

Appendix 8 List of Attendees

	Name	Dept	Position	e-mail
1.	Fores Abraham		Acting Station Manager	fores.abraham@fsntc.fm
2.	Robert H. Jackson		Administrator	rhjackson44@gmail.com
3.	Maxwell H. Salite		Administrator, Fisheries	fisherieskos@mail.fm
4.	Kiobu Luey		Inspector, KIRMA	lkiobu@kotmail.com
5.	PREWAY ABDON		- KIRMA	kijipal@gmail.com
6.	STANDON ANDREW		Administrator, HPO	ksahpo@mail.fm
7.	Heidi Sigrah		Administrator, EDP, DREA	heidi.sigrah@gmail.com
8.	Lyndon Cornelius		Director, DREA	lyndonc.drea@gmail.com
9.	Krick E Waqak		Truancy/wildlife (KIRMA)	wakukeride@yahoo.com
10.	Blair P Charley		GIS Specialist, KIRMA	charleyblair@gmail.com
11.	Steven Palik		Fisheries Specialist/KIRMA	s.asupalik@gmail.com
12.	Robinson Timothy		Kororae Land Court	rhtimothy@yahoo.com
13.	Luke Gowing		Environmental Safeguards Specialist	lgowing@agow.com
14.	NAILASKAU-HALATU, NIA		Social Safeguards Specialist	halatutua@gmail.com
15.	Aaron Warren		Project Coordinator	ALW.FSM@GMAIL.COM
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17.				
18.				
19.				
20.				

Chamber of Commerce - Attendance Sheet. 10/20/16

Kosrae Cable Project.

Name: Role/Position: Contact Details:

1. Luke Cowing. Environmental Safeguards Specialist lcowing@argperu.com
2. Naila Halatutua Social SS halatutua@gmail.com
3. Smith Sigra Kosrae Chamber of Commerce Kosraeace@gmail.com
4. Naimi Jerry Member, Kosrae Chamber naimi.jerry@y...
5. Stanley Raffilman Administrator, DREA sraffilman@investkosrae.com
6. Grant Ismael Executive Director grant.ismael@gmail.com
7. Morvada Edwin Vice-Chairman morvada.edwin@outlook.com
8. Isao MIKE Secretary KCC pamelis.kosrae@gmail.com
9. Gwendolyn Samuels BOARD-KCC gwendolyn.samuels@bankofj...
10. Shrew Jonas KCC BOT gindbiz2@yahoo.com

Attendance - Community Consultation (Kororae)
State legislature building 20/10/16

<u>Name</u>	<u>Role / Position</u>	<u>Contact email</u>
1. Luke Gowing	Environmental Safeguard Specialist	lgowing@argpenw.com
2. Rinson H. Edmond	State Senator	rinsonharddickson@gmail.com
3. MAKER H. PALSIS	KSL	
4. Gilton A. Esahu	State Senator	gamsongwan@hotmail.com
5. Josuah F. Waguik	State Senator	
6. Salpator E. Tiltas	KSL	
7. Mallu Tally	Malan Youth	
8. George H. Tubuka	KIRMA	
9. Switson E Robert	Finance	switsonrdra@yahoo.com
10. ERICK E Waguik	Trusty	weluhorich@galson.com
11. Steven A Pelik	Marine Conservation	swasupelik@gmail.com
12. Jacob Z George	Tafunsak Mayor	tmg3211@outlook.com
13. Robert H. Jackson	KIRMA	rbjectson14@gmail.com
14. Gerson A. Jackson	Private Consultant (former Ambassador)	gajackson12@gmail.com
15. Lyndor Cornelius	Director, DREA	
16. Naila Alakuitia	SSS	
17. [Signature]	JOHD (Morgan Texas) Senator	
18. Albert T. Welby	Member, KSL	

BELL GULLY

19. John Sigrah - Kororae Rep - BMTC Board www.bellgully.com

Name

Position/Role

Contact

20. Fivos Abraham - Acting Mgr. FSMC Kosrae
~~21. JOHN SIGRAD~~ FSMC BOD FOR KOSRAE
21. Nena Williams - Chief of staff

Stakeholder Meeting

25/10/2016

- WB Fibre Optic Cable Project.

Name:

Role/Position:

Contact:

- | | | |
|--------------------|-----------------------------------------|-----------------------------|
| 1. Luke Gowing. | Environmental Safeguards Specialist | lgowing@corpew.com |
| 2. MEERE KAROTU | Telecommunication & ICT Project-Manager | meere.karotu@mcttd.gov.ki |
| 3. RENGA. TEANNAKI | ICT POLICY ANALYST | renga.teannaki@mcttd.gov.ki |
| 4. Reeri Tioti | Lands / MELAD | merianateburakere@gmail.com |
| 5. Tiaotini Enari | Lands / MELAD | tiaotinienari@gmail.com |
| 6. Sonia Schutz | Deputy Secretary (Min office) | soniaschutz@gmail.com |
| 7. Kanaann. Ngutu | ICT officer | kanaann@mfmrd.gov.ki |

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Fibre Cable meeting

Nauru
Tel bldg

31/10/2016

Name:

Position:

Contact:

1. Luke Gowing Env. Safeguard Specialist lgowings@pennon.
2. John Rebutka Senior Govt Counsel johnrebutka@gmail.com
3. Calistus Cain - Rep Climate Change calistus.cain@gmail.com
4. Bryan Starr - DCE bryanstarr00@gmail.com
5. JOEL WAPA - ILT HOD joelwapa@naurugov.nr
6. Nailerika Helehuika Soc Safeguard Specialist helehuika@gmail.com

Consultation Meeting - Nauru Cine Centre

2/11/16

Fibre Optic Cable VESIA

Name:

Position/role:

Contact:

1. Luke Gowing Env. Safeguard Specialist lgowing@argoem.com
2. Naila. Hakitua Soc. w " halakastur@gmail.com
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4. JOEL WAPA ICT/MEDIA MOD joel.wapa@naurugov.nr
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- * 8. Humble Peo Community Liaison C/O humble.peo@npl.gov.nr
9. Alumita Lekenava Legal Manager, EHC alumita.lekenava@gmail.com
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11. Douglas D. Audoa President - NPBSO → ddaudoa@gmail.com
12. President - NLOA →
13. "NPBSO" : NAURU Private Business Sector Organisation.
14. "NLOA" : NAURU LAND Owners Association.
15. Gindy Kephas Nauru Women's National Council
16. Muzzin Gadd ICT Technician muzzin.gadd@gmail.com
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Appendix 9 Environmental Mitigation (ESMiT) and Monitoring (ESMoT) Tables

Table 9A: Environmental and Social Impact Mitigation Table (ESMiT)

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	LOCATION	TIMING/ DURATION	IMPLEMENTATION	SUPERVISION
1.0 Pre-Construction Period (Planning and design actions to prevent impacts)						
1.1 Physical Environment						
Land Access	Unable to secure access to sites identified in ESIA	Acquire land owner approvals before works begin. Transfer of any entitlements, and keep documentation (see Appendix 11 - Land acquisition process and voluntary land donation form) Identify other sites on other Government land	BMH & CLS sites identified in the ESIA	Prior to start of installation	PMUs/PCs and Safeguards Advisors	Safeguards Advisors
Air Quality	Green House Gas emissions from vessels	Require vessel emission certification re PM, SO2 and NOx to be submitted in contract specs to meet USEPA emission standards (http://www.epa.gov/otaq/marine.htm). A smoke density test will also be performed by the technical monitor using the Canadian Department of Transport Smoke Chart set out in the schedule of regulations (https://www.dieselnet.com/standards/ca/marine.php).	Entire cable route	Prior to start of installation	PMUs/PCs	Safeguards Advisors
Substrate	Use of foreign materials for filling cable trench, causing unknown pollution.	Contractor's specification to include; 1. All backfill to be previously excavated material. 2. Only inert/stable materials are to be used in cable laying and anchoring. 3. To be aware of unexploded WWII munitions.	Inshore Coastal areas.	Low tide in intertidal areas.	PMUs/PCs	Safeguards Advisors
UXO	Failure to complete an unexploded ordinance sweep of cable route leading to detonation and loss of life	Conduct a UXO survey of the cable alignment as it passes the barrier reef cut and all the way to the landing site, prior to any cable placement activity.	Inshore Coastal areas.	Prior to start of any cable laying activity.	IAs/ SPVs	PMUs/PCs
Hydrothermal Vents	Physical damage to vents by cable or cable laying equipment. Smothering by disturbing area	In construction contract specifications require survey team to identify a cable route that maintains a minimum clearance of 200 m from active hydrothermal vents (if known) and id route in the cable-laying spec.	Deep sea areas.	During preparation of contract specs	PMUs/PCs	Safeguards Advisors

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	LOCATION	TIMING/ DURATION	IMPLEMENTATION	SUPERVISION
Sea mounts	Physical damage to habitat and possible fishery usage.	During preparation of contract specifications, Project Coordinator to include a minimum clearance of 2 Km from the base of seamounts, for any cable alignment (for both the oceanographic survey and cable -laying operators)	Oceanic deep-sea areas.	During preparation of contract specifications	IAs	PMUs/PCs
1.2 Ecological Environment						
Coastal & deep ocean habitats	Accidental discharge of pollutants from vessel and from vessel grounding.	In bid documentation, require bidders to provide specifications of the fuel and lubricant management equipment and storage on vessels used during the survey and cable laying operations, and certify that the installations is in compliance with national regulations and-or MARPOL specifications for fuel management Maintain a contingency plan to address spills	Offshore & inshore coastal areas	Preparing bid construction contract documentation	IAs	PMUs/PCs
Sensitive nearshore Ecological Resources (i.e., coral reef, sea grass)	Disturbance of marine & terrestrial organisms and habitats	Prepare routing report based on detailed design demonstrating avoidance of significant habitat areas Define in contract specifications that the cable`s placement must be confined narrow a path as possible. In contract specifications instruct cable survey team to survey cable alignment for coral outcrops, and design alignment to avoid. Coral assemblages to be marked on design drawings.	Subtidal, Intertidal & terrestrial cable route	Prior to start of installation	IAs/SPVs	PMUs/PCs
Conservation areas	Disturbance of marine organisms and habitats in 'no take' areas	Cable alignment to avoid conservation areas. Define in contract specifications, via GPS and survey markers, a cable route that provides $\geq 75m$ distance from CA boundaries, and requires all survey and cable laying vessels to maintain this distance at all times.	Subtidal & Intertidal cable route	Prior to start of installation	IAs/SPVs	PMUs/PCs
Species potentially at risk (whales, dolphins, turtles)	- Ocean sonar survey affecting cetaceans. - Entanglement in cable by deep diving cetaceans	Contract specifications to include best practice for operating vessels in proximity to marine mammals as included in the Code of Environmental Practice (COEP) document.	Subtidal & Intertidal cable route	For bid & contract documentation	IAs	PMUs/PCs
1.3 Socio-Economic Environment						
Coastal Resource Users - subsistence & artisanal fisheries	Damage to ecosystem integrity and fishery productivity through loss or damage to local fishing grounds.	Specify in contract specs trenching/cable laying activities to be limited to a narrow corridor (0.4m wide by 0.75m deep) and trenching to be followed by immediate burial.	Subtidal & Intertidal cable routes	For bid & contract documentation	IAs	PMUs/PCs

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	LOCATION	TIMING/ DURATION	IMPLEMENTATION	SUPERVISION
Safeguards Advisors	Inexperienced technician leading to delayed or failed implementation of ESMP items	Hiring of of Safeguards Advisors to help implement and record delivery of ESMP for each country	FSM, Kiribati, Nauru	At start of project for the duration of the project	IAs	PMUs/PCs/ World Bank and ADB task teams
Community Information	Misconceptions raising people's fears regarding project footprint and potential damages to marine food supply.	At least one community consultation prior to commencement of civil works, during construction and after project completion to reduce concerns about construction impacts.	Kosrae, Kiribati, Nauru	Before civil work begins	IAs	Safeguards Advisors/ PMUs/PCs
Community Grievances	Minor concerns/issues developing community resentment due to unaddressed project related concerns	Establish GRMs, for use throughout the life of Project, prior to commencement of civil works and making this known to villages during follow up meetings before the work begins.	Local villages	Before civil works begin	IAs	Safeguards Advisors/ PMUs/PCs
Access during landside trenching & cable installation works	Failure of contractors to do trenching work with minimal damage and access restrictions to property	<p>Contract specs to include instruction re: full rehabilitation immediately after completion of trenching works. Develop notification protocol to provide notice of access restrictions, comprising the following steps:</p> <ul style="list-style-type: none"> - Notification of the roadside residents by letter providing details of the project, potential access restrictions and likely timing of activities; - Follow-up telephone contact to confirm letter receipt and offer further consultation; - On-site meetings with affected residents (if requested); and - "Door-knock" notifications of residents 48 hours prior to trenching to provide details of work program, duration of access restriction and contact details in case of grievance. <p>Develop a specific procedure, in consultation with hospital management, to ensure emergency access is maintained to local Hospital at all times.</p>	Residents with access affected by trenching & cable installation works	Before civil works begin	IAs	Safeguards Advisors/ PMUs/PCs

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	LOCATION	TIMING/ DURATION	IMPLEMENTATION	SUPERVISION
2.0 Construction Period (Impacts associated with the work)						
2.1 Physical Environment						
Air Quality	Emissions from survey and cable placement vessels	Zero tolerance and immediate repair required – specified in Contract specifications; namely stack emissions and stack smoke tests. Vessel fined and shut down within 5 days of notice	At all work sites	From the time the vessel begins work on this project	Contractor(s)	Safeguards Advisors/ PMUs/PCs
Substrate	Introduction of foreign substances reacting with environment or introduced medium for introduced organisms.	Contractor's specification to include; 1. All backfill to consist of previously excavated material. 2. Only inert/stable materials are to be used in cable laying and anchoring. 3. To be aware of unexploded WWII munitions.	Inshore Coastal areas.	For all sea floor trenching operations	Contractor(s)	Safeguards Advisors/ PMUs/PCs
Hydrothermal Vents	Physical damage to vents or cable.	As per contract specifications, lay cable along surveyed alignment which has identified any hydrothermal vents and maintains a minimum clearance of 200 m from active hydrothermal vents to protect the site(s).	Oceanic deep-sea areas.	When work is under taken.	Contractor	Safeguards Advisors/ PMUs/PCs
Sea mounts	Physical damage to habitat and possible fishery usage.	As defined in the contract specifications, lay cable along designated survey route, which maintains a minimum clearance of 2 Km from the base of seamounts	Oceanic deep-sea areas.	When work is under taken.	Contractor	Safeguards Advisors/ PMUs/PCs
2.2 Ecological Environment						
Coastal & deep ocean habitats	Accidental discharge of pollutants from vessel and from vessel grounding.	Adhere to contract specifications and national laws, containing all fuel, lubricants and transmission fluids in double walled tanks on vessels and if in drums, store below deck, as specified in contract specifications. Maintain a contingency plan to address spills and storm events.	Offshore & inshore coastal areas	When work is undertaken	Contractor	Safeguards Advisors/ PMUs/PCs
Sensitive nearshore Ecological Resources (i.e., coral reef, sea grass)	Disturbance of marine & terrestrial organisms and habitats	Contractor(s) to adhere to ≥75m avoidance rule and lay cable along surveyed route, as per cable-laying specification, thus avoiding coral reefs and outcrops. Restrict cable footprint to as narrow a path as possible when burying across a seagrass meadow, and fill trench immediately.	Subtidal, Intertidal & terrestrial cable route	When work is undertaken	Contractor In Country ICT / SPV	Safeguards Advisors/ PMUs/PCs

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	LOCATION	TIMING/ DURATION	IMPLEMENTATION	SUPERVISION
Species potentially at risk (whales, dolphins, turtles)	- Ocean sonar survey affecting cetaceans. - Entanglement in cable by deep diving cetaceans	Contractor to be provided with ECOP which contains detailed guidelines on minimally intrusive oceanographic survey method.	Oceanic deep-sea areas.	When work is undertaken	Contractor	Safeguards Advisors/ PMUs/PCs
2.3 Socio-Economic Environment						
Coastal Resource Users - subsistence & artisanal fisheries	Damage to local nearshore fishing grounds or introduce greater chances of gear entanglement	As per contract specifications, contractor to confine trenching activities narrow a corridor (0.4m width—width if small backhoe bucket) and restore site when finished. Trenching/laying activities confined to a short period. Request Fisheries authorities to advise local fishers of activities, dates, and avoidance measures. Place markers along cable alignment in shallow waters.	Offshore, Inshore Coastal areas.	When work is under taken.	Contractor	Safeguards Advisors/ PMUs/PCs
Coastal Resource Users - Game fishers	Displacement of activities during cable laying. Entanglement of fishing gear. Damage to ecosystem integrity and fishery productivity.	PC to ensure shipping notice is issued warning of cable laying, dates, and safe clearance for other activities. Request Port Authorities & Marine Resources Authority to advise local operators of cable laying activities, location (planned corridor survey) and avoidance measures. Confine laying activities to a short period preferably outside any fishing seasons defined during consultation.	Offshore areas	When work is under taken.	Contractor/IAs/SPVs	Safeguards Advisors/ PMUs/PCs
Coastal shipping - commercial shipping and ports	Damage to ships through cable entanglement. Disruption to shipping during cable laying.	Ensure shipping notice is issued, warning of cable-laying, dates, and safe clearance for other activities. Request Port Authorities to advise local shipping of laying activities and avoidance measures.	Offshore and inshore areas	When work is under taken.	Contractor/IAs/SPVs	Safeguards Advisors/ PMUs/PCs
Land Use	Detour from agreed cable alignment Community perception of cable encroachment to marine protected areas	Conduct a series of consultations with government, private sector and non-government organizations including women and youth on progress of work and cable alignment.	At locations where this occurs	When work is under taken.	Contractor /IAs	PMU/PC
Access	Temporary loss of local communities access to fishing grounds during cable laying	Provision of electronic and print notices to local communities/ fishers of construction schedule and contact person in case of inquiries.	During cable laying	When work is under taken.	Contractor	PMU/PC
Inadequate information disclosure	Failure to include villages in final alignment planning and decision making	Prior to start of work, present draft plan to villages and seek input and agreement on final alignment plan, etc.	At key locations	At start of construction	Contractor/IAs/SPVs	Safeguards Advisors/ PMUs/PCs
Environmental	Contractor fails to	Prepare a completion report and deliver to the	N/A	Complete	Contractor/IAs/SPVs	Safeguards

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	LOCATION	TIMING/ DURATION	IMPLEMENTATION	SUPERVISION
Completion Reporting	prepare summary report defining mitigation & monitoring actions completed & what needs to be continued during Operating period.	Engineer.		within the last 4 months of installation period		Advisors/ PMUs/PCs
Contractor Awareness Raising	A contractor with little understanding of EMPs or safeguard matters initiates the work and causes damage, impacts and complaints	Conduct a 1 day contractor ESMP implementation briefing reviewing the mitigative, monitoring and reporting requirements	IA/PMUs office	1 day	IAs/SPVs	PMUs/PCs
Contractors H & S	Injury or death to contractors during contracted works	Contractors to prepare H & S plan	All	Submission prior to works being undertaken	Contractor	PMUs/PCs
3.0 Operating Period						
3.1 Physical & Ecological Environment						
Mitigation measures completion Report	No report and no record of actions implemented	PC will not approve final payment to contractor until a completion report identifying all relevant items in the ESMP and the actions taken by the contractor has been submitted.	N/A	At start of operating period before final payment	Contractor	PMUs/PCs
Oceanic habitat - Hydrothermal vents	Physical impact on cable of vent water.	New vents can appear in proximity to the cable and re-routing of cable may be required to maintain safe clearance	Offshore deep water environment	As part of periodic maintenance checks	SPVs	SPVs
Perceived marine pollution	Local communities fear of potential damage to marine life and other impacts.	Grievance Redress Committee (or successor within each SPV) to address community concerns taking immediate action to address perceived concerns.	EMC	As concerns arise	SPVs	SPVs
3.2 Socio-Economic Environment						
Impact associated with improved Internet – better access to harmful sites	Failure to adopt measures and continue mitigation actions defined in the Construction Environmental Completion report.	Make population aware of 'Internet site blocking features available to every subscriber; possibly via a village advisory group.	When in use.	At all times	SPVs and appointed NGOs or women's groups	SPVs
Fishing	Fishing Gear snagging	Clearly advertise location of undersea cable and alert local fishers and dangers of gear snagging (which will actually be minor as it will be buried 3 feet below the seafloor.	Inshore Coastal areas.	After cable is in place.	SPVs	SPVs

Table 9B: Environmental and Social Impact Monitoring Table (ESMoT)

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	MONITORING ACTION DETAILS	TIMING/DURATION	OUTPUT	IMPLEMENTATION	SUPERVISION
1.0 Pre-Construction Period (Planning and design actions to prevent future impacts)							
1.1 Physical Environment							
Air Quality	Green House Gas emissions from vessels	Require vessels emission certification re PM, SO2 and NOx to be submitted in contract specs. The results will need to meet USEPA emission standards (http://www.epa.gov/otaq/marine.htm CFR-40 set of codes). A smoke density test will also be performed by the technical monitor using the Canadian Department of Transport Smoke Chart set out in the schedule of the regulations (https://www.dieselnet.com/standards/ca/marine.php).	Confirm contract specification and compliance certification	During pre-installation period	Written and signed DD inspection note-to file	IAs/SPVs	PMUs/PCs/ Safeguards Advisors
Substrate	Use of foreign materials for filling cable trench, causing unknown pollution.	Contractor's specification to include; 1. All backfill will have to be only locally sourced or seabed material. 2. Only inert/stable materials are to be used in cable laying and anchoring. 3. To be aware of unexploded WWII munitions.	Confirm contract specification and compliance certification	During pre-installation period	Written and signed DD inspection note-to file	IAs/SPVs	PMUs/PCs/ Safeguards Advisors
UXO	Failure to complete an unexploded ordinance sweep of the cable route in coastal waters could lead to loss of life	Conduct a UXO survey of the cable alignment as it passes the barrier reef cut and all the way to the landing site, prior to any cable placement activity.	Obtain record of UXO sweep completed	During pre-installation period	Written and signed DD inspection note-to file	IAs/SPVs	PMUs/PCs
Hydrothermal Vents	- Physical damage to vents by cable or cable laying equipment. - Smothering by disturbing area	In construction contract specifications (prepared by EMC joint technical project manager) require survey team to identify a cable route that maintains a minimum clearance of 200 m from active hydrothermal vents (if known) and identify this route in the cable-laying specification.	Confirm that appropriate specifications contained in bid documentation	During pre-installation period	Written and signed DD inspection note-to file	IAs/SPVs	PMUs/PCs/ EMC Joint technical project manager
Sea mounts	Physical damage to habitat and possible fishery usage.	During preparation of contract specifications, EMC Joint technical project manager to include a minimum clearance of 2 Km from the base of seamounts, for any cable alignment (for both the oceanographic survey and cable-laying operators)	Confirm adequate presentation in bid documentation	When bid documents are being prepared	DD note-to file	IAs	PMUs/PCs/ EMC Joint technical project manager

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	MONITORING ACTION DETAILS	TIMING/DURATION	OUTPUT	IMPLEMENTATION	SUPERVISION
1.2 Ecological Environment							
Coastal and deep ocean habitats	Accidental discharge of pollutants from vessel and from vessel grounding.	Bidders to provide specifications of the fuel and lubricant management equipment and storage on vessels used during the survey and cable laying operations , and certify that the installations is in compliance with national regulations and-or MARPOL specifications for fuel management Maintain a contingency plan to address spills	Confirm appropriate specification contained in bid documentation	During pre-installation period	Written and signed DD inspection note-to file	IAs/SPVs	PMUs/PCs/ EMC Joint technical project manager
Sensitive nearshore Ecological Resources (i.e., coral reef, sea grass)	Disturbance of marine & terrestrial organisms and habitats	Prepare routing report based on detailed design demonstrating avoidance of significant habitat areas Define in contract specifications that the cable`s placement must be confined narrow a path as possible. In contract specifications instruct cable survey team to survey cable alignment for coral outcrops, and design alignment to avoid. Coral assemblages to be marked on design drawings.	Confirm appropriate specification contained in bid documentation	During pre-installation period	Written and signed DD inspection note-to file	IAs/SPVs	PMUs/PCs/ EMC Joint technical project manager
Conservation areas	Disturbance of marine organisms and habitats in 'no take 'areas	Define in contract specifications, via GPS and survey markers, a cable route that provides \geq 75m distance from CA boundaries, and requires all survey and cable laying vessels to maintain this distance at all times.	Confirm contract specification in place as indicated in ESMP	During pre-installation period	Written & signed DD inspection note-to file	IAs/SPVs	PMUs/PCs/ EMC Joint technical project manager
Species potentially at risk (whales, dolphins, turtles)	- Ocean sonar survey affecting cetaceans. - Entanglement in cable by deep diving cetaceans	Contract specifications to include best practice for operating vessels in proximity to marine mammals as included in the Code of Environmental Practice (COEP) document.	Confirm inclusion in contract specifications	When specifications are being written	Record to file	IAs	PMUs/PCs/ EMC Joint technical project manager
1.3 Socio-Economic Environment							
Coastal Resource Users - subsistence and artisanal fisheries	Damage to ecosystem integrity and fishery productivity through loss or damage to local fishing grounds.	Define in contract specs trenching/cable laying activities to be limited to a narrow corridor and trenching to be followed by immediate burial.	Confirm inclusion in contract specifications	When specifications are being written	Record to file	IAs	PMUs/PCs/ EMC Joint technical project manager

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	MONITORING ACTION DETAILS	TIMING/DURATION	OUTPUT	IMPLEMENTATION	SUPERVISION
Safeguards Advisors	Inexperienced technician leading to delayed or failed implementation of ESMP items	Appointment of Safegaurds Advisor to help implement and record delivery of ESMP for each country	Confirm technician is on staff at start of project	At start of project for duration	Note to file	IAs	PMUs/PCs/ World Bank and ADB task teams
Community Information	Misconceptions raising people's fears regarding project footprint and potential damages to marine food supply.	Conduct community consultation prior to commencement of civil works, during construction and after project completion to reduce concerns about construction impacts.	As required	As required	Note to file	IAs/SPVs	Safeguards Advisors PMUs/PCs
Community Grievances	Minor concerns/issues developing community resentment due to unaddressed project related concerns.	Establishment of grievance redress mechanisms (GRM) prior to commencement of civil works and making this known to villages during follow up meetings before the work begins.	Confirm that a grievance redress mechanism requirements is in Contract specs.	At start of detailed design stage	Note to file	IAs/SPVs	Safeguards Advisors PMUs/PCs
Access during landside trenching & cable installation works	Failure of contractors to do trenching work with minimal damage and access restrictions to property	Contract specs to include instruction re: full rehabilitation immediately after completion of trenching works. Develop notification protocol to provide notice of access restrictions. Develop a specific procedure, in consultation with hospital management, to ensure emergency access is maintained to local Hospital at all times.	As required	As required	Note to file	IAs/SPVs	Safeguards Advisors PMUs/PCs
2.0 Construction Period (Impacts associated with the work)							
2.1 Physical Environment							
Air Quality	Emissions from survey and cable placement vessels	Zero tolerance and immediate repair required – as specified in Contract specifications; namely stack emissions and stack smoke tests as defined in IEE and at web sited defined in IEE. Vessel fined and shut down within 5 days of notice	Contractor to provide emission test results	Prior to start of work	Record to file	Contractor(s)	Safeguards Advisors PMUs/PCs

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	MONITORING ACTION DETAILS	TIMING/DURATION	OUTPUT	IMPLEMENTATION	SUPERVISION
Substrate	Introduction of foreign substances reacting with environment or introduced medium for introduced organisms.	Contractor's specification to include; 1. All backfill will be previously excavated material. 2. Only inert/stable materials are to be used in cable laying and anchoring. 3. To be aware of unexploded WWII munitions.	Site inspection	During installation	DD note to file	Contractor(s)	Safeguards Advisors PMUs/PCs
Hydrothermal Vents	Physical damage to vents or cable.	As per contract specifications, lay cable along surveyed alignment which has identified any hydrothermal vents and maintains a minimum clearance of 200 m from active hydrothermal vents to protect the site(s).	Hydrothermal vents detected during initial ocean survey, periodically check cable location to ensure it complies with limits.	When detailed design is complete and cable placement is to take place	Compliance Checklist signed	Contractor	Safeguards Advisors PMUs/PCs
Sea mounts	Physical damage to habitat and possible fishery usage.	As defined in the contract specifications, lay cable along designated survey route, which maintains a minimum clearance of 2 Km from the base of seamounts	If seamounts are identified during detailed design the monitor will check on cable location ensure it complies with limits defined.	When detailed design is completed and the cable placement is to take place	Compliance Checklist signed	Contractor	Safeguards Advisors PMUs/PCs
2.2 Ecological Environment							
Coastal & deep ocean habitats	Accidental discharge of pollutants from vessel and from vessel grounding.	Adhere to contract specifications and national laws, containing all fuel, lubricants and transmission fluids in double walled tanks on vessels and if in drums, store below deck, as specified in contract specifications. Maintain a contingency plan to address spills and storm events.	Inspect both survey and cable laying vessel and confirm compliance	At start of work for all vessels used	Written compliance checklist	Contractor	Safeguards Advisors PMUs/PCs
Sensitive nearshore Ecological Resources (i.e., coral reef, sea grass)	Disturbance of marine & terrestrial organisms and habitats	Contractor(s) to adhere to ≥75m avoidance rule and lay cable along surveyed route, as per cable- laying specification, thus avoiding coral reefs and outcrops. Restrict cable footprint to as narrow a path as possible (0.4m wide by 0.75m deep), when burying across a seagrass meadow, and fill trench immediately. Contractor to received map from	Inspect cable laying operations in vicinity of coral formations and confirm compliance	When work is in close proximity to sensitive areas	Compliance report with photos	Contractor / IAs/ SPVs	Safeguards Advisors PMUs/PCs

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	MONITORING ACTION DETAILS	TIMING/DURATION	OUTPUT	IMPLEMENTATION	SUPERVISION
		Government Marine Resources agency, showing sensitive areas on route from passage to landing.					
Conservation areas	Disturbance of marine organisms and habitats in 'no take 'areas	Cable alignment to avoid conservation areas. Define in contract specifications, via GPS and survey markers, a cable route that provides $\geq 75\text{m}$ distance from CA boundaries, and requires all survey and cable laying vessels to maintain this distance at all times.	Inspect cable laying operation in coastal waters to confirm minimum distance from CAs is maintained	As soon as work takes place near shore waters	Record of inspection and findings—written and photos	Contractor / IAs/ SPVs	Safeguards Advisors PMUs/PCs
Species potentially at risk (whales, dolphins, turtles)	Entanglement in cable by deep diving cetaceans	Control cable tension so that laid cable conforms to undulations of seabed as per cable laying spec	Ensure cable layer understands cetacean sensitivities	At start of survey and start of cable placement	DD note to file	Contractor	Safeguards Advisors PMUs/PCs
2.3 Socio-Economic Environment							
Coastal Resource Users - subsistence & artisanal fisheries	Damage to local nearshore fishing grounds or introduce greater chances of gear entanglement	As per the contract specifications, contractor is to confine trenching activities to as narrow a corridor as possible (0.4m width—width if small backhoe bucket) and restore site when finished and confine trenching/laying activities to as short a period as possible. Request Fisheries authorities to advise local fishers of cable laying activities, dates, and avoidance measures. Consider placing markers along cable route in shallow (<10 m) waters.	Examine trenching activity in nearshore waters and establish compliance with work area limits defined in ESMP. Interview fishers to determine if contractor advised re cable laying activity Locate with cable markers	Trenching in nearshore waters	DD note to file	Contractor / IAs/ SPVs	Safeguards Advisors PMUs/PCs
Coastal Resource Users -Game fishers	Displacement of activities during cable laying. Entanglement of fishing gear. Damage to ecosystem integrity and fishery productivity.	Project Coordinator to ensure a shipping notice is issued warning of cable laying, dates, and safe clearance for other activities Request Port Authorities & Marine Resources Authority to advise local operators of cable laying activities, location (planned corridor survey) and avoidance measures. Confine laying activities to as short a period as possible, preferably outside any fishing seasons defined during the consultation with Marine Resources authorities.	Shipping notice	When work is under taken.	Shipping notice to file	Contractor / IAs/ SPVs	Safeguards Advisors PMUs/PCs

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	MONITORING ACTION DETAILS	TIMING/ DURATION	OUTPUT	IMPLEMENTATION	SUPERVISION
Coastal shipping - commercial shipping and ports	Damage to ships through cable entanglement. Disruption to shipping during cable laying.	Ensure shipping notice is issued, warning of cable-laying, dates, and safe clearance for other activities. Request Port Authorities to advise local shipping of laying activities and avoidance measures. Contractors to provide written statement to TC that marine navigation lights and other national maritime measures are closely followed by contractors' vessels at all times.	Shipping (local and international) notice(s) issued. Appropriate markers and signage employed	When work is under taken.	Shipping notice to file	Contractor/IAs/SPVs	Safeguards Advisors PMUs/PCs
Land Use	Detour from agreed cable alignment Community perception of cable encroachment to 'no-go' marine protected areas	Consult with government, private sector and non-government organizations including women and youth on progress of work and cable alignment. These consultations have the objective of informing all interested people on the work and general alignment location and methods to used.	Obtain review and file record/notes/minutes of consultations completed	Within 5 days of landuse issue consultation taking place	Copy of record of completed meeting	Contractor/IAs/SPVs	Safeguards Advisors PMUs/PCs
Access	Temporary loss of local communities access to fishing grounds during cable laying	Provision of electronic and print notices to local communities/ fishermen of construction schedule and contact person in case of inquiries.	Inspect material and confirm timely distribution	At start of installation when issues could arise	Copy of material	Contractor/IAs/SPVs	Safeguards Advisors PMUs/PCs
Inadequate information disclosure	Failure to include villages in final alignment planning and decision making	Prior to start of work, present draft plan to villages and seek input and agreement on final alignment plan, etc.	As required	At start of installation	Note to file	Contractor/IAs/SPVs	Safeguards Advisors PMUs/PCs
Environmental Completion Reporting	Contractor fails to prepare summary report detailing mitigation & monitoring actions completed & Operating period needs	Prepare a completion report and deliver to the Engineer.	Review completion report and file compliance checklist	Following submission by contractor	Compliance checklist	Contractor/IAs/SPVs	Safeguards Advisors PMUs/PCs
Contractor Awareness Raising	Contractor with little understanding of EMPs or safeguards initiates the work and causes damage, impacts & complaints	Conduct a 1 day contractor ESMP implementation briefing reviewing mitigation, monitoring and reporting requirements	Review briefing material and attendance list	Following session	Review report	Contractor/IAs/SPVs	Safeguards Advisors PMUs/PCs

PARAMETERS	POTENTIAL IMPACT	MITIGATION MEASURES	MONITORING ACTION DETAILS	TIMING/DURATION	OUTPUT	IMPLEMENTATION	SUPERVISION
3.0 Operating Period							
3.1 Physical and Ecological Environment							
Mitigation measures completion Report	No report and no record of actions implemented	Prepare completion report	Confirm report available and provided by contractor	At end of installation, 1 month into operating period	DD note	Contractor / IAs	Safeguards Advisors PMUs/PCs
Oceanic habitat - Hydrothermal vents	Physical impact on cable of vent water.	New vents can appear in proximity to the cable and re-routing of cable may be required to maintain safe clearance	Undertake periodic check in vicinity of vent areas (if found)	After volcanic activity detected	DD note	SPVs	SPVs
Perceived marine pollution	Fear of potential damages to marine life and impact to food supplies by communities	Use the Grievance Redress Committee to address community concerns which needs to be established by the Implementing Agency, taking immediate action to address mostly perceived concerns, before they become negative rumours.	Review and record operation of the grievance redress committee and prepare Inspection report	As concerns arise	Inspection report	SPVs	SPVs
3.2 Socio-Economic Environment							
Impact associated with improved Internet – better access to harmful sites	Failure to adopt measures and continue mitigation actions defined in the Construction Period Environmental Completion report.	Make population aware of ‘Internet site blocking features available to every subscriber; possibly via a village advisory group.	Examine and record steps taken to inform public. Measure effectiveness of consultation.	Once the service becomes operational	DD note Ongoing record of incidents.	SPVs	SPVs
Fishing	Fishing Gear snagging	Clearly advertise location of undersea cable and alert local fishers and dangers of gear snagging (which will actually be minor as it will be buried 3 feet below the seafloor.	Confirm with fishers that steps necessary were taken	After cable is in place.	DD note	SPVs	SPVs

Appendix 10 Environmental Code of Practice

Environmental and Social Safeguards Document

Environmental Code Of Practice (ECOP)

FOR

PLANNING AND CONSTRUCTION OF SUBMARINE FIBRE OPTIC CABLE
PROJECTS IN THE SMALL TROPICAL ISLANDS OF MELANESIA
MICRONESIA AND POLYNESIA

**Completed as Part of the North Pacific Regional Connectivity
Investment Project**

November 2014

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Acronyms and Abbreviations

Item	Definition
CA	Conservation Area
CSC	Construction Supervision Consultant
DTCI	Department of Transport Communication and Infrastructure (FSM)
ECOP	Environmental Code of Practice
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
Executing Agency	The senior government unit responsible for a project
FAD	Fish Attractant Device
FSM	Federated States of Micronesia
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
HDD	Horizontal Directional Drilling
IEE	Initial Environmental Examination
ILO	International Labour Organization
IMO	International Marine Organization
Implementing Agency	A government or other designated agency assigned the job of managing late preconstruction and construction period of an SFOC project.
MARPOL	Int'l Convention for the Prevention of Pollution from Ships
MMO	Marine Mammal Observer
MPA	Marine Protected Area
MPIIC	Ministry of Public Industry, Infrastructure and Communication (Palau)
OP	Operating Procedure of the World Bank
PCR	Physical Cultural Resource
PMU	Project Management Unit
SFOC	Submarine Fibre Optic Cable
USEPA	United States Environmental Protection Agency

Environmental Code of Practice for Submarine Fibre Optic Cable Project Planning and Construction

1 Introduction

1. The Republic of Palau and the Federated States of Micronesia (FSM) have jointly initiated the submarine fibre optics communications cable connectivity project to establish more reliable and faster broadband communication and internet connectivity to Palau and Yap and Chuuk States of FSM by connecting these countries to the major cable hub of Guam.

2. This Environmental Code of Practice (ECOP) was prepared as part of the environmental and social safeguards documentation for the project, but is intended for use across the region on other submarine fibre optic cable (SFOC) projects. It is a guide to environmentally acceptable steps needed to plan and install SFOC systems at sea, through coastal waters and extending to landing stations. It has been designed for use throughout Melanesia, Micronesia and Polynesia. Specifics related to the Palau-FSM project are discussed only as examples.

3. A project will usually have an ESIA, and a detailed Environmental and Social Management Plan (ESMP), with the latter either specified in its entirety or inserted as a number of environmental clauses in the construction contracts. The ECOP supplements the ESIA, and in that sense is not a stand-alone guide. However, in situations where environmental assessments are not required the ECOP can be used to define environmentally acceptable construction practices.

4. ECOP guidelines are often prepared for groups of projects where the oversight and coordination between the contractor and the executing agency is difficult, such as with SFOC contractors who, operating at sea, must act based on available knowledge. In these situations the ECOP and the ESMP provide the necessary safeguard reference material. It is therefore important that the ECOP be listed in the construction contract as a companion to the ESMP, and both should be complied with.

1.1 Background of the Project

5. Currently Palau and Yap depend fully on costly and limited capacity satellite-based internet service. It has resulted in a very low internet penetration and poor service. The North Pacific Regional Connectivity Investment Project will help Palau and the Federated States of Micronesia (FSM) establish faster and reliable internet connectivity through the installation of a SFOC. The SFOC will connect Palau directly to Guam with spurs to Yap State in FSM and to Chuuk State from Pohnpei, FSM.

6. Palau and FSM will share the cost of the cable according to a formula agreed to between the countries and the donors. The World Bank has agreed to provide support to FSM, while Palau has requested ADB to support their part. The preparation of the safeguard documents followed the ADB's general guidelines for environmental and social safeguards, however ensuring that World Bank safeguard standards were incorporated at every step of the work.

1.2 The Submarine Fibre Optic Cable

7. The SFOC is on average 69 mm in diameter (Figure 1). This is in contrast with a conventional submarine communications cable which is two to three times the diameter and electrical power transmission cables which are many times larger again. The SFOC is placed on the seafloor at a rate of about 200 m (656 feet) per hour, but is highly dependent on the terrain encountered. Therefore an area of about 200m by 3-5 m or 600 to 1000 m² of seafloor is impacted for one hour while the cable is being laid. In other words a small direct temporary impact area.

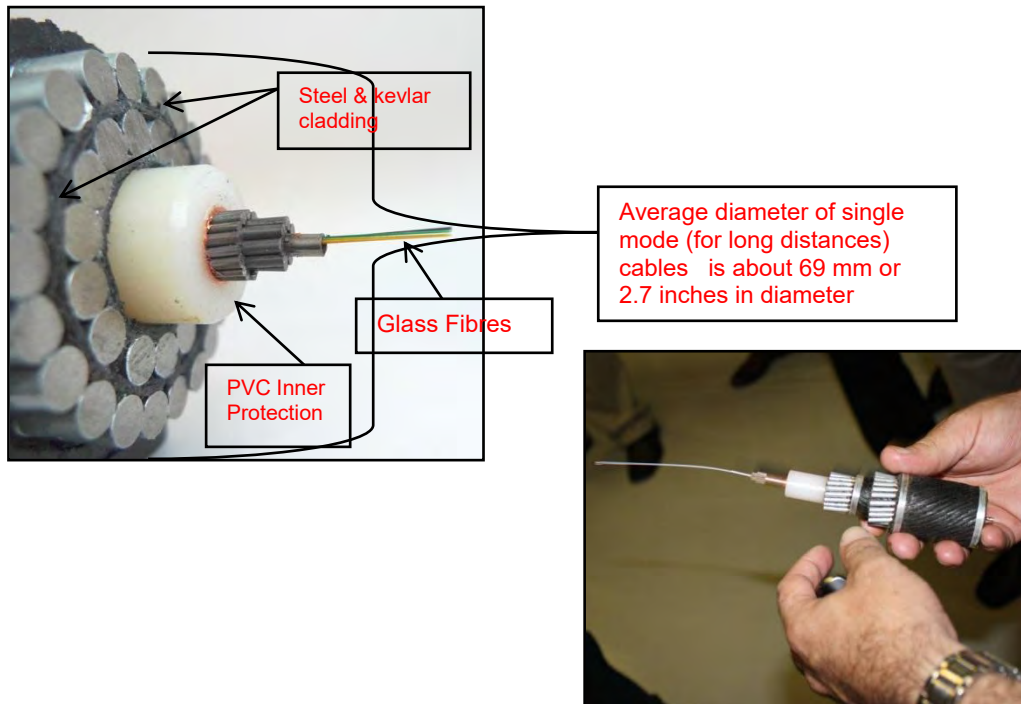


Figure 1 Fibre Optic Cable Dimensions and makeup.

1.3 Objective, Scope and Geographic Extent of the ECOP

8. The planning and construction of a safeguard-compliant SFOC system is all about the definition of spatial and temporal boundaries of the work and selection of landuse conditions to operate in. It is important to differentiate between fibre optic and conventional copper cables and submarine power cables since their environmental footprints are significantly different given the orders of magnitude difference in the cable size and total area disturbed.

9. All impacts associated with SFOC installation projects should be preventable, provided that early proactive planning and then rigorous implementation and enforcement of all construction period mitigative and monitoring actions takes place.

10. By completing and signing off on the ESIA¹ documentation, including its Environmental and Social Management Plan (ESMP), the national executing agencies will have committed to following best practices as defined in the ESMP. This commitment extends to all contractors and subcontractor involved on the project, reinforced via a set of environmental contract clauses or contract specifications which closely mirror the content of the ESMP.

¹ ESIA is a World Bank acronym, whereas ADB uses IEE and EIA; all interchangeable in this ECOP

11. **Objective-** The ECOP contain a set of environmental guidelines that should be used to help plan a fibre optic cable project, prepare its ESIA and IEE, identify the document clearance process and specify how construction-related negative impacts can be mitigated. It is a best practice guide to be applied within the boundaries of the relevant laws, regulations and standards of the states where a project will be undertaken; in line with the safeguard guidelines of the donors such as the World Bank and Asian Development Bank.

12. **Audience Scope and Geographic Extent-** This ECOP is intended for use by the stakeholders undertaking the day-to-day activities involved in SFOC installation projects, with a goal of minimizing negative impacts to the physical, ecological and socioeconomic environment. While the focus is on those who deliver the project, the ECOP may also be useful for the affected communities, providing a guide to what they can generally expect in terms of protection against environmental and social losses arising from the project. Finally, the ECOP can also be a source of environmental training material for existing and new project employees.

13. Therefore, the scope of this ECOP extends to:

- the project's executing agency, which with donor funding this usually the national Ministry of Finance;
- The project's implementing agency, which usually is the Telecommunications Division or department within a government ministry;
- any unit or other entity established to manage a project such as a Project Management Unit or a Project Coordination Office, acting in behalf of the implementing agency;
- the regulatory agencies most responsible, such as Environment, Marine Resources, Landuse Management, and possibly Forestry;
- potentially affected resource users, landowners and communities; and
- Contractors involved in the cable laying and those preparing the landing site and cable facility.

14. This ECOP addresses only effects arising from activities associated with SFOC installations. These activities include oceanographic surveys to establish an alignment, cable placement and vessel operations in the deep ocean and through coastal waters, the establishment of landing sites and construction of a landside structure to house a fibre optic cable facility. Effects associated with the installation of a landside fibre optic cable network to link into the SFOC and service connections to businesses and households are not addressed in this ECOP.

15. This ECOP is applicable to the small tropical pacific island countries located in Melanesia, Micronesia and Polynesia². These include some 19 independent nations, but

² Melanesia is a [subregion](#) of [Oceania](#) extending from the western end of the [Pacific Ocean](#) to the [Arafura Sea](#), and eastward to [Fiji](#). The region comprises the four countries of [Vanuatu](#), [Solomon Islands](#), [Fiji](#) and [Papua New Guinea](#); besides these independent countries, Melanesia also includes [New Caledonia](#), a special collectivity of [France](#), and the region of [West Papua](#), which includes two provinces of [Indonesia](#), [Papua](#) and [West Papua](#).

Polynesia. The islands scattered across a triangle covering the east-central region of the Pacific Ocean. The triangle is bound by the [Hawaiian Islands](#) in the north, [New Zealand](#) in the west, and [Easter Island](#) in the east. The rest of Polynesia comprises [Samoan islands](#) (Samoa and [Samoa](#)), the [Cook Islands](#), [French Polynesia](#) ([Tahiti](#) and The [Society Islands](#), [Marquesas Islands](#), [Austral Islands](#), and the [Tuamotu Archipelago](#)), [Niue Island](#), [Tokelau](#) and [Tuvalu](#), [Tonga](#), [Wallis and Futuna](#), and [Pitcairn Island](#).

Micronesia. The islands of [Kiribati](#), [Nauru](#), the [Marianas](#) ([Guam](#) and the [Commonwealth of the Northern Mariana Islands](#)), the Republic of the Marshall, [Palau](#), and the [Federated States of Micronesia](#) ([Yap](#), [Chuuk](#), [Pohnpei](#), and [Kosrae](#), all in the [Caroline Islands](#)). Source: Wikipedia Pacific Islander http://en.wikipedia.org/wiki/Pacific_Islander

exclude territories that are fully administered by developed country, as is the case with American Samoa, The Cook Islands and Tahiti.

1.4 Application of the ECOP

16. Generally any donor project that needs environmental and social safeguard actions will have an ESIA. The process for completing such an ESIA is specified in donor guidelines as well as recipient country national laws and/or regulations. The ECOP can be used to guide the preparation of ESIA's.

17. The ESIA's nearly always contain ESMP's in which the potential impacts identified during the assessment are collated and for each a mitigative and monitoring action defined. The ESMP's also contain implementation details of each mitigative measure, namely what, where and when a mitigative action is to be taken and who is responsible. In effect, it is the guiding document for completing a specific project in an environmentally and socially acceptable manner. The ESMP is frequently costed (see example as provided in the Palau and FSM IEE's).

18. What is less well defined in ESIA's and ESMP's is the more general framework within which an ESMP is to be implemented, as well as specific steps to be taken on the ground once the ESIA's and ESMP's are in hand. The ECOP fills this gap by providing an overarching framework as well as a working guideline to specific tasks such as consultation or site selection.

19. The ECOP is most useful when a country agency is considering a SFOC project and needs to better understand the safeguard issues and steps required and what sort of guidance to provide a contractor with. Armed with this ECOP, the country agency should get an initial understanding of the likely environmental and social risks associated with a project and be alerted to the laws and regulations triggered by a project, and the likely costs of meeting safeguard requirements.

1.5 Organization of the ECOP

20. This ECOP is divided into 16 specific modules, referred to as ECOP 1 through 16, each presenting a framework approach and implementation sequence to a topic considered essential for preventing or minimizing the effects of SFOC installations on the physical, ecological and socioeconomic environmental of tropical Pacific Island nations.

1.6 Linking the ECOP with the ESMP

21. The ESMP is an output of a specific ESIA, defining a set of mitigative actions and follow-up monitoring tasks, stating what needs to be done to mitigate the impact and what needs to be collected to confirm compliance (see the ESMP's in the Palau and FSM ESIA's). The ECOP is a guide which describes an environmentally and socially acceptable approach to complying with each ESMP requirements, for example what is meant by *Management of Construction Sites, Protection of Coastal Areas, or Livelihood Restoration and Compensation*.

22. Where the ESMP is a bit vague, the ECOP should provide the information or at least identify where to go to get necessary additional information, underscoring that the two are companion documents.

2 The ECOP

2.1 ECOP 1: Policy, Institutional Arrangements and Administrative Procedures

2.1.1 Policies

23. A government agency or private entity initiating a SFOC installation project, needs to start with a review, listing of the national laws, regulations and standards that could be triggered by any part of the work including oceanographic surveys and large marine vessel operations. The second step would be to establish which relevant international conventions a country has ratified or will ratify and which the contractor needs to abide by (<http://iea.uoregon.edu/page.php?file=home.htm&query=static>).

24. . In this way the executing agency and other project partners will have assembled the legal basis of the project's environmental and social safeguard requirements.

25. It is important to ensure that the donor guidelines triggered by the SFOC project are addressed through the preparation of appropriate documentation using approved methods and analysis defined in donor guidelines as listed later in this ECOP.

26. Environmental Safeguard Policies define what actions a country's regulatory agencies and/or the donors expect of borrowers/executing agencies when meeting safeguard requirements. At the national level, these policies are mostly the statutory regulations and standards, while for the donors such as the World Bank and Asian Development Bank these are the Operational Policies for Safeguards and the Safeguard Policy Statement (2009) respectively.

27. Country safeguard policies play a major role in that they define what a country has specified by law as being required in order to deliver an environmentally and socially responsible infrastructure project. Donors have agreed that where country policies equal or exceed donor specifications, country policies take precedence, with the exception being the non-negotiable donor operating principles, such as not funding projects that eliminate endangered species habitat or degrade irreplaceable historical sites.

28. **National Laws Regulations and Standards** – A nation's laws regulations and standards are the primary legal means of protecting the environment and the people. In the 19 or so ECOP countries there are over 150 legal documents all with some relevance to safeguards. It is impossible to list these in this ECOP; however a guiding framework for finding the legal documents most relevant to a SFOC placement project is provided.

29. For all countries with a functioning government and resource management departments, the following six agencies should have the majority of legal documents needed to define project limits and standards to be complied with as well as the required environmental and social background material. The following agencies should be contacted.

- *The Ministry or Department of Environment, which will have the Environmental Management and/or Assessment Act., as well as the national standards for air, noise, surface water quality, management of hazardous materials and waste. Standards may be shared with the Water Resources Department in the larger countries such as PNG;*
- *Marine Resources Department of Agency –will have jurisdiction over the use of the marine resource generally, such as coral reefs, coastal seafloor and special marine areas such as aggregation areas such as the manta ray cleaning stations along the coast of Yap, FSM or the grouper; aggregation/spawning site along the western boundary of Chuuk lagoon.*

- Fisheries Department or Agency-manages the fish resource, including corals, their extraction as well as the fisher who use the resource. The Fisheries Departments will know details of fishing grounds, coral habitat and seasons as they may apply to cable laying activities. The Fisheries Department will have all fisheries regulations, season limits and maps of fishing grounds;
- Department of Resources and Development: Land Resources Division and Community Action program or related (dealing with marine protection areas)- This agency has records of land ownership and community rights to the seafloor, extending to at least the outer boundary of the a coral reef area;
- The Departments of Health, Education and Finance have the data needed to prepare socioeconomic profiles of the country and region a project is planned for;
- The National Statistics Office is also a good source for information and in some countries an Annual statistics summary is produced and which is often available in soft copy (but usually for a price).

30. Once these six agencies have been contacted, the legal baseline for any SFOC project should be in place and a knowledge of potential exceedances identified, and the most appropriate preventative/mitigative measures planned. As inevitably happens, these meetings will trigger other needs or recommendations for consultation, thus hopefully filling all gaps in the project's legal underpinnings.

31. Countries often do not have a full set of their own standards and regulations. In such circumstances surrogate standards from larger jurisdictions or international standards such as from the World Health Organization, or the European Union are applied; but with the prior agreement of the national regulatory agency(ies).

32. **The Asian Development Bank's (ADB) Safeguard Policy Statement (SPS, 2009)** is a single integrated guideline, defining what ADB expects from borrowers and grant recipients in terms of compliance with both environmental and social safeguards. ADB also has specific guidelines for Involuntary Resettlement, Gender Impact Management, Indigenous People Impact Management, and Socioeconomic Impacts Assessment. The guidelines are available free of charge on the following ADB website <http://www.adb.org/site/safeguards/publications>. Most projects provided with ADB funding need to comply with SPS 2009 as well as all relevant social sector requirement defined in the social sector guidelines³.

33. For SFOC projects the social sector issues of:

- land acquisition, loss of productive marine lands, due to ownership based on customary law;
- impact on indigenous people
- and failure of a project to take into account gender issues and gender equality regarding employment;

34. **World Bank Environmental Social Safeguard Policies** are set out in a number of operational procedures (OP). These have been in place for decades and have recently been updated. Of these, six are relevant to any SFOC project and short summaries of each are adapted from the WB website and are presented in this ECOP. They are:

35. Environmental Assessment (OP4.01) – OP 4.01 lays out the content and organization of the environmental assessment process and required documentation for

³<http://www.adb.org/sites/default/files/ir-good-practices-sourcebook-draft.pdf>

World Bank compliant assessments. It requires inter alia, (i) detailed qualitative and quantitative analysis to determine project impacts,(ii) definition of practical measures to prevent, minimize, mitigate or compensate for these adverse impacts, (iii) public consultation and disclosure as part of the EA process and (iv) s an EMP to address set of mitigation, monitoring and institutional improvement measures to be taken during design, implementation/construction and operation and maintenance phases of a project. <http://go.worldbank.org/K7F3DCUDD0>

36. Natural Habitats (OP4.04) – This policy requires the conservation of natural habitats and specifically prohibits the support of projects that involve significant conversion or degradation of critical natural habitats such as coral reef communities or fish aggregating sites, as defined by the policy. The policy further requires the EA to identify impacts on biodiversity and species and to determine endemism, endangered species and to determine project impacts on these species and to propose acceptable mitigation and monitoring measures. <http://go.worldbank.org/GIFQKJA130>

37. Physical Cultural Resources (PRC) (OP4.11) – This policy seeks to avoid the disturbance and or destruction of PCRs as defined by the policy and the projects' activities. PCR includes places of worship, buried artifacts, cemeteries and archeological assets, etc. In the case of the countries covered by this ECOP disturbance of sunken vessels or culturally important marine sites would be covered by this policy. To that end the policy requires that the executing agency undertake an i) exhaustive desk review and/or site investigation to pre-identify and locate PCR's in the project influence area, (ii) propose management measures and (ii) to include chance find clauses in civil works contracts to be in force during construction and maintenance stages of a project. <http://go.worldbank.org/UBUBZD7NAO>

38. Forests (OP4.36) – This policy applies to projects that (a) have or may have impacts on the health and quality of forests; (b) affect the rights and welfare³ of people and their level of dependence upon or interaction with forests; and (c) bring about changes in the management, protection, or utilization of natural forests or plantations, whether they are publicly, privately, or communally owned. Some of the countries where a fibre optic cable could be landed have endangered or critically important forest habit such as mangroves, which provide not only protection of catastrophic sea events such as tsunamis, but also are source of fuel and provide nursery habitat for many of the fish comprising the coastal fishery. The Bank assists borrowers with forest restoration activities that maintain or enhance biodiversity and ecosystem functionality. <http://go.worldbank.org/FGPLNFRFR0>

39. Involuntary Resettlement (OP4.12) – this policy defines how economic and social impacts from project such as (a) involuntary taking of land resulting in (i) relocation or loss of shelter, (ii) loss of assets or access to assets or (iii) loss of income sources or livelihoods and (b) involuntary restriction of access to legally designated parks and protected areas resulting in adverse impacts on the livelihoods of the displaced persons, degrades the living conditions and livelihood of people in the project area. The policy provides expectations of the executing agency to site projects such that they avoid impacts altogether or to minimize them to the extent possible. Where these cannot be avoided, the policy requires the preparation of either a (i) resettlement policy Framework and/or (ii) Resettlement Action Plan, based on meaningful consultations with potentially affected people. The policy prohibits Community donations of lands for location-specific infrastructure. <http://go.worldbank.org/ZDIJXP7TQ0> . Although the two projects for which IEEs were prepared did not trigger any of the elements if this OP, this may not be the case for other locations and the EAs close compliance with this OP will be necessary.

40. Indigenous Peoples (OP.4.10) – PO 4.10 requires the project executing agency to engage in a process of free, prior and informed consultations with iindigenous peoples, as described by the policy in situations where IP's are present in, or have collective

attachment to the project area. While this OP was not triggered by the two subprojects completed as part of this assignment, it may be possible in other areas, e.g. Papua New Guinea or the Solomon Islands that a more diverse indigenous people population. In these cases an Indigenous Peoples Plan (IPP) and/or Indigenous Peoples Planning Framework (IPPF) would be required. <http://go.worldbank.org/IBZABS9UU0>

International Organizations and Conventions- **Most of the 19 ECOP countries are members of the international organization dealing with marine resources as related to SFOC installation projects (**

41. Table 1).

Table 1. International Organizations Where ECOP Countries are Members and Where the Agencies have Relevance to Optic Fibre Cable Projects

International Organisation Membership
➤ United Nations (UN)
➤ United Nations Development Program (UNDP)
➤ Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
➤ Food and Agriculture Organization of the United Nations (FAO)
➤ <i>International Seabed Authority (ISA)</i>
➤ International Watershed Project (IWP)
➤ International Whaling Commission (IWC)
➤ <i>International Tribunal for Law of the Sea (ITLOS)</i>
➤ International Maritime Organization (IMO)*
➤ Bureau (Secretariat) of the Convention on Wetlands (RAMSAR)
➤ Secretariat of the United Nations Convention on Biological Diversity (UNCBD)
➤ United Nations Educational, Scientific and Cultural Organization (UNESCO)
➤ Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC)
Regional Organisations Membership
➤ Western and Central Pacific Fisheries Commission (WCPFC)
➤ <i>Secretariat of the Pacific Community (SPC)</i>
➤ Forum Fisheries Agency (FFA)
➤ Secretariat of the Pacific Islands Forum (PIF)
➤ <i>Secretariat of the Pacific Regional Environment Programme (SPREP)</i>
➤ Applied Geoscience and Technology Division (SOPAC) of the <i>Secretariat of the Pacific (SPC)</i>

42. This list is provided as a reference to these organizations which all have websites that can be easily accessed and where useful information can be downloaded. Of these, the six in italics are the most important, as their conventions are directly related to SFOC installation activities and impacts.

These international organizations have developed agreements and conventions that many of the 19 ECOP countries have ratified or are in the process of doing so (

43. Table 2).

Table 2. Conventions and Treaties Affecting Submarine Fibre Optic Cable Installation projects

Convention and/or Treaty

Convention and/or Treaty

1. *The United Nations convention on the Law of the Sea (“UNCLOS”)-governing resource use outside territorial waters.*
 2. *Geneva Convention on the Continental Shelf (GCCS)*
 3. The “Convention on Biological Diversity,” the objectives of which are to conserve biological diversity, to promote the sustainable use of biological components, and to provide for the fair and equitable sharing of the benefits of genetic resources and technology, including biotechnology.
 4. Kyoto Protocol to the United Nations Framework Convention on Climate Change
 5. *Agreement on Regional Cooperation in Matters Affecting International Commercial Shipping in the Pacific Island Countries.*
 6. Articles of Agreement establishing the Arrangement for the Management of the Western Pacific Purse Seine Fishery, otherwise known as “The Palau Arrangement”.
 7. Convention for the prohibition of fishing with the long driftnets in the South Pacific, otherwise more popularly known as “The Wellington Convention”
 8. Cartagena Protocol on Biosafety to the Convention on Biological Diversity
 9. *Convention concerning the Protection of the World Cultural and Natural Heritage (11 Sept 2002)*
 10. *Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and their Disposal*
 11. *International Maritime Organization (IMO)*
 12. International Convention for the Prevention of Marine Pollution from Ships, 1973 (MARPOL) adopted in London on 2 Nov 1973 and its Protocol of 1978, adopted in London on 2 Nov 1973 and its Protocols of 1978, adopted in London on 17 Feb 1978(MARPL 73/78), including following subsidiaries**
 13. International Labour Organization Conventions: 1998 Declaration on Fundamental Principles and Rights at Work**
-

44. The eight conventions most applicable to cable placement project are No. 1, 2, 5, and 9-13. Number 13 focuses on people, defining the important principals of fair employment.

45. When placing a SFOC, the contractor and the executing agency need to understand the legal boundaries of the ocean as defined by distance and depth from shore (Figure 2), in key documents prepared by UNCLOS and GCHS. For cable placement project, where much of the work is done in the high seas and exclusive economic zones, contractors need to be aware of who they need contact and at which conventions they need to adhere to.

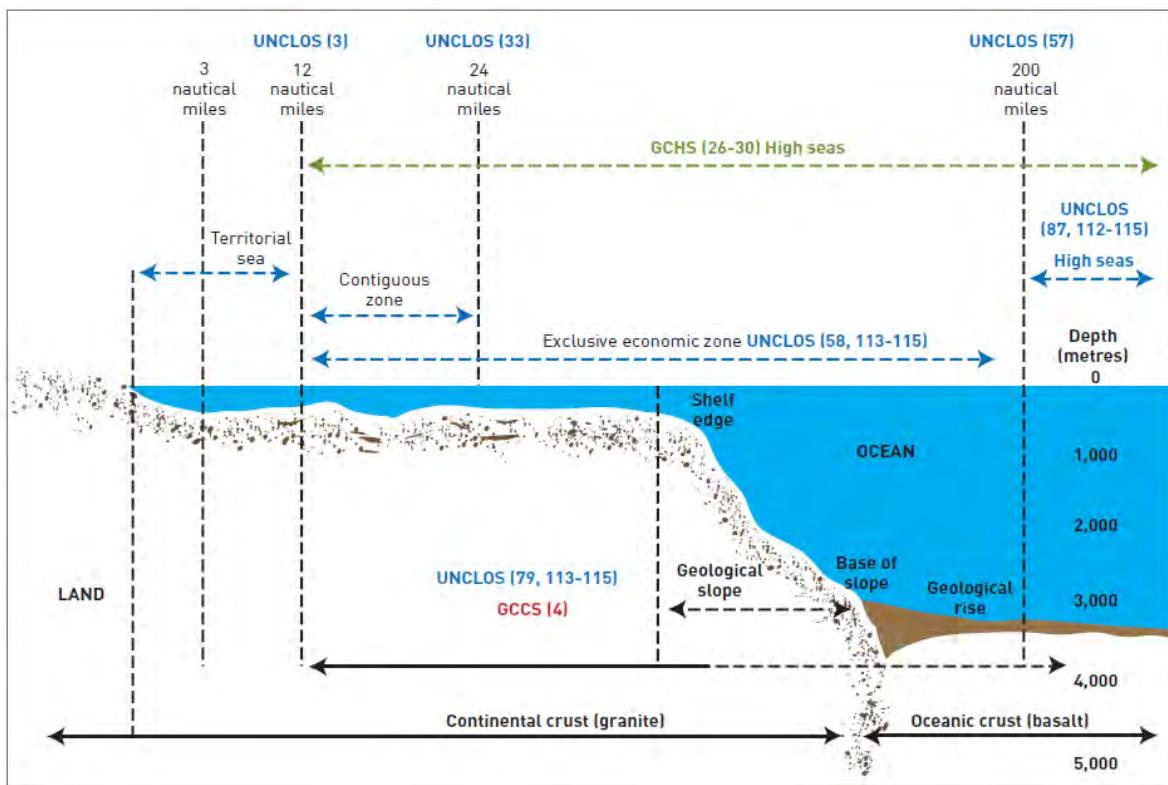


Figure 2. Legal Boundaries of the Ocean as defined by the United Nations Convention on the Law Of the Sea (UNCLOS) and the Geneva Convention on the High Seas (GCHS)

46. The International Maritime Organization has in force a convention known as the International Convention for the Safety of Life at Sea (SOLAS), applying to all oceanographic survey and cable laying vessels. This would apply to safe operations and crew safety.

47. In relation to oil spills and pollution from leaks, the IMO's International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) <http://www.ifrc.org/docs/idrl/1245EN.pdf> is applicable to cable laying vessels and their owners. Others include the International Oil Pollution Compensation Funds (<http://www.iopcfunds.org/publications/>). IMO also functions as a depository of yet to be ratified treaties, such as the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (the HNS Convention)⁴. Knowledge that these conventions exist and that they are in force in the ECOP can also be useful to communities and governments seeking compensation after oil spills and discharge of noxious substances from vessels.

48. The International Cable Protection Committee (www.iscpc.com) has been established for marine cable management, with a focus on maintaining a database on undersea cable location and status. It also has useful publications that address the issues of submarine cables and the environmental impact *Submarine Cables and the Oceans*, 2009 as well as *Fishing and Submarine Cables*, 2009, available on their website.

49. Nearly all of this planning work should be done during the preconstruction period, in preparation for or in parallel with the completion of the environmental assessment(s).

⁴ <http://www.imo.org/OurWork/Legal/HNS/Documents/HNS%20Consolidated%20text.pdf>

50. During the construction period the national or regional standards are used to set the minimum compliance level for all impacts potentially degrading the environment and/or negatively affecting the communities in the project area.

2.1.2 Institutional Arrangements and Administrative Responsibilities

51. Institutional arrangements for a SFOC project involve the country's executing and implementing agencies, often a project management unit (PMU) or coordination office, and sometimes a national or local level advisory committee dealing with contentious issues such as customary rights, and community ownership (Box 1). In situations where for one project cables are placed in different administrative areas of the same country, such as the two states in FSM, a more complicated structure consisting of state-level PMUs and advisory committees working with an international coordinator and the international advisory committee usually works best⁵.

Box 1: Executing (EA), Implementing (IA) and Regulatory (RA) Agencies for Palau and FSM.

Palau

- EA-Ministry of Public Infrastructure, Industries and Commerce (MPIIC)
- IA-MICROPAL , Project Coordinator and PMU
- RA-Environmental Protection Dept.
- RA-Marine Conservation Department

FSM

- EA-Dept. of Transport, Communication and Infrastructure (DTCI)
- IA-MICROPAL , Project Coordinator and State PMUs (Yap & Chuuk)
- RA-Environmental Protection Agency
- RA-Marine Resources Division
- RA-Land Resources

52. Preconstruction Period- During the preconstruction stage the executing agency is in charge, but often hands over the day-to day management and implementation of the project to an implementing agency or special unit such as the PMU when the construction contract specifications are to be prepared. That PMU is then responsible for implementing all preconstruction/planning activities; including overseeing the preparation of the environmental assessment documents, the preparation of contract bid documents, participating in the contractor selection process and ensuring that mitigative and monitoring measures are included in the contract specifications.

53. The PMU is also responsible for any necessary training of contractors, ensuring that the mitigation and monitoring obligations are understood by all and that an implementation timetable is forthcoming from the contractor.

54. The executing agency is usually responsible for ensuring that the safeguard documents have been approved by the national Environmental Protection Agency/Division or Ministry of Environment, since it is this approval that allows donors to fully agree to the work and release funds. Often the PMU is deeply involved, working with an international consultant, retained to assist with the preparation of safeguard documentation.

55. All safeguard documents must be reviewed and approved by the donors such as ADB or World Bank, before any funds can be released.

56. Construction Period- During this period the institutional arrangements remain the more or less the same, with the PMU continuing to manage to project's implementation, often with a Contract Supervision Consultant (CSC) hired to provide oversight and necessary advice to the implementing agency and the contractor.

⁵ If the project involves several countries as was the case with Palau and FSM an international steering committee is established, including a fibre optics specialist / project coordinator. The success of such an institutional set up will be monitored as the joint cable laying exercises for Palau and FSM proceed.

57. The environmental and social mitigative actions defined in the safeguard documents must be implemented by the contractor, while the compliance monitoring actions are usually completed by the PMU or the CSC. Impact monitoring, i.e. monitoring changes in air, noise and water quality conditions, as a result of construction activities, remains a duty of the contractor, who should have included these costs in the contract bid.

58. During the construction period the PMU or the CSC is required to submit semi-annual monitoring reports to the donors for the duration of the construction period. In the case of most SFOC projects, with short construction periods, there will usually be no more than two such reports.

59. Regulatory agencies are rarely involved in this stage, although it is a good idea to brief the lead regulator (usually the environment agency) on the activities that will take place and the measures designed to mitigate them. This briefing should be completed by the contractor and the PMU prior to any field mobilization. The earlier the regulatory agency is involved and complete information provided, the less the chances for a project-delaying compliance issue arising.

60. Operating Period- The end of the construction period usually mean that the management of the project is handed back to the executing agency which, in the case of SFOC, will likely be a national telecommunications agency or as with Palau a national cable company. That company will in turn ask for bids from service providers who want to deliver the high speed communications services to the country or state(s). Some countries may prefer to simply allow the national telecommunications company to provide this service.

61. These administrative details are worked out internally by the national and or regional/state governments and have little effect on safeguard management since this duty is taken over by the executing agency as soon as the construction period is complete, and it has the legal obligations to fully implement all measures defined in the safeguard documentation for the project.

2.1.3 Capacity Building and Training

62. All ECOP countries and their contractors need both capacity building and training in understanding what environmental and social safeguards are and how to implement them, and how to undertake compliance monitoring.

63. The ECOP countries and their executing agencies are small, with limited resources, and therefore capacity building and training must be highly targeted. SFOC installation takes place in the marine environment, mostly at sea and in nearshore waters, carried out by specialized contractors, so that training needs to focus on them⁶ and the oversight agency such as the Palau MPIIC or the FSM DTCL, or the units they designate, such as the PMU and CSC⁷.

64. This training should take place late during the preconstruction period but only once the approved environmental safeguard documentation with its ESMP is available, and the contractor has been selected. It should focus on how and when an ESMP must be implemented, what is needed to be sure the mitigation and monitoring actions are in compliance with country and donor regulations and boundaries and what the mandatory reporting requirements and expectations on the level of detail and content are.

⁶ Most SFOC installations involve minimal work on land, and if this is not the case environmental assessment are required, covering all aspects of the work, as for example if Horizontal Directional Drilling , cable attachment to the reef, or mangrove forest clearing is involved.

⁷ ESMPs contain mitigative and monitoring actions as well as recommended training activities for the operating period (as is the case with the Palau and FSM projects). These however are not discussed as they are outside the Terms of Reference for this ECOP

65. Such training should be delivered as a workshop by a consultant (or in rare cases by the national environment agency where the project is being undertaken), over a 1.5 day period.

66. Attendance would include the executing agency, implementing agency, the contractor, the national agency responsible for environmental and social impact assessment, and one or two other regulatory agencies, such as Land Resources or Marine Resources. Recommended maximum attendance should be 30 people.

67. With an international consultant preparing and delivering the material, such a training session would cost between US\$10,000-\$14,000. Often the Construction Supervision Consultant hired to oversee the project implementation will have some environmental expertise and could, having attended the first session, deliver a second session if needed, and at no extra cost.

2.2 ECOP 2: Consultation, Information, Disclosure and Grievance Redress Mechanism

2.2.1 Consultation, Information, Disclosure

68. With few exceptions, meaningful consultation and the exchange of relevant information between the project proponent and the agencies, communities and individual families affected, is the difference between a well-received project and one where suspicion, misinformation and costly delays are common.

69. Successful consultation is all about planning, and providing ample time for agencies and people to participate and providing information allowing the participants to pose relevant questions and provide valuable inputs.

70. As soon as a SFOC project has been broadly formulated and an oversight agency or responsible unit has been appointed, discussion about the process of informing the regulatory agencies, community organizations, NGOs and local residents should begin.

71. In the ECOP countries, traditional leaders, such as chiefs, chiefs councils and women leaders have status equal to governors and wield enormous power and influence, thus must be included as early as possible on all discussions.

72. There are many types of consultations including one-on-one meetings, informal round table discussions, focus groups and formal presentations followed by question and answer periods. There is also a large group surveys that usually involve a mail-in survey, telephone survey or an email based-questionnaire. For projects where people and their assets can be directly impacted, personal consultations involving the proponent and affected agencies, communities or people directly is far better than a paper/electronic survey.

73. For straight forward SFOC projects, such as the one for Palau and FSM, one formal consultation with rounds of meetings with officials and communities will usually be sufficient. For more complex project, e.g. proposing to damage living coral using horizontal directional drilling for placement of the SFOC through the reef, or requiring long distances to reach landside cable operations facilities, two consultations should be planned. The first one should introduce the projects, present a project map, define all boundaries and an implementation timetable, and the second present findings and the ESMP, alignment details and landing site details. The second consultation must also take place during the pre-construction period, prior to contractor mobilization.

Preconstruction Period

74. Once the project has been formulated and ideas about landing sites and nearshore cable alignment are broadly known an indicative list of who should be a part of the consultation process needs to be prepared. This would include:

- Executing and implementing agency officials
- Regulatory agency officers (Marine Resources, Environment and Landuse Planning)
- Finance Department
- Attorney General's Office
- Council of Chiefs
- National and or State level Women's Associations/Organization(s)
- NGOs; both environmental and social sector
- Business/tourism operators
- Professionals like doctors, teachers and health care workers
- People from around landing sites and potential coastal landowners.

75. It is advisable to conduct a set of information meetings with most of the agencies/groups listed before organizing formal consultations, in order to understand official reactions support and concerns; which can be built into the consultation sessions.

76. At this point it is important to decide on how the two major safeguard themes, i.e., environmental and social sectors, are to be addressed. For small-scale projects such as undertaken for Palau and FSM, joint consultations in a number of locations is the best model. Where there are known contentious landuse and ownership issue that frequently overshadow environmental safeguard issues, separate social sector consultations are advised.

77. With the indicative list of participants in hand, the executing agency needs to:

- prepare a project information brochure/sheet which should:
 1. describe the proposed project , pictures of the cable, and project boundaries, using specific maps and charts, showing approximate alignment and landing site options;
 2. define likely impacts of the work on people's daily lives;
 3. describe the environmental and social safeguard work, including:
 - a. purpose and content
 - b. boundaries of the assessment i.e., what is included and what is excluded;
 - c. the deliverables;
 4. present a work timetable, showing safeguards in relation to the planning and construction, and details of the first planned consultation;
 5. invite participants to provide input, on anything related to the work, suggestions re alignments, missing elements, unnecessary items, etc., and

6. provide key contact name(s) with several options including email, telephone, written and in person visits, as well as a location/address

- This brochure is usually a two sided—3-fold leaflet or a 4-page booklet stapled in the middle, including at least one map showing the landing site options.
- This brochure and usually a map should then be distributed to all on the list, using a convenient method, at least 2 weeks before a consultation meeting is held.

78. The best format for SFOC project consultations is one using a slide presentation, with abundant pictures and graphic, lasting about 1 hour followed by a question and answer session, including refreshments. The duration of a consultation should be about ½ day. If the environmental and social sectors are separate sessions each can be 3 hours maximum). Usually 1 week before the consultation an announcement of the meeting date and venue is made using the tri-media (TV, newspaper and radio).

79. The consultation(s) should :

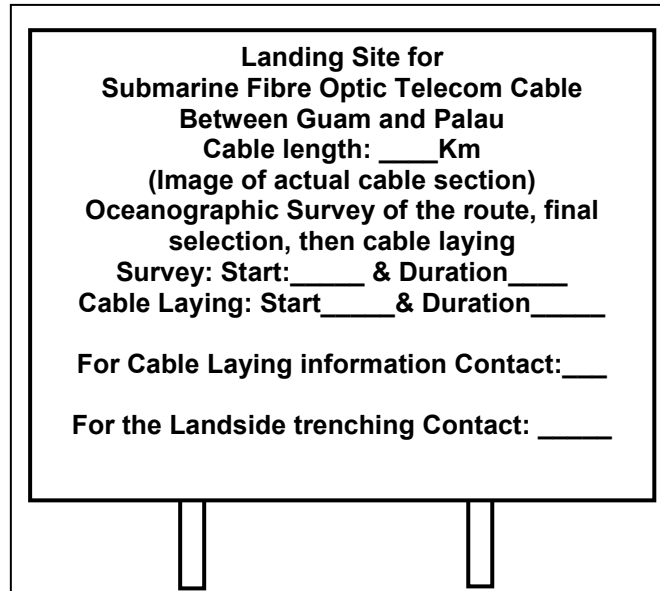
- describe the proposed project and its boundaries, using specific maps and charts, showing approximate alignment and landing site options and define;
 1. likely impacts of the work on people's daily lives;
 2. the environmental and social safeguard work, including:
 - a. purpose and content
 - b. boundaries of the assessment i.e., what is included and what is excluded;
 3. the deliverables.
- describe what will be done with the safeguard documentation, i.e. its use, where participants can see a draft, etc.
- present a work timetable, showing safeguards tasks in relation to the planning and construction
- invite participants to provide input, on anything related to the work, suggestions re alignments, missing elements, unnecessary items, etc.
- provide key contact name(s) with several contact options including email, telephone, written and in person visits, as well as a location/address.
- report that a grievance redress (complaint) committee is being formed to address project-related complaints

80. At the session minutes are taken and an attendance list prepared. Questions raised at the session need to be answered on the spot or specific date for when clarification is expected, provided at the session.

Construction Period

81. The construction period requires early announcement of the project mobilization and an office known to the public, which can be easily accessed re project progress and complaints. There will likely be two contractors, the cable survey and cable laying contractor, the landside contractor burying the cable from the landing to the cable building and constructing that facility.

82. The executing agency should require the contractors to name an information and complaints officer who will provide information on the progress of the construction and who will handle complaints. The first task of this person should be the placement of large signs and landing sites, and containing key information. A template of a sign with necessary information is provided.



83. The name of the contact person needs to be distributed to the implementing agency as well as the regulatory agencies, and usually the ten stakeholders shown in para. 74.

84. Prior to initiating the cable laying operation the contractor, in cooperation with the implementing agency needs to inform the regulators about the project, including the landside and marine-side activities..

85. The contractor should provide a nautical chart or set of charts, in both soft and hard copy to the national maritime shipping authority, the regional authorities in Fiji and Guam, as well as the port authorities where the cable comes to shore, informing them of the exact location of the cable. This information should also be sent to the International Cable Protection Committee <https://www.iscpc.org> for registration in the world cable database.

2.2.2 Grievance Redress Mechanism

86. The establishment of a Grievance Redress Mechanism (GRM) is a requirement of the donors and serves as a process for allowing complaints to be heard by those most directly affected and addressed quickly by those most involved, namely the contractor and implementing agency. It is a form of consultation and feedback.

87. The GRM is prepared during the ESIA process, is scaled to the risks and adverse impacts of the project, and needs to be able to address the concerns and complaints of potentially affected people. The GRM should be an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected population. Accessing the GRM should be free of charge and not expose the complainant to retribution. The mechanism should not impede access to national or regional due process or administrative procedures.

88. The GRM is delivered via a Grievance Redress Committee (GRC), which (i) records, categorizes and prioritizes the grievances; (ii) settles the grievances in consultation with complainant(s) and other stakeholders; (iii) informs the aggrieved parties about the solutions; and (iv) forwