

Semi-annual Report

January 2020

## **PNG: HIGHLANDS REGION ROAD 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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# **SEMI-ANNUAL ENVIRONMENTAL SAFEGUARDS MONITORING REPORT**

**(JULY TO DECEMBER 2019)**

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



### **Henganofi-Nupuru Road Sub-Project**

**CSTB# 3533**

**Submission date: 31 January 2020**

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## ABBREVIATIONS

ADB	-	Asian Development Bank
AIDS	-	Acquired Immune Deficiency Syndrome
AP	-	Affected People
CEMP	-	Construction Environment Management Plan
CRO	-	Community Relations Officer
CWYC	-	China Wu Yi Company
PSC	-	Project Supervision Consultant
DBST	-	Double Bitumen-layer Surface Treatment
DC	-	Design Consultant
DOW	-	Department of Work
EA	-	Executive Agency
EHFV	-	Eastern Highlands Family Violence
EHP	-	Eastern Highlands Province
EMP	-	Environmental Management Plan
EO	-	Environmental Officer
ESSU	-	Environment and Social Safeguards Unit
GOPNG	-	Government of Papua New Guinea
GRC	-	Grievance Redress Committee
HCRN	-	Highlands Core Road Network
HIV	-	Human Immunodeficiency Virus
HRMG	-	Highlands Road Management Group
HRRIP	-	Highlands Region Road Improvement Investment Program
IA	-	Implementation Agency
IEE	-	Initial Environment Examination
IS	-	International Specialist
LLG	-	Local Level Government
MFF	-	Multi-tranche Financing Facility
MOA	-	Memorandum of Agreement
NGO	-	Non-Government Organisation
NRA	-	National Road Authority
PNG	-	Papua New Guinea
PRO	-	Public Relations Officer
PWM	-	Provincial Works Manager
ROW	-	Right of Way
RP	-	Resettlement Plan
SIS	-	Socio-economic Impact Study
SPC	-	Senior Field Project Coordinator
SPS	-	Safeguard Policy Statement
STDs	-	Sexual Transmitted Diseases
VCT	-	Voluntary Counselling and Testing

**FACT SHEET**

Loan	ADB Loan: 3404/3408 and Grant 0485 PNG
Project Number	40173-044
Contract 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><b>Prior to the commencement of civil works:</b></p> <ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ Ensure that all regulatory clearances for the subproject are obtained from the relevant government authorities and are submitted promptly to ADB.</li> <li>▪ 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.</li> <li>▪ 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</li> <li>▪ That all selected contractors have agreed</li> </ul>
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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"> <li>▪ Provide training as required to HRMG in Mt Hagen and contractor.</li> <li>▪ Receive environmental safeguard clearance on subproject(s).</li> <li>▪ Provide training to contractor prior to preparation of CEMP, safeguards requirements of ADB and regulatory requirements of CEPA.</li> <li>▪ Approve CEMP for the subproject, after being cleared by PSC.</li> </ul> <p><b>During the implementation of civil works:</b></p> <ul style="list-style-type: none"> <li>▪ Ensure that the CEMP including all proposed mitigation measures and monitoring and relevant provisions of the environmental assessments is updated as required,</li> <li>▪ Conduct environmental management and compliance monitoring on a monthly basis in cooperation with the PSC.</li> <li>▪ Review and assess the contractor's monthly environmental monitoring report and compliances as contained in the CEMP.</li> <li>▪ Assist the Engineer in the compliance of the submitted CEMP.</li> <li>▪ Prepare the quarterly and semi-annual reports in cooperation with the PSC for submission to DOW and ADB.</li> </ul>
Coverage of the Environmental Monitoring Report	July to December 2019



## EXECUTIVE SUMMARY

- I. This Semi-annual environmental monitoring report for 2019 covers the period of activities implemented by China Wu Yi Ltd from July to December 2019 for Henganofi to 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.
- II. 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 Company (CWYC) Ltd.
- III. 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 July to December 2019. Semi-Annual environment safeguards monitoring reports is a requirement under the SPS. In addition, the report provides a clear picture regarding the future implementation of CEMP activities as well as the environmental outcome.
- IV. 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.
- V. The project is nearing completion since it started in 18<sup>th</sup> 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 enterprise.
- VI. The main aggregate extraction site is the Upegu Riverine quarry in Bena District. However, the site was closed in mid-October 2019, due to royalty payments amongst the landowners.
- VII. Issues with locals stopping work progress has increased during this period with several complains which has resulted in the delay of work progress. However, for the month of December most issues have eased providing way for work progress to continue again.
- VIII. HIV/AIDS service providers Fore Health Centre had not been doing testing and awareness since December 2018, the contractor has failed to check up on their service provider.
- IX. Water and air quality testing plus noise level tests are conducted by CWYC environmental office for the month of August, September and November (2019), results are tabulated and present in the report.
- X. Construction work progress has speed up in the month of December with most work nearing completing. All four bridge are completed.

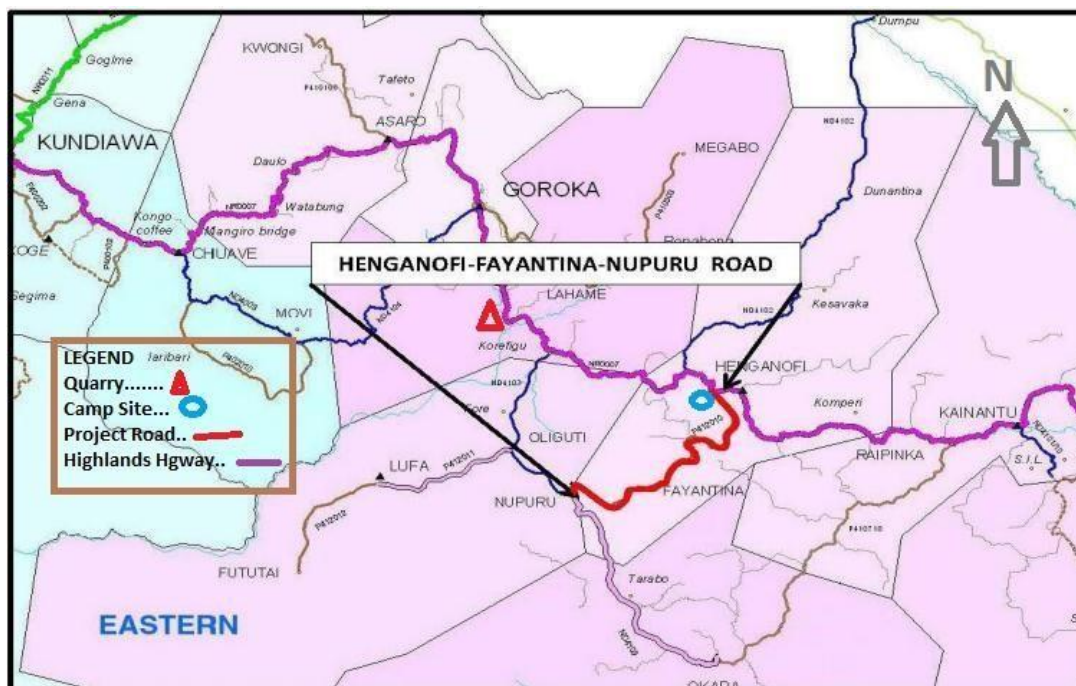
## **1.0 INTRODUCTION**

### **1.1 Background**

1. The Government of Papua New Guinea (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.
2. 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.
3. 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).
4. 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.
5. 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.
6. 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.
7. 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 CWYC.

### **1.2 Sub-Project Description**

8. 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 Kainaintu 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 of Henganofi-Nupuru Road sub-project**

9. 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 traverse's 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.
10. 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.
11. 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.
12. 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.
13. 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. Consequently, 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.
14. The Eastern Highlands province plays host to the Crater Mountain and is located southwest of the Henganofi Nupuru road.

