck was charged K6 and payment had been made accordingly as per tally master’s raw data.
99. Finally, Upegu quarry rehabilitation & closure plan was constructed and submitted for aproval on the 9th of March, 2020 and it was approved on the 20/03/2020 and had been successfully implemented and handed over to the landowners.
100. The final aggregates extracted data for Henganofi-Nupuru project in March- April, 2020 the project completion months are provided below.

Table 9: Quarry Extraction Estimated Volume for January to June (2020)

Month	CWYC & GLC	Sub Base	Road Base	Crushed Stones	10 – 14 (13) mm	14 – 20 (19) mm	Monthly Total
January	No. of Loads	0	601	2	29	8	640
	Total Volume (No. of load * 11.6 m ³)	0	6,971.6	23.2	336.4	92.8	7,424 m ³
	Total Cost = 3.15 x 7,424 = 23,014.40						
February	No. of Loads	0	0	10	29	0	39
	Total Volume (No. of load * 11.6 m ³)	0	0	116	336.4	0	452.4 m ³
	Total Cost = 3.15 x 452.40 = 1,425.06						
March - April	No. of Loads	0	0	3	2	0	5
	Total Volume (No. of load * 11.6 m ³)	0	0	34.6	23.2	0	58.0 m ³
	Total Cost = 3.15 x 58 = 182.70						



Photograph 33-34: Upegu riverine quarry operation in 2019, before it ceased its operation and Showing Aggregates extraction at Bena Bridge quarry site operated by SHHIP-CW2

3.11 SOCIO-ECONOMIC ISSUES OF WORKERS - Employment Opportunities (Locals)

76. CWYC maintains gender equality by giving equal opportunity to both males and females in employment. According to ADB benchmark total workers of female must be 30%. The table below presents the payroll employees by gender.

Table 10: Monthly Employment by Gender from January to June 2020.

Month	Male	Female	Total	DPs Employed	Estimated Female Wages	Estimated Total Wages
January	221	20	241	207	20,070.00	120,500.00
February	214	16	230	203	19,230.00	115,000.00
March	210	16	226	196	19,170.00	113,000.00
April						
May						
June						
Total	645	52	697	606	58,470.00	348,500.00
Percentage	92.54%	7.46%	100.00%	86.94%		

77. Specifically, above female employees (table 10) are permanent staffs employed by the contractors which made up 7.46 %. There are other casual women employees also employed along road corridors which at least makes up the other remaining percentage which at least give the benchmark as required by the ADB.

78. Local employment opportunities include non-payroll activities that involve women therefore, it is evident that the contractor maintains gender equality. These are presented in table below.

Table 11: Women's Participation in Non-Payroll Activities

Month	Rip Raps	Spotters	Line Drains	Gabions	Head Walls	Security	Total	Estimated female Wages	%
January	0	10	2	4	0	1	13	K5,030.00	19 %
February	0	3	0	2	0	0	5	K2,900.00	2.3 %
March & April	0	2	0	1	0	0	3	K2,200.00	Less % due to project completion

Table 12: Summary of Employment by Origin

Month	Foreigner	Kafentina LLG	Fayintina LLG	Other LLG	Total
January	35	120	74	47	276
February	35	111	70	49	265
March	35	109	109	49	261
April	35	109	109	49	261
May					
June					
Total	140	449	362	194	1145
Percentage	12.22%	39.21%	31.61%	16.94%	100%

Table 13: Estimated Monthly Wages Paid to Workers from Affected LLGs

Month	Kafentina LLG	Estimated Wages	Fayantina LLG	Estimated Wages	Total
January	120	60,000.00	74	37,000.00	97,000.00
February	111	55,500.00	70	35,000.00	90,500.00
March	109	54,500.00	109	54,500.00	109,000.00
April	109	54,500.00	109	54,500.00	109,000.00
May					
June					
Total	449	224,500.00	362	182,500.00	407,000.00
Average	112	56,125.00	90	45,625.00	101,750.00

3.12 SOCIO-ECONOMIC IMPACTS TO THE COMMUNITY

79. There were no direct aids or cash given out the Affected Communities but there are indirect positive socio-economic impacts in and around the communities along the road project corridor throughout the monitoring period.

80. The table below shows the highlights of the socio-economic impacts to the community

Table 14: Showing the Highlights of the Socio-Economic Impacts

	Positive Impacts	Comments
1	General Transportation is good.	✓ Increases PMV's ✓ Easy access of transportation to and fro
2	Increased Commercial Activities	✓ Increase of small trade stores and markets alongside road corridor. ✓ Increase of income level
3	Improve livelihood standards	✓ Easy access to basic goods and services.
4	Local Employment	✓ Provide job opportunity for both permanent & casual for locals.
5	Access to better basic Government Services	✓ Quick and easy access to schools, clinics/Aid Post

81. As usual the contractor still gives rental payments to landowners at the Konamempi Camp site. The rental payments made for the concerned are presented in table below.

Table 15: Lease Rental Paid to Customary Land Owners

Month	Konamempi	Total (Kina)
January	1,100	1,100
February	1,100	1,100
March	1,100	1,100
April	1,100	1,100
May		
June		
Total		

80. The contractor also does purchase of local food produce and construction material in order to help locals and their market. Purchase of food and construction materials made for the concerned period are presented in the table below.

Table 16: Purchases of Locally Produced Food and Construction Materials

Month	Locally Purchased Food		Locally Purchased Construction Materials	Total (Kina)
	Vegetables/ Fruits	Pig/ Goat	Firewood/ Timber/ Bamboo	
January	2,400	4,400	450	7,250
February	2,400	4,400	450	7,250
March	2,400	4,400	450	7,250
April	2,400	4,400	450	7,250
Total	9,600	17,600	1,800	29,000

Table 17: Summary of Quarry Volume & Estimated Value

Month	Upegu Quarry	Bena Bridge Quarry m3	Total	Estimated Value (Kina)
January		7,424	7,424	23,014.40
February		452.4	452.4	1,425.06
March		58	58	182.70
April				
May				
June				
Total		7,934.4 m3	7,934.4 m3	24,622.16

3.13 HEALTH AND SAFETY

81. The contractor through its supervisors has been issued the PPEs to the employees throughout the project period as they reached their probation period. They have been told to put on these PPEs during working hours to avoid accidents in terms of safety and for protection of personal health and hygiene.
82. Dust along the road corridor due to construction work had been well mitigated or contained using the water truck to spray water, thus to avoid the workers and general public to contact dust which might pose health issues. While fumes produced from Vehicles and Machines including other sources have been controlled well through servicing those equipment's and implement measures to contain fumes from other sources like sewerage.
83. This also includes noise, as it had been controlled at populated areas. While water quality is maintained as any spoils and substances are prohibited to be damped off at any water bodies.
84. While all other health concerns are good as cleaners clean the office and Material Lab including other yards. Therefore, no major issues had been encountered throughout the project period.



Photographs 35-36: Employees with PPE along the project road corridor during Earth works. Quarry workers with PPE after reaching probation period at the work site

3.14 PUBLIC SAFETY

85. The contractor was compliant on its Traffic Management with proper traffic control, speed control for its vehicles and road signage.

86. The contractor has imposed speed limits to 50km/h for its heavy vehicles. Strict monitoring has not been imposed, as seen by vehicles speeding above the speed limits.

87. The contractor provides incentives or bonuses for Dump Truck drivers. excellent rating earns K80, very good K50 and good K20.

88. Driver who do not performed to accepted standards for driving and traffic are issued with warning cards or have their wages cut.

3.15 TRAFFIC MANAGEMENT

89. The contractor was able to use traffic controls at the different workstations along the road. Spotters were assigned at both ends of all work stations to control traffic. Traffic signage were also used to warn the vehicles accessing the road.

90. Reflective tapes were used at sites where culverts were installed to keep the vehicles and pedestrian away from the ditch.

91. Cones were also used to warn vehicles to slow down indicating work taking place on the road ahead.

92. The contractor provides incentives or bonuses for Dump Truck drivers. Excellent rating earns K80, very good K50 and good K20.

93. Drivers who do not performed to accepted standards for driving and traffic are issued with warning cards or have their wages cut.

94. The contractor has arranged shifts for drivers. The drivers who drive in day start from 7:00am-5pm. The night shift drivers start from 5:pm-7am.

95. All vehicles are fitted with GPS racking devise for the contractor to monitor the speed and location.

96. There were no serious traffic delays along the road. Traffic was moving freely and at certain station delays were not more than 5minutes.

97. The road condition has improved since the sealing. Nevertheless, private, PMVs and company vehicles were taking advantage by speeding. Thus, the company has imposed a speed limit of 50km/h for its heavy vehicles.

98. To ensure road worthiness, the contractor does regular checks for its operation vehicles. The workshop crew handle all required vehicle maintenance to ensure their fleets are road worthy.



Photographs 37-38: Traffic management during priming and sealing of the road project

3.16 TREE REMOVAL AND VEGETATION MANAGEMENT

99. Clear grabbing was successfully being completed early march, 2019. The trees and other vegetation along the project corridor to be removed from 10 metres left and 10 metres right had been advised by the Environmental & social safeguard Officers. While the vegetation which had been removed were recorded by the HRMG environmental Officers with other counterparts who have been accompanied. Trees and vegetation away from construction limits had been forbidden to be removed as they play important roles in the ecosystem.

3.17 ENVIRONMENT RELATED GRIEVANCES

100. Since construction of the sub-project road reached its completion stage, there were very few grievances raised. However, the previous grievances raised by APs for the second semi-annual 2019 were brought forward due to the fact that it has not been resolved.

101. For the covered period from January to June 2020, GRC deliberated on a total of 781 grievances based on the physical on-site re-verification exercise carried-out HRMG technical advisors, District Administration and DoW Goroka technical officers to ascertain the genuineness of the grievances filed.

102. The master list of grievances classified as eligible for compensation or may deemed to be genuine were given to Henganofi District for payment in due course.

3.18 PREVENTION OF HIV/AIDS & STDs AWARENESS

103. Throughout the project period, the Service Provider has been regularly providing awareness activity each month. The outcomes of these awareness program have impacted the targeted group of people along the road corridor, as they had shared their thoughts during the awareness activity. These awareness program has enlightened them to protect themselves from HIV/AIDS & STDs throughout the project period and even in the future while enjoy the good road condition.

Table 18: Summary of HIV/AIDS & STDs Awareness from January to February 2020.

Month	Venue	Attendees/Participants					
January	CH 20+150	Service Provider	CWYI & GLC Employees	Local Community			
				Male	Female	Children	Total
		1	4	16	24	8	53
February	No of Condoms Distributed			144	144		288
	CH 20+150	9	4	0	49	0	62
	No of Condoms Distributed			144	144		288
	Hagagimi Market CH 26+000	2	3	132	175	106	418
	No of Condoms Distributed			432	432		864

104. Total of 16 people were tested and 2 turned out to be positive and 14 were negative.

105. It was noted that using this method to pass on information to the community brought about a different perspective on their outlook regarding HIV AIDs.



Photographs 39-40: Showing the HIV/AIDS testing at Fore Health Centre by the Nursing Officials during the awareness activity.

3.19 TRAININGS, MENTORING and MEETINGS.

106. The contractor regularly holds a toolbox meetings and trainings among their local workers even as the project comes towards the end in relation to health and safety.

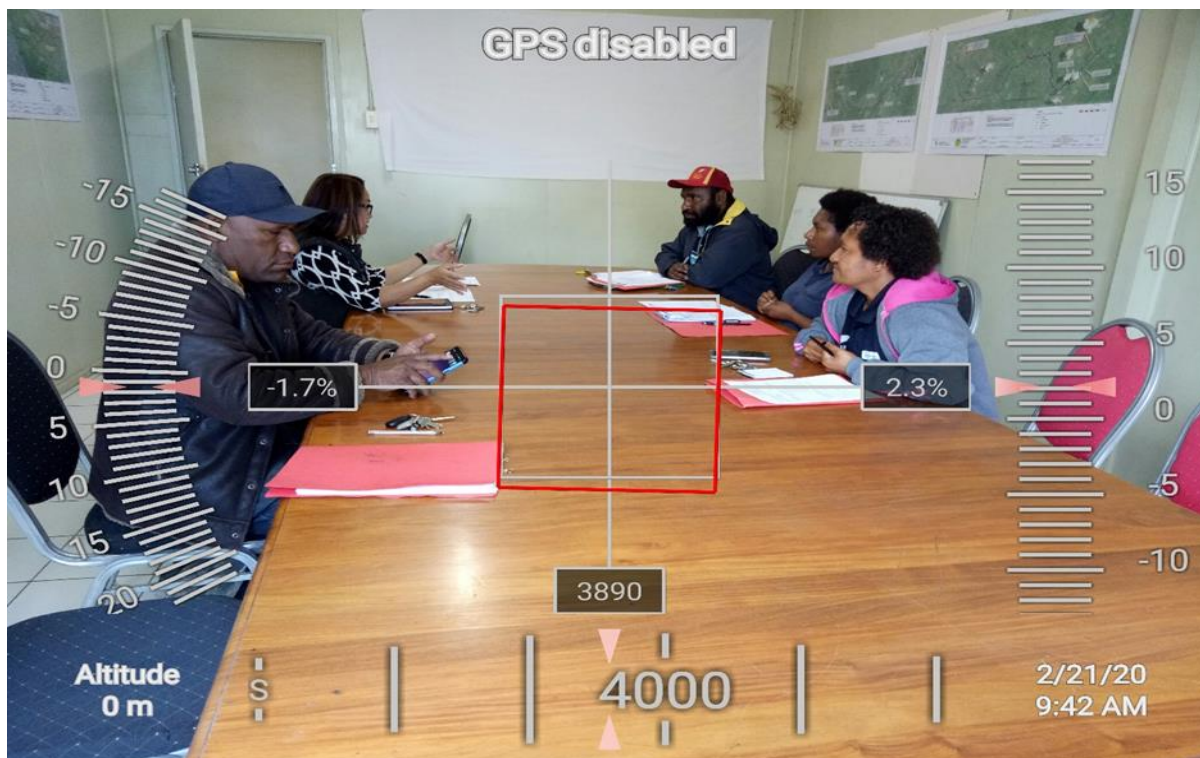


Photographs 41-42: Showing Toolbox meeting with the targeted employees for the safety and welfare of the company.

107. The International Environmental & Social Safeguard Specialist along with the National Resettlement Specialist have facilitated in - house training and meetings to conduct socio - economic survey from the 19th – 22nd February,2020, at HRMG conference room, DoW Mt. Hagen. The in-house training and meeting were attended by HRMG Environmental and Social Safeguards Officers of HRMG since they were nominated to conduct socio-economic survey for tranche 3 sub-projects.

108. The coaching focused on comparing socio – economic data established for each sub-project road as per the Resettlement Plan (RP). The results of this survey will be the baseline information of the socio-economic characteristics wherein which primary data to be generated will be compared with, to measure quantitatively and qualitatively the impacts of the road project to the affected households within the road project.

109. Data collection for socio-economic benefits were successfully carried-out together with the HRMG Community Relations Officer nominated at the project.



Photograph 43: Socio Economic Survey Coordination meeting facilitated by International Social Safeguards & Environmental Specialist of Renardet S.A Engineering.

4.0 CONCLUSION AND RECOMMENDATION

4.1 CONCLUSION

110. This is the final environmental safeguard monitoring report for the period of January to June 2020 of the Henganofi- Nupuru road project of CSTB number 3533 of Tranche 3 project under Highlands Region Road Improvement and Investment Program (HRRIP), which is the initiative of Government of Papua New Guinea (GoPNG). It is financed by Asian Development Bank (ADB) & European Union (UN) to pave the way forward for the economic developments in the region and off course the country as a whole.

111. It is one of the four projects of Tranche 3 successfully completed as expected with a little extension of time.

112. Main environmental issues raised during the last monitoring period, July-December 2019, were properly addressed and mitigation measures were applied.

113. However, environmental grievance payment (vegetation which had been removed and recorded by HRMG officers) during clear grabbing before earthworks starts is something HRMG officers of the project and DA of Henganofi District to be responsible to address.

114.. Basically, this report brings across to the ESSB branch of DoW the final completion status of environment and social safeguard with respect to our 21 monitoring parameters finding and result as per the implementation of the Construction Environmental Management Plan with other sub-plans.

4.2 RECOMMENDATION

115. Since the project has come to completion and has entered its “Defects Liability Period,” the contractor remains liable under the contract for dealing with any defects which become apparent.

116. Therefore, any defects must be replaced, repaired or rectified by the contractor and ensure that any environmental damages that may arise must be mitigated properly.

117. The contractor should also ensure that the road project is properly monitored and well-maintained.

5.0 APPENDICES

Appendix 1: List of References

1. Initial Environmental Examination for Henganofi – Nupuru Road section (2016).
2. Contractor’s Environment Management Plan for Henganofi – Nupuru (January 2018)
3. Back to Office Report of HRMG Environmental Officer and Quarterly Report.
4. Environmental Monthly Reports for HRMG and CWYC Environmental Officers
5. Henganofi – Nupuru Baseline Report.
6. Environmental & Safeguards Monthly monitoring reports

Appendix 2: List of People Interviewed

1. Mr. Alberto Fieramosca – Team Leader Engineer PSC.
2. Mr. Leonilo Q. Tavera – Resident Engineer PSC
3. Joel Yawaiye– CWYC Environmental Officer
4. Nazmie Ruape, Social Safeguards Officer, HRMG
5. Anita Uvovo, Environmental Officer, HRMG
6. John Upave, Community Relations Officer, HRMG
7. Rebecca Ken, Community Relations Officer, HRMG
8. Terrix Lanefae, Public Relations Officer, China Wu Yi Co., Ltd
9. Sophie CWYC Administration Officer.