15. 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.
16. 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.
17. 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.
18. 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.

### **1.3 Proposed Scope of Works**

19. 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.
20. 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.

21. 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 1: Bridges along Henganofi to 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

22. 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.); and (xiv) Pave roadway with DBST.

23. The upgrading and rehabilitation work 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:

24. 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.

#### **1.4 Purpose**

25. 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.
26. 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.

#### **1.5 Methodology**

27. 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.
28. 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.
29. The list of reports reviewed is in Appendix 1 whilst names of people interviewed are in Appendix 2.

#### **1.6 Institutional Arrangements**

30. 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.
31. 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.
32. 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).

#### **1.7 Report Organisation**

33. 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

## 2.0 MONITORING RESULTS AND FINDINGS

34. The main findings of monitoring shall include the assessment of environmental impacts during the review period and proscriptive requirements are presented in this section.

35. The basis for monitoring are the parameters that would be considered in the CEMP of which there are 19 as follows: Contractor's camp and yard, Earth Works, Erosion and sedimentation, Water quality, Air quality, Noise, Waste management, Hazardous material management, Aggregates extraction, Tree removal and vegetation management, Socio-economic issues (workers), Socio-economic issues (community), Health and safety issues, Employment Opportunities (Locals), Traffic management, Prevention of HIV/AIDS and STDs, Existing Infrastructure Issues, Environment Related Grievances and Training and Mentoring

36. The summary of non-compliance from the monthly reports prepared jointly by HRMG and PSC is provided in Table 2. Environment Officers from HRMG with PSC should prepare the Notices of Violation if warranted based on the standards set during a meeting for this purpose.

**Table 2: Monitoring Parameters on each station**

#	Monitoring (STN)	Stations	Unified Monitoring Parameters
1	STN 2.0		Summary of compliance and non-compliance
2	STN 3.0		Training, Mentoring and Meetings
3	STN 4.0		Health and Safety Issues
4	STN 5.0		Contractor's Camp and Yard
5	STN 6.0		Earthworks
6	STN 7.0		Erosion and Sedimentation
7	STN 8.0		Water Quality
8	STN 9.0		Air Quality
9	STN 10.0		Noise Level
10	STN 11.0		Waste Management
11	STN 12.0		Hazardous Waste Management
12	STN 13.0		Aggregates Extraction
13	STN 14.0		Ancillary Facilities Management
14	STN 15.0		Tree Removal and Vegetation Management
15	STN 16.0		Socio-Economic Issues of Workers
16	STN 17.0		Socio-Impacts to the community
17	STN 18.0		Public Safety
18	STN 19.0		Traffic Management
19	STN 20.0		Prevention of /HIV/AIDS and STIs
20	STN 21.0		Existing Infrastructure Issues
21	STN 22.0		Environmental Related Issues

**Table 3: Summary of Non-Compliance to CEMP**

<b>Monitoring Parameters</b> <b>x=non-compliance, √=compliance, N/A =</b> <b>Not Applicable</b>		Monitoring Months					
		July	Aug	Sept	Oct	Nov	Dec
STN02	Summary						
STN03	Training, Mentoring and Meetings	✓	✓	✓	✓	✓	✓
STN04	Health and Safety Issues	✓	X	X	X	X	✓
STN05	Contractor's camp and Yard	✓	✓	✓	✓	✓	✓
STN06	Earth Works	✓	✓	✓	✓	✓	✓
STN07	Erosion and Sedimentation	✓	✓	✓	✓	✓	✓
STN08	Water Quality	✓	✓	✓	✓	✓	✓
STN09	Air Quality	✓	✓	✓	✓	✓	✓
STN10	Noise Management	✓	✓	✓	✓	✓	✓
STN11	Waste Management	✓	✓	✓	✓	✓	✓
STN12	Hazardous Waste Management	✓	X	X	X	X	✓
STN13	Aggregates Extraction	✓	✓	✓	✓	✓	✓
STN14	Ancillary Facilities Management	✓	✓	✓	✓	✓	✓
STN15	Tree Removal & Vegetation Mgmt.	N/A	N/A	N/A	N/A	N/A	N/A
STN16	Socio-economic Issues of Workers	✓	✓	✓	✓	✓	✓
STN17	Socio-Economic impacts – Comm.	✓	✓	✓	✓	✓	✓
STN18	Public Safety	✓	X	X	X	X	✓
STN19	Traffic Management	✓	X	X	X	X	✓
STN20	Prevention of HIV/AIDS and STIs	✓	✓	✓	✓	✓	✓
STN21	Existing Infrastructure issues	N/A	N/A	N/A	N/A	N/A	N/A
STN22	Environmental Related Grievances	✓	✓	✓	✓	✓	✓

## 2.1 Contractors Camp and Yard

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

38. 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.



39. The campsite Yard was generally well maintained. Each section was well supervised as well.



Picture 1: Items stored neatly at Contractors storage area

## 2.2 Earthworks progress monitored

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

Table 4: Progressive Status of Road Construction Activities

No.	Construction Activities	From Chainage	To Chainage	Status
i.	Clearing and Grubbing	0 + 000	34 + 400	Completed
ii.	Cut and Fills/Maintenance	0 + 000	34 + 400	Completed
iii.	Embankments/Capping's	0 + 000	34 + 400	Completed
iv.	Sub-Base	32 + 540	34 + 400	97% complete
v.	Base-Course	30 + 500	33 + 300	Work progressing well
vi.	Final Trimming	30 + 500	32 + 300	Work progressing well
vii.	Priming	30 + 500	31 + 360	Work progressing well
viii.	Sealing – 19 mm	0 + 000 28 + 260	0 + 400 29 + 800	Sealing work carried out
ix.	Line Drains	31 + 480	32 + 310	Work progressing well
x.	Culverts Installation	29 + 040	30 + 140	Two Culverts Install Last This Total Month Month 106 1 107

xi	Bridges	0 + 000	34 + 400	No. of Bridges Last Month 6 This Month 0 Total 6
xii.	Retaining Walls	No work done	No work done	No. of Retaining Walls Last Month 7 This Month 0 Total 7
xiii.	Gabion Basket	28 + 070	32 + 130	No. of Gabion Baskets Last Month 14 This Month 3 Total 17

**Source: China Wu Yi Co., Limited (CWYC)**

1. Clearing and Grubbing completed to CH: 34 + 400 on the month of March 2019.
2. Cut and Fill completed this month CH: 34 + 400.
3. Embankment/Capping completed CH: 34 + 400.
4. Sub-Base gravelling continues from CH: 32 + 540 – CH: 34 + 400.
5. Base Course continued from CH: 30 + 500 – 30 + 300.
6. Final Trimming was carried in between CH: 30 + 500 – 32 + 300.
7. Priming work carried out between CH: 30 + 500 – 31 + 360.
8. Sealing activities carried out CH: 0 + 000 – 0 + 400 and 28 + 260 – 29 + 800.
9. Line Drain construction looks better as it continued from CH: 31 + 480 – 32 + 310.
10. Gabion Basket works carried out at 24 + 600 – 27 + 680.
11. Culvert installation has been inserted at CH: 29 + 040, culvert instal with out land issues.
12. Total of six bridge works has been completed and currently is use while only Hogoteru bridge waitng for backfill.
13. Three (3) locations for the cabion baskets had been completed this month.




**Picture 2: Photos showing work progress during this period.**

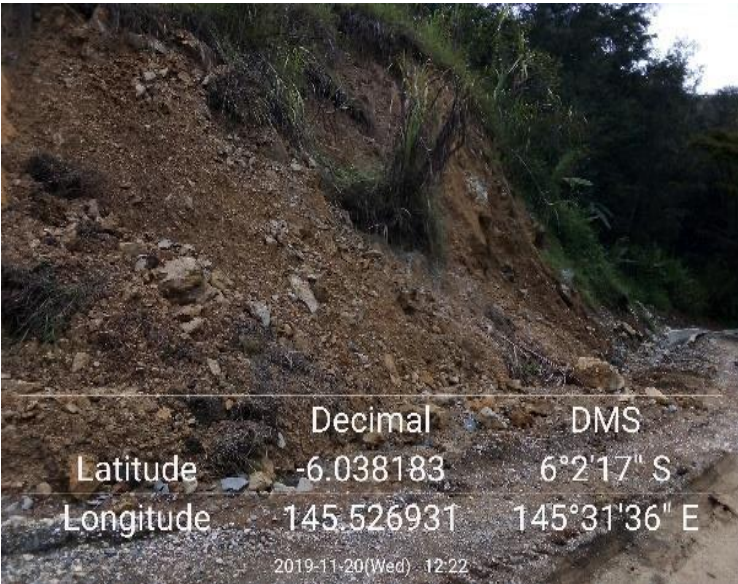
## 2.3 Erosion and sedimentation monitored

41. There were no issues regarding sedimentation and erosion for the concerned period except for the month of November; there were several issues which are presented in the table below.

**Table 5: Description of major landslip (erosion) observed with suggested actions.**

Location	Photograph	Description/Remarks
CH28+130	 <p>Decimal      DMS</p> <p>Latitude: -6.038183      6°2'17" S</p> <p>Longitude: 145.526931      145°31'36" E</p> <p>2019-11-20 (Wed) 13:18</p>	<p>Sediments flow shown in the photograph from LHS of the road has caused demolition to 20 metres line drain.</p> <p>Also, the Kunai thatched church build there is most likely to be affected while other local crops planted along the side of the road were destroyed.</p> <p>Therefore, this place would need like drain rework and gabion baskets to be constructed to protect the sediments flow to avoid further damages.</p>



<p><b>30+620</b></p>		<p>As shown in the photograph, this small landslide alongside the road has demolished 30 metres Line drain.</p> <p>Therefore, this section needs re-work and clearance.</p>
<p><b>31+400</b></p>		<p>Landslip and sediment flow shown in the photograph has covered half of the road. This section was cleared for line drain and gabion basket.</p>

32+740	 <p>Decimal      DMS</p> <p>Latitude      -6.038183      6°2'17" S</p> <p>Longitude      145.526931      145°31'36" E</p> <p>2019-11-20(Wed) 12:38</p>	<p>As shown in the photograph, the kunai thatches house where a family lives is under destruction. The issue has been negotiated with the affected family and the contractor has agreed to provide 12 X 12ft roofing irons (Capa).</p>
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## 2.4 Water quality monitored.

42. Baselines have been gathered for water quality and are used as comparison in the monitoring of sediments in water bodies during earthworks activities and bridges construction or repair.

43. For the concerned period there where three testing done for the month August, September and November 2019 only, by CWYC environmental officer. The results are shown in the tables below.

44. A. Water Quality Test along Construction Site were established.

**Table 6: Water quality tests results 1 (Month of August 2019)**

Chainage	Temperature °C	Total Dissolved Solid (ppm)	Remarks
CH 0 + 348	28.10	085	<input type="checkbox"/> River along the road corridor at
			Konamempi
CH20+560(Fore)	27.1	076	<input type="checkbox"/> River that runs alongside the Fore market
CH22+080	26.5	035	<input type="checkbox"/> It a flowing creek used for laundry and bath. Tested during rainy period.
CH23+135	24.7	067	<input type="checkbox"/> It's a small drinking water at the side of the road. Tested at rain period.

CH23+545	27.5	044	<input type="checkbox"/> Creek that is used for drinking but turned dirty when it was rained.
CH27 + 950	27.3	074	<input type="checkbox"/> Imaka River, side of the primary school and also people do marketing along the river side.
CH31+540	26.1	168	<input type="checkbox"/> Fishpond alongside the road

**Table 7: Water quality tests result 2 (Month of September 2019)**

Chainage	Temperature °C	Total Dissolved Solid (ppm)	Road/Remarks
CH 0 + 348	27.8	095	Unsealed. River flowing along the road corridor at Konamempi
CH20+540(Fore)	24.1	102	Unsealed. River flowing alongside the Fore market
CH21+300	25.5 26.8	123 up-stream 135 d/stream	Sealed. It's a small creek used for drinking.
CH22+120	25 24.3	079 upstream 101 downstream	Sealed. It's a creek used for both drinking & other cooking and washing.
CH23+900	26.3	057	Unsealed. River flowing alongside a community/Hogeteru where bridge was built.
CH27 + 950	27.3	098	Unsealed. Imaka River, flowing alongside primary school and also people do their marketing along the river. A bridge was built within the month for Imaka.





**Picture 3: Env Specialist conducting water quality testing at Fore River CH 20+540**

**Table 8: Water Quality Test Result (Month of Nov.2019)**

Chainage	Water quality test results obtained in November 2019		
	Temperature °C	Total Dissolved Solid (ppm)	Road/Remarks
CH 0 + 348	28.9	109	<input type="checkbox"/> Unsealed. River flowing along the road corridor at Konamempi
CH20+540(Fore)	25.1	090	<input type="checkbox"/> Sealed. River flowing alongside the Fore market
CH21+300	24.1 25.8	056 u/stream 098 d/stream	<input type="checkbox"/> Sealed. It a small creek that is used by locals for drinking.
CH22+120	25 24.3	054 upstream 101 downstream	<input type="checkbox"/> Sealed. It's a creek, at its inlet locals are used it for both drinking, cooking and washing.
CH23+900	25.4	067	<input type="checkbox"/> Unsealed. River flowing alongside a community/Hogeteru where bridge was built.
CH27 + 950	28.1	084	<input type="checkbox"/> Unsealed. Imaka River, flowing alongside primary school and also people do their marketing along the river. A bridge was built within the month for Imaka.

## 2.5 Air Quality monitored

45. Specifically, along the unsealed Chainage of the road corridor the probability of dust increases especially during dry (sunny) periods at noon and afternoons as vehicles move to and from. At these times Water Trucks are advised to spray water along areas where construction activities were undertaken and along the market and populated areas to maintain good air quality and dust free.

**Table 9: Air quality testing result (Month of August 2019)**

<b>AUGUST</b>				
<b>Chainage</b>	<b>Pm2.5</b>	<b>Pm10</b>	<b>Road Status</b>	<b>Comments</b>
0+355	56ug/m3	107ug/m3	Unsealed section	Populated (Konamempi)
10+000	14ug/m3	26ug/m3	Sealed section	Only few people
20+450	15ug/m3	34ug/m3	Unseal section/ Subbase.	Populated (Fore Market)
21+780	29ug/m3	42ug/m3	Unseal section/subbase	Only few people live
23+700	23ug/m3	58ug/m3	Unsealed section	A little village/few people live and also move to and from.
27+950	29ug/m3	71ug/m3	Unsealed section	Populated (Imaka school)
29+660	7ug/m3	32ug/m3	Unsealed section	Only few people
31+540	9ug/m3	18ug/m3	Unsealed section	Only few people

**Table 10: Air quality testing result (Month of Sept.2019)**

<b>Chainage</b>	<b>Pm2.5</b>	<b>Pm10</b>	<b>Road Status</b>
0+480	60ug/m3	119 ug/m3	Unsealed
6+800	9 ug/m3	19ug/m3	Sealed
20+450	15ug/m3	34ug/m3	Unseal
21+090	9ug/m3	18ug/m3	Unseal
23+750	29ug/m3	63ug/m3	Unsealed
26+500	23ug/m3	60ug/m3	Unsealed
27+700	12ug/m3	36ug/m3	Unsealed
31+530	18ug/m3	46ug/m3	Unsealed

**Table 11: Air quality testing result (Month of November 2019)**

<b>Chainage</b>	<b>Pm2.5</b>	<b>Pm10</b>	<b>Road Status</b>	<b>Comments</b>
0+480	40ug/m3	89 ug/m3	Unsealed	Populated (Konamempi)
6+800	12 ug/m3	27ug/m3	Sealed	Populated (Sky)
20+450	19ug/m3	31ug/m3	Sealed	Populated (Fore Market)
21+090	7ug/m3	16ug/m3	Sealed	Only few people live
23+750	21ug/m3	54ug/m3	Unsealed	A small village/few people live and move to and from.
26+500	11ug/m3	30ug/m3	Unsealed	6-mile market/populated
27+700	34ug/m3	56 ug/m3	Unsealed	Imaka/ populated
32+700	10ug/m3	29ug/m3	Unsealed	Populated





**Picture 4: Env. officer doing air quality testing at Konamempi Bridge**

## 2.6 Noise and Vibration monitored

46. 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.

47. 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.

48. Noise/sound level meter has been used in August and September to measure the noise levels along the road corridor. Testing stations are same as the baseline data. This can also be used for comparisons.

**Table 12: Noise level testing results (Month of August 2019)**

Chainage	With Car/Machines	Without Car/Machines	Comments
0 +355	81.2 dBA	60.1 dBA	Konamempi market. Populated area.
10+000	78.1dBA	45.7 dBA	Little marketplace and village
20+520	76.3dBA	55.9 dBA	Fore market/where people are cowed.
21+780	85.8 dBA	54.8dBA	Only few people live but also people move back and forth.
23+700	74.0 dBA	51.3 dBA	Little village/few people live and also move along the road.
28+030	69.1 dBA	42.1 dBA	Little village

29+660	85.4dBA	56.4 dBA	A community, many people live
31+540	74.7dBA	63.1 dBA	Few people live

**Table 13: Noise level testing result (Month of Sept.2019)**

Chainage	With Car/Machines	Without Car/Machines	Comments
0+480	79.8 dBA	58.6 dBA	Populated (Konamempi)
6+800	64.1 dBA	39.8	Populated (Sky)
20+450	79.5 dBA	47.4 dBA	Populated (Fore Market)
21+090	76.4 dBA	46.9 dBA	Only few people live
23+750	82.9 dBA	52.6 dBA	A little village/few people live and also move to and from.
26+500	83.1 dBA	56.2 dBA	6-mile market/populated
27+700	68.7 dBA	43.8 dBA	Imaka/ populated
31+530	84.6dBA	54.1 dBA	Only few people

**Table 14: Noise level testing result at Konamempi Contractor's Camps**

	Konamempi camp			
	Date			
	19 <sup>th</sup> September	Remarks	21 <sup>st</sup> , September	Remarks
1. Air Test				
PM 2.5ug/m <sup>3</sup>	39 ug/m <sup>3</sup>	In front of subcontractor office	38 ug/m <sup>3</sup>	Bitumen kettle areas
PM 10ug/m <sup>3</sup>	65 ug/m <sup>3</sup>		65 ug/m <sup>3</sup>	
2. Noise test				
With Car/Machines	78.4 dBA	In front of workshop	83.1 dBA	Main entrance
Without Car/Machines	51.9 dBA	where noise comes everywhere from machines used within the camp.	54.2 dBA	where trucks/vehicle move in and out.

## 2.7 Waste management monitored

49. The contractor disposes its unsegregated solid wastes into open dump areas which could be breeding grounds for diseases. There is also the possibility of the wastes or leachate seeping into the groundwater. It is recommended that the contractor segregate its waste and follow best practices for solid waste management including composting and the principles of reduce, reuse and recycle.

50. Contractor's kitchen wastes management at the camp site has improved and the contractor has maintained the good practice throughout the concerned period.

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

## **2.8 Hazardous materials monitored**

52. The hazardous wastes from the camp consist mostly of leaking lubricant drums which has seeped into the soil. The hazardous waste management strategy is to ensure that the soil is not contaminated by cementing the storage area and providing bunds to prevent leakage into other parts of the workshop area.

53. The management of hazardous wastes include their storage and ultimately disposal including fluorescent bulbs, computers and peripherals, printers and other equipment. This will also include used batteries, battery fluids, oils, lubricants, and asphalt products. There is a need to regularly monitor the implementation of the Hazardous Waste Management Plan.

54. The contractor is currently storing used lubricants in drums; they have also given to locals who have request for used oil to paint their houses. However, there are evidences of used oil leakages from the workshop into nearby drains.

55. Hazardous material at the construction site and Konamempi camp site are poorly managed. As photographs shown below indicate burning of wastes bitumen after sealing along CH17+100. There are also traces of used oil being soaked up with saw dust and burnt at the camp yard.

56. Images show local employees of contractor in the act of burning bitumen in open air which is a direct cause of air pollution. There are also children and other local bystanders around who are also directly exposed to breathing the harmful fumes of the burning bitumen which can affect their lungs or cause other health problems.



**Picture 5: Contractor employees burning bitumen without wearing nose masks.**





**Picture 6: By standers are exposed to harmful gas from burning of bitumen.**

## **2.9 Quarry aggregate extraction at Upegu quarry.**

57. The Upegu Quarry was closed as of mid-October 2019 due to conflict over royalty payments amongst the landowners. T

58. The contractor is yet to provide a proper quarry closure plan for the Upegu Quarry. Thus, as of November the contractor has purchased materials and aggregates from the Bena Bridge Quarry.



**Picture 7: Quarry site at Upegu Quarry operation**

All machines were oved out crusher dissembled due to contractor winding down.

59. Royalty payments are paid to landowners for the activities covering the months of July – December 2019. For the period extractions where made only from the Upegu Quarry. The estimated amount for Upegu Quarry is based on the signed contract of K3.15/m<sup>3</sup>.

60. The Total volume of aggregates and material extracted by CWYC for concerned period is 38,977.52m<sup>3</sup>; hence an estimated value of K122,759.20 was paid to the landowners.

**Table 15: Quarry extracted quantity and estimated value (Jul-Dec 2019)**

Month	Upegu Aggregates Extraction Volume (m <sup>3</sup> )	Estimated Value (Kina)
July	7,966.88	25,095.67
August	9, 507.36	29, 948.18
September	8,303.28	26,155.33
October	6,600	20,780.00
November	6,600	20,780.00
December		
<b>Total</b>	<b>38,977.52</b>	<b>122,759.20</b>

**Table 16: Water quality testing at Upegu quarry plant site (Aug.2019).**

Monitoring Station	Temperature (°C)	Total Dissolved Solid (ppm)	Comments
Stations 1	27.8	038	Upstream (where an Excavator extracting materials.
Station 2	28.6	035	Downstream 10 meters apart from first point.
Station 3	27.7	037	10 meters further downstream
Station 4	27.5	056	15metres further downstream
Station 5	29.2	027	Point were water percolate water flows from side joins the mainstream
Station 6	27.3	028	River from other side (downstream)

**Table 17: Water quality testing at Upegu quarry plant site (September 2019)**

Monitoring Stations	Temperature °C	Total Dissolved Solid (ppm)
Stations 1	28.0	043
Station 2	27.4	039
Station 3	27.1	057
Station 4	28.1	067
Station 5	28.9	029
Station 6	27.8	023

61. Note: Table 16 - Stations were selected from upstream to downstream. This was basically to see differences in Temp and total dissolve solid (TDS) values due to quarry extraction activities and find out if there were some point of discharges that affects the standard conditions and pose harm to the people and the marine life.

## 2.10 Socio-economic issues

62. Most issues relating to socio-economic benefit of the community are regarding payment of environmental damages along the road corridor.

63. As usual the contractor still gives rental payments to landowners at Upegu quarry site and Konamempi Camp site. The rental payments made for the concerned are presented in Table 12.

**Table 18: Land rentals paid to landowners at contractor's camp and quarry site.**

Month	Upegu	Konamempi	Disposal Sites	Total (Kina)
July 2019	1,200	1,100	-	2,300
August	1,200	1,100	-	2,300
September	1,200	1,100	-	2,300
October	1,100	1,300	-	2,400
November	1,100	1,300	-	2,400
December	0	1,100	-	1,100
<b>Total</b>				

64. There are no rentals for disposal sites for the concerned period.

65. 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 following Tables.

**Table 19: Cash benefits to locals for selling produce to contractor (July 2019)**

Local purchase of Food		Local purchase of Construction Materials		Total
Goods and Quantity	Purchase Amount	Materials and Quantity	Purchase Price	
Vegetables – 500 x 6	3,000	Bamboo	1,300	
Pig – 1000 x 3	3,000	Gravel	800+600+400	
Goat – 450 x 1	450			
Fish – 1100 x 1	1,100			
<b>Total</b>	<b>K7,550</b>	<b>Total</b>	<b>K3,100</b>	<b>K10, 650</b>

**Table 20: Cash benefit to locals for selling produce to contractor (August 2019)**

Local purchase of Food	Local purchase of Construction Materials	Total
------------------------	--	-------

Goods and Quantity	Purchase Amount (Kina)	Materials and Quantity	Purchase Price (Kina)	
Vegetables – 500 x 6	3,000	Firewood for heating bitumen – 250 X 2	500	
Pig – 1100 x 4	4,400	Mountain Gravel	4800+500+7000	
Fish – 1200 x 3	3,600			
<b>Total</b>	<b>11, 000</b>		<b>12, 800</b>	<b>K23, 8 00</b>

**Table 21: Cash Benefit to locals for selling produce to contractor (Sept.2019)**

Local purchase of Food		Local purchase of Construction Materials		Total
Goods and Quantity	Purchase Amount (Kina)	Materials and Quantity	Purchase Price (Kina)	
Vegetables – 500 x 6	3,000	Firewood for heating bitumen – 250 X 2	500	
Pig – 1200 x 4	4,800	Mountain Gravel	13,500	
Fish – 1100 x 3	3,300			
<b>Total</b>	<b>11, 100</b>		<b>14,000</b>	<b>K25, 100</b>

**Table 22: Cash benefit to locals for selling produce to contractor (Nov.2019)**

Local purchase of Food		Local purchase of Construction Materials		Total
Goods and Quantity	Purchase Amount (Kina)	Materials and Quantity	Purchase Price (Kina)	
Vegetables – 500 x 6	3,000	Firewood for heating bitumen – 250 X 2	500	
Pig – 1200 x 4	4,800	Mountain Gravel	13,500	
Fish – 1100 x 3	3,300			
<b>Total</b>	<b>11, 100</b>		<b>14,000</b>	<b>K25, 100</b>

**Table 23: Cash Benefit to locals for selling produce to contractor (Dec.2019)**

1.



Local purchase of Food		Local purchase of Construction Materials		Total
Goods and Quantity	Purchase Amount (Kina)	Materials and Quantity	Purchase Price (Kina)	
Vegetables – 500 x 6	K3,000	Firewood for heating bitumen – 300 X 2	K600	
Pig – 1200 x 3	K3,600	Mountain Gravel	K1,400	
Fish – 15.00 x 4	K60			
<b>Total</b>	<b>K6, 660</b>		<b>K2,000</b>	<b>K8,660</b>

2.

Local purchase of Food		Local purchase of Construction Materials		Total
Goods and Quantity	Purchase Amount (Kina)	Materials and Quantity	Purchase Price (Kina)	
Vegetables and Fruits – 75	K3,000	Firewood, timber and bamboo	K1,600	
Pig – 1200 x 4	K4,800	Mountain Gravel	K8,700	
Fish	K1,100			
<b>Total</b>	<b>K8, 900</b>		<b>K10,300</b>	<b>K19,200</b>

## 2.11 Health and Safety

66. Workers health and safety has improved with several employees in the workshop section receiving their PPEs. Nose masks and safety vests are worn regularly along construction site. However, there is still a major concern for workers safety training and toolbox meetings.

## 2.12 Public Safety

67. The contractor was compliant on its Traffic Management with proper traffic control, speed control for its vehicles and road signage. 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. The contractor provides incentives or bonuses for Dump Truck drivers. Excellent rating earns K80, very good K50 and good K20. Driver who do not performed to accepted standards for driving and traffic are issued with warning cards or have their wages cut.

## 2.13 Traffic Management

68 The contractor is able to use traffic controls at the different workstations along the road. Spotters were assigned at both ends of all workstations to control traffic. Traffic signage were also used to warn the vehicles accessing the road. Reflective tapes were used at sites where culverts were installed to keep the vehicles and pedestrian away from the ditch. Cones were also used to warn vehicles to slow down indicating work taking place on the road ahead.



- 69 The contractor provides incentives or bonuses for Dump Truck drivers. Excellent rating earns K80, very good K50 and good K20. Drivers who do not performed to accepted standards for driving and traffic are issued with warning cards or have their wages cut. 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. All vehicles are fitted with GPS racking devise for the contractor to monitor the speed and location. There were no serious traffic delays along the road. Traffic was moving freely and at certain station delays were not more than 5minutes.
- 70 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. 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. All vehicles are fitted with GPS racking devise for the contractor to monitor the speed and location. Two (2) accidents were reported for the month of December 2019.

#### **2.14 Employment Opportunities (Locals)**

- 71 The contractor has increased the engagement of female along road construction activities such a culvert and line drain construction. However, they have yet to meet ADB expected ratio of 30% of female employment (refer to table 24).

Table 24: Monthly employment by gender (Dec. 2019)

Month	Male	Female	total	DPs Employed	Estimated female Wages (Kina)	Estimated Total wages
July	264	36	300	219	25, 313	
August	272	30	302	201	26, 140	
September	278	27	305	223	25, 923	
October	279	28	307	224	26, 325	
November	279	28	307	224	26,325	
December	257	23	280	205	23, 791	
<b>Average</b>	<b>272</b>	<b>29</b>		<b>216</b>	<b>153, 817</b>	

72 Local employment opportunities include non-payroll activities that involve women; these are presented in table 23 below.

Table 25: Women participation in benefit on non-payroll activities

Month	Spotters	Gabions	Line Drains	Head Wall	Total	Estimate d Wages
July	11	2	2	1	16	8, 930
August	12	3	5	0	20	8, 794
September	10	3	5	0	18	8, 700
October	10	3	5	0	18	-
November	10	3	5	0	18	-
December	10	3	5	0	18	-

### 2.15 Tree removal and revegetation

73 Not applicable during the monitoring period.

## 3.0 GRIEVANCE REDRESS

74 On the 9<sup>th</sup> of July HRMG Social safeguards team met with CWYC Officer at the Bird of Paradise Hotel in Goroka to identify and discuss issues that was affecting work progress at Henganofi Nupuru Project, also to identify each group (HRMG, CWYC & District) role in addressing the type of issues that arise and which issues will need collaborative effort.

75 HRMG social safeguard team was responsible for registering all grievances within the road corridor of the 34km road stretch only. Therefore, any issues that arise as a result of construction work done and relating to construction matter is the sole responsibility of the contractor. *See appendix 4 for the meeting minutes.*

76 The final re-verification of Grievances for Henganofi-Nupuru sub-project was done on the 10<sup>th</sup> of July 2019 by HRMG Social Safeguard Team. After the re-verification the grievances list was finalist. Hence there are now a total of 781 grievances recorded for Henganofi – Nupuru Road. During the re-verification several consultations were made with the locals along the road about what the team was doing and that their questions and queries about grievances payments will soon be addressed. *See appendix 5 for photographs.* -There has been a lot of complains arising from locals regarding environmental damage payments. Work has stopped along several sections of the road

according to the contractor the locals are demanding environmental damages payment before work can progress.

- 77 The concerned section of the road includes CH32+700 to CH34+000 which is the Nupuru section of the road in the Lufa District of EHP. Locals along this section have demanded payments from the MP of Henganofi District for damaged to cash crops (coffees trees) and food gardens. A report concerning this matter was prepared by HRMG Environmental officer on the 20<sup>th</sup> of September 2019. The issues at CH32+700 to CH34+000 are still pending. The locals are still demanding grievances payment. Especially they want to know the actual time they will get paid for the damages done along the road corridor so they can let the work to proceed past this area. On the 12<sup>th</sup> of November 2019, HRMG Goroka team officers were attacked by frustrated local employees of CWYC upon arrival at the camp site at Konamempi over delayed payments of their grievances. Thus, the team returned to Goroka and did not do any site inspection.
- 78 **Note:** All registered grievances have been submitted by HRMG to Henganofi District for approval and allocation of funds.

#### 4.0 HIV/AIDS & STDs AWARENESS AND COMMUNITY CONSULTATIONS

- 79 HIV AIDS is a normal disease that all people are aware and have seen people living with this infection. Some have died and others on treatment. AIDS is just like any other infection that people acquired. At this moment people are not scared about this infection, they enjoy life as it comes on their way without taking precautions. In doing so many lives will be infected and innocent lives will be affected therefore, AIDs are called a lifestyle disease. The table below showed the summary of all the Contractor's HIV/AIDS Awareness activities from July to December 2019.

**Table 26: Awareness materials distributed.**

Number	Description	Descriptions	Quantity
1	Brochures (different)	What to do about rape	20
		Family Protection Act	20
		Wanem em HIV/AIDS	20
		Everyone has the right to life	20
		Rape, Incest, Child Abuse	20

**Table 27: Other Resources Materials also distributed.**

NO.	ITEM DESCRIPTION	QUANTITY
1	Vehicle	1
2	Condom (144 x 4 boxes)	576
Brochures		
1	Wanem em HIV/AIDs na STI?	20
2	Kids keep safe	20
3	Peer pressure	20

4	The Family Protection Act – Domestic Violence is Against the Law	20
5	CIMC – Wife Beating is a Crime	20
6	CIMC – Family Protection Act 2014 – Why Family Protection Act	20
7	CIMC – Rape Incest Child Abuse	20
8	CIMC – What to do about Rape	20
9	Everyone has the right to life	20

**Table 28: HIV/AIDs awareness activities (August 2019)**

July 2019 Details	Report Descriptions	Standard Percentage rated (%)	CWYC Percentage rated
<b>1. Service Provider</b>			
Engagement Reports by Service Provider	Please refer to the attached Service Providers Reports. All reports for the awareness conducted by the SP is submitted to the Contractor	5%	5 %
Activity carried out by Service Provider	1. What is STI? <ul style="list-style-type: none"> <li>- Signs and Symptoms</li> <li>- Preventive Measures</li> <li>- Treatment</li> </ul> 2. What is HIV/AIDS <ul style="list-style-type: none"> <li>- Root of transmission</li> <li>- Preventive Measures</li> <li>- HIV/AIDS Testing</li> <li>- Treatment</li> <li>- Questions and Answers</li> </ul>	15%	15%
<b>2. Employee Services</b>			
Time and Space allocation	1. Ketiporo Village CH 32 + 000 Wednesday 31/07/19 – 1 hours (4:00pm to 5.00pm)	10%	10%
Availability of employees in awareness	<b>Venue</b> Ketiporo. CH 24 + 040 <b>Total</b>	<b>CWYC Employee es</b> M F M F T 10 1 23 13 8 <b>10 1 23 13 8</b>	10%

	<b>Final Total</b>	<b>55</b>		
<b>3. Community Engagement</b>				
Community HIV/TB/STI Awareness	Voluntary Counselling Testing (VCT) is announced openly to the contractors and the local community if anyone is willing to know his or her health status can come for the test. The test is free and confidential at Fore and Henganofi Health Centre.	10%	10%	
Community HIV/TB/STI Testing.	The Testing is now put on hold due to short supply of Testing Kits such as Buffer and Strips Nation Wide by Dept. Of Health.	10%	10%	
<b>4. Provision of Alleviation and Family Support by Contractor</b>				
Number of employees tested	The Testing is now put on hold due to short supply of Testing Kits such as Buffer and Strips Nation Wide by Dept. Of Health.	8%	8%	
Employees tested and given support	The two tested and confirmed with their husband were given support and taken care off by SP.	10%	10%	
Materials Distribution <input type="checkbox"/> Condoms	1. Male – 144 X 2 = 288	18%	18%	
<input type="checkbox"/> Pamphlets	20 HIVAIDS Pamphlets distributed			
<input type="checkbox"/> Posters	Total of 4 postures distributed			
<input type="checkbox"/> Others	Loud Hailer, Printed Banner, First Aids Medical Supplies to Company.			
Total		96%	96%	

**Table 29: HIV/AIDs awareness activities (September 2019)**

August 2019 Details	Report Descriptions	Standard Percentage rated (%)	CWYC Percentage rated
<b>1. Service Provider</b>			
Engagement Reports by Service Provider	Please refer to the attached Service Providers Reports. All reports for the awareness conducted by the SP is submitted to the Contractor	5%	5 %

Activity carried out by Service Provider	1. What is STI & AIDS? - Signs and Symptoms - Root of transmission - Preventive Measures - Treatment 2. Positive Living & Healthy Lifestyle - Positive Changes - Family Violence's - Gender Base Violence's - Questions and Answers					15%	15%	
2.Employee Services								
Time and Space allocation	1. Niaguna CH 31 + 200 - 13/8/19 2. Hogoteru CH 24 + 120 - 13/8/19 3. Fore P/School CH 20 + 100 - 22/8/19					10%	10%	
Availability of employees in awareness	Venue	CWYC Employee		Students & Teachers			10%	10%
		M	F	M	F	T		
	Niaguna CH 31 + 200	8	2	32	47	19		
	Hogoteru CH 24 + 120	5	15	39	36	-		
	Fore P/School CH 20 + 100	13	8	131	89	-		
	Total	26	25	202	172	19		
	Final Total	444						
3. Community Engagement								

Community HIV/TB/STI Awareness	Voluntary Counselling Testing (VCT) is announced openly to the contractors and the local community if anyone is willing to know his or her health status can come for the test. The test is free and confidential at Fore and Henganofi Health Centre.	10%	10%
Community HIV/TB/STI Testing.	The Testing is now put on hold due to short supply of Testing Kits such as Buffer and Strips Nation Wide by Dept. Of Health.	10%	10%
<b>4. Provision of Alleviation and Family Support by Contractor</b>			
Number of employees tested	The Testing is now put on hold due to short supply of Testing Kits such as Buffer and Strips Nation Wide by Dept. Of Health.	10%	8%
Employees tested and given support	The two tested and confirmed with their husband were given support and taken care off by SP.	10%	10%
Materials Distribution <input type="checkbox"/> Condoms	1. Male – 144 X 2 = 288	20%	20%
<input type="checkbox"/> Pamphlets & Broachers	100 different types of Pamphlets distributed		
<input type="checkbox"/> Posters	50 Postures distributed		
<input type="checkbox"/> Others	Loud Hailer, Newspaper cuttings, First Aids Medical Supplies to Company.		
<b>Total</b>		<b>100%</b>	<b>98%</b>

80. The awareness at Hompeiye village was carried out on the 11<sup>th</sup> of September 2019. The team organised a video session on what HIV AIDs can do and or impact on families. The movie titled '**Em Rong Bilong Mi Yet**' was shown. This movie was locally act out by our partners in Goroka Provincial Aids Counsel in PNG context and live style. Most of the participants shed tears and was silent throughout the show. EHFV also acknowledged the presence of the contractor's Safety Officer at the event. There were a good number of participants, men, women and children of different age groups. **A total of 270 participate (see table 30).**

**Table 30: Number or participants attending HIV/AIDs awareness in Hompeiye village**

Days/Dates	Adults		Youths		Children		Total
	Elderly Male	Elderly Female	Male	Female	Males	Female	
11 <sup>th</sup> September, 2019	37	39	35	38	68	53	<b>270</b>

**Table 31: Resources used for awareness campaigns in the communities.**

Number	Description	Descriptions	Quantity
1	Brochures (different)	What to do about rape	20
		Family Protection Act	20
		Wanem em HIV/AIDs (What is HIV/AIDs)	20
		Everyone has the right to life	20
		Rape, Incest, Child Abuse	20
2	Vehicle	White 10-seater land-cruiser	1
3.	Video Screening	Generator	1
4		Power cords	5
5		Power lights	3
6		Overhead Projector	1
7		Laptop	1
8		Pull-down white screen	1

81. It was noted that using this method to pass information to the community brought about a different perceptive on their outlook regarding HIV AIDs. Looking at the act out lifestyle of many of us was frightening, sad, emotional and encouraging. When we hear and read about it, we turn to not pay much attention because it is like a normal lifestyle. But seeing in the picture form (video) put us at the crossroad to evaluate and check ourselves.

82. On September 25<sup>th</sup>, the team visited the community of Haguporo. The community of Haguporo were vocal on the issues of HIV AIDs and asked a lot of questions. Most of them indicated that it was their first time to hear this message and appreciate the team for coming to their community. They indicated that they would like to hear more and do HIV AIDs testing because when someone dies in their community, they usually blame sorcery which leads to fights, families displaced, more deaths and properties destroyed.

83. This was noted and will be capture under the way forward. There were a good number of participants, men, women and children of different age groups. **A total of 72 participate (see table 30).**

**Table 32: Number of participants attending HIV/Aids awareness at Haguporo village**

	Adults		Youth		Children		Total
Days/Dates	Elderly Males	Elderly Females	Males	Females	Males	Females	
25 <sup>th</sup> September, 2019	10	13	17	10	10	12	<b>72</b>

84. In closing, while behaviour change is challenging because of peer pressure, traditional norms, and fear of challenging customary culture, there is need for on-going, long term engagement with individuals and communities was identified, to consolidate learning and behaviour change, and to create a more enabling and supportive environment for women and



men to challenge traditional gender norms and behaviours that promote and condone Gender-Based Violence in their societies.

85. Where possible, EHFV will continue to conduct community outreach visits and engaged partners to cofacilitate the sessions to ensure that more people in rural areas are able to access critical information and services.



**Picture 8: Pictures of communities engaged during HIV/Aids awareness**

86. Ukunupi Awareness: VIDEO Show Title (EM I RONG BILONG MI) The story featured James Gahare who is currently the provincial AIDS coordinator of Eastern Highlands Province. He highlighted many interrelated issues associated with HIV/AIDS. The video told a story of a young girl who happened to be in a secondary school. She was influenced by other young girls of her class to dress up and look for sugar daddies. It happened that she ended up being infected with the HIV virus. She was then removed from the house by her father who was fearful of his role as the village leader. To cut the story short, the video translated an understanding of Parental neglect – roles and responsibility of father and mother to support the girl child in school but that did not eventuate. This saw the girl being forced to look for sugar daddies for support. Patriarchal power – decision making was controlled by the father. Punishment – culture permits certain amount of violence. The father after being aware of the girl's situation removed her from the family house and kept in the pig's house.

87. The video show was mind blowing in the sense that those who attended the show were all in tears. It provoked a lot of discussions after the sessions where many community members had to stand up publicly and declare their emotions of what it's like after seeing the picture.



**Picture 9: Audience at Ukupeni village**

**Picture 10: Number of participants at Ukupeni village**

Days/Dates	Participants (AGE)										
	Adult Males			Adult Females			Children		PLWDS		Total
Ukunupi	40 above	25-39	18-24	40 above	25-39	18-24	Males	Female	M	F	
Total attendance	15	21	16	35	20	17	20	27	1	1	173

### **Awareness at Fayantina Nupuru Highway**

88. The activity was based on awareness and information paper distribution. The team started off by distributing brochures and leaflets at Toronte village – junction to Krevave community. We further went into Fore, Hogeteru, Ukunupi and Niaguna community. A total of 210 information brochures were distributed. Whilst, people were not aware of this engagement activity, the team managed to get their attention through greetings and introducing the purpose of the visit. Many accepted our involvement and showed appreciation towards the awareness. Attached are pictures of this engagement activity





**Picture 11: Distribution of brochures along the side of the road.**

89. The picture saw Ismael distributing the brochures while I did the talking. Pic#2: Site volunteer at Hogeteru and a village leader being handed the brochure for distribution at the village. Pic#3: information brochures were given to sellers along the highway for later distribution to the workers still at work. Pic#4: Ismael talking to some youths beside the road at Hogeteru

**Table 33: Number of participations for Fayantina community**

Days/Dates	Participants (AGE)			Total
	Adult Males	Adult Females	Children	
	70	30	33	133

## 5.0 CAPACITY BUILDING AND TRAINING

90. The contractors' Environment officers participated in the Quarry Closure and Rehabilitation training conducted by the PSC International Environmental and Social Safeguards Specialist at Kimininga Lodge on the 9th of September 2019.



**Quarry Closure and Rehabilitation Training conducted by PSC IESSS at the Hotel Kimininga**

Picture 12: Capacity Building workshop conducted

## 6.0 CONCLUSION AND RECOMMENDATION

### 6.1 Conclusion

- 91 The second semi-annual report for 2019 indicates that the CEMP is being implemented substantially though there are some monitoring parameters that needs to be taken seriously most especially public safety. traffic management and health and safety. Hazardous waste management is poorly practised, contractor needs to follow proper sets of guidelines in their Hazardous material management plan for proper disposal of wastes products. The work progress for this project though a bit behind the 24month schedule given since the commencement of the project in 18<sup>th</sup> November 2019. However, it is now nearing completion with all four bridges along the stretch of the road. The provision of PPEs has improved for the period the contractor is commended for complying. The contractor has to conduct monthly monitoring of environmental parameters identified in the CEMP and IEE.
- 92 In conclusion, EHFV is a member of the Family Sexual Violence Action Committee in Eastern Highlands and PNG. This committee consists of health partners (Marie Stopes, Provincial Aids Authority, Family Support Centre), INGOs, NGOs, Government Departments (Police & Community Development) and has worked to develop partnerships with social, health and government service providers, to increase access to GBV services for people including living with disabilities, HIV/AIDS, to improve their understanding of challenges faced, and to increase public awareness of the rights of women and girls including those living with disabilities, HIV/AIDs. Since building these relationships, EHFV is working on to develop MoU with Disability Organization, Marie Stopes and are working to formalize their partnership and ensure ongoing reciprocal support is maintained.
- 93 Oil spills at the workshop needs to be addressed by using trim drums to collect waste oil and use sawdust as absorbents for spills. Otherwise the workshop is generally in good working condition. The fuel station has been well management and strictly supervised.

Electricity switchboard and standby generators were well secured and safely operating. The materials lab has been well managed. Lab equipment were safely secured, and authorised personnel only allowed to access the lab. All storage areas were well secured and generally well managed. Each storage area and shed has its owner supervisor

## **6.2 Recommendation**

- 94 There is a need for workshops and training for environmental and safety officers for both contractors, HRMG and PSC to pertain knowledge and skills with the used of in-situ equipment, traffic management and safety issues etc...
- 95 The contractor must assist monitoring team with information and data needed for report writings.
- 96 The contractor is required to provide a Quarry Closure Plan for Upegu Quarry immediately, as closing a quarry without proper close-up mitigation is an environmental violation.
- 97 The contractor should also notify Monitoring teams to be present for a joint monitoring and testing of water quality, air quality and noise level tests in order to avoid denunciation of data manufacturing.
- 98 Recommended actions provided by HRMG and PSC in the monthly reports are very vital for the contractor to review and improve on concerned areas. This will avoid issues and further corrective actions by HRMG and PSC.
- 99 Contractor to prepare its camp closure plan and submit to DOW/HRMG.

## APPENDICES

### Appendix 1: World's Aids Day Awareness (December 1, 2019)

The World Aids Day always falls on Sunday the 1<sup>st</sup> of December 2019, which is to observe this special day to commemorate this day for people all around the world who are leaving with the disease AIDS and also to remember those who are affected and living today as well as who had passed away.

The contractor has taken a positive step ahead apart from its road construction activities by making fund and materials available to the Safety Department and its service provider (Fore Health Services) who carried out World Aids Day celebration starting from Main Camp – Konamempi (CH: 0 + 000) and finishing at Nupuru market (CH: 34 + 400) with the theme for the 2019 observance **“Ending the HIV/AIDS Epidemic: Community by Community”**.



Contractors PRO, EO, SO, and Service Provider officers getting prepared.



### Performance Indicators

The statistics revealed the number of people whom the team caught up with at the project site.

#### Events statistics

Table 1. The table below displays the number of people present at the venue.

Number of Participants											
Village	Adult		Youth		Children		PLWD		Total by sex		TOTAL
	M	F	M	F	M	F	M	F	M	F	Both
Henganofi - Nupuru market	365	282	213	196	109	126	0	0	687	604	1,291
										Total	1,291



## Staff & Partners Statistics

Organization	Male	Female	Total
EHFV/FORE HEALTH CENTRE	2	0	2



Awareness at  
CH: 29 + 200



Awareness at  
CH: 30 + 000



Awareness at  
CH: 32 + 500





## **Appendix 2: 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. Social Safeguards Monthly monitoring reports

## **Appendix 3: List of People Interviewed**

1. Mr. Alberto Fieramosca – Resident Engineer PSC.
2. Mr. Johnny Buduhan – Resident Engineer PSC
3. Junior Dick Karre– 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.

## **Appendix 4: Meeting Minutes of the 9<sup>TH</sup> of July 2019**

1. On the 9<sup>th</sup> of July 2019 HRMG Social Safeguards Team Leader Mr Jerry Kevin travelled from Mt Hagen to Goroka and met with HRMG Goroka team, CWYC officers and Henganofi District CRO for a short meeting at the Bird of Paradise Hotel.

### **1) Purpose of the Meeting**

2. The main purpose of meeting was to identify social safeguard issues on ground at Henganofi-Nupuru Road Project and measure to be taken and responsible authorities to address each issue.

### **2) Officers present during the Meeting:**

1. Mr. Jerry Kevin, HRMG Social Safeguards team leader.
2. Mr. Jones Sunaba, Works Technical Supervisor
3. Auwo Samson, HRMG Social Safeguards Officer.
4. Anita Uvovo, HRMG Environmental Officer.
5. John Upave, HRMG CRO
6. Rebecca Ken, HRMG female CRO
7. Wilson Wong, CWYC project manager
8. Sophie, CWYC administrative officer
9. James Andawawe, CWYC safety officer
10. CWYC new CRO.

### **3) Time and Activities Engaged in on the 9<sup>th</sup>-07-19.**

3. All persons arrived at the Bird of Paradise Hotel around 1:40pm. After a short meet and greet the official meeting minutes started at 1:55pm and ended at 2:50pm.
4. Opening Remarks made by Mr Jerry Kevin – HRMG Social Safeguards Team Leader
5. Identification of issues where locals have put stop to construction laid out John Upave – HRMG CRO, CWYC CRO and Jones – Henganofi District CRO.
6. Remarks or additional comments made by HRMG Environmental Officer – Anita Uvovo and CWYC project Manager Wilson Wong.
7. Closing Remarks by Jerry Kevin.

### **4) Meeting Agendas and Discussions**

#### **1. Identification of Current Issue on Ground**

8. 300m at CH16+800 – CH17+100 where local man stopped sealing. The new CWYC-CRO talked to this local man and convinced him enough so this section of the road has been sealed already.
9. Lufa Border CH32+700, the Nupuru Community are still demanding improvement payments from Henganofi District although according to Jones (Henganofi District CRO) the District CRO of Lufa informed Mr Jones that the local MP for Lufa has already made payments to the Nupuru community already.
10. Konamempi Bridge number one CH0+300 new diversions made to construct the new bridge. Locals stop work to demand compensation for this new alignment before works proceed.
11. CH21+000 local people demand payment from CWYC for land slip

12. Any other issues apart from the above mentioned are all relating to grievances and payments. Frequently asked question is when the payment for grievances will be made.

## **2. Improvement Payments**

13. The improvement payments were already been done 2 years ago by Henganofi District after the initial improvement works have been done.
14. Therefore, the grievances collected during the upgrade and rehabilitation of the 34km road are only for matters or cases which have been overlooked during the initial payments. Plus, if there are new structures or vegetation or gardens which were built or grown after the improvement works. However, all these grievances must be within the road construction limit.
15. Any damage done during construction phase outside of the road construction limits is the responsibility of the contractor and will not be recorded as a grievance by HRMG safeguard officers.
16. All grievances will be re-verified then addressed in the GRC meetings and payments will be made according.

## **3. Authorities Responsible for certain issues on ground**

17. All matters relating grievances along or within the road construction limit is the responsibility of HRMG. The road construction limit is defined by the design of the road thus it is not all the same throughout the entire stretch of the 34km road.
18. All construction related Issue or matter like bridges and access roads is the responsibility of the contractor. Thus, it will not be address as grievances by HRMG. However, all can work collaboratively to resolve certain issues.

## **4. Grievances Re-verification**

19. There are total of 779 grievances collected by HRMG CRO and social safeguard officer. The first verification was done up to CH26+000 therefore the second re-verification was schedule on the 10<sup>th</sup> July 2019 from CH26+000 to CH34+000 at the end of the road project.

## Appendix 5: Re-verification Photographs



Figure 8 Meeting between HRMG Social safeguard team and CWYC at Bird of Paradise Hotel in Goroka



Figure 7 HRMG Social Safeguard Team doing re-verification of grievances along CH27+000, Henganofi-Nupuru Road.



Figure 10 Re-verification done by HRMG officers along CH32+000



Figure 9 Public consultation at Henganofi and Nupuru Border CH32+700

## Appendix 6: Construction Work Progress for July to December 2019.

Table 2. Summary of Construction Work and estimate completion Rate

Activity	Remarks	Estimate completion Rate
Cleaning / Grubbing	<input type="checkbox"/> Completed	<input type="checkbox"/> 100%
Cut & Fill, Embankment & Capping	- CH31+720 & 30+780 re-alignment	<input type="checkbox"/> 95%
Culvert Installation	<input type="checkbox"/> Last culvert constructed at CH33+675 completed this month.	<input type="checkbox"/> 100%
Drainage Construction	<input type="checkbox"/> Progress for drainage construction work has reached CH32+540 last month and this month they worked within some Chainage which they left out.	<input type="checkbox"/> 90%
Base and Subbase	<input type="checkbox"/> Trimming and adjustments continue from CH CH23+450 to CH23+700	<input type="checkbox"/> 70%
Priming and Sealing	<input type="checkbox"/> Priming & sealing are done as far as CH30+520, however some of sections were skipped for proper earth work.	<input type="checkbox"/> 65%





**Figure 11 laying of road base underway**



**Figure 12 Gabion baskets built to prevent future landslips**





**Figure 13 Priming along 31km to 32km**



**Figure 14 Sealing at Imaka**



**Figure 15 Hogoteru Bridge #2  
CH23+000**



**Figure 16 Konamempi Bridge #1  
CH0+300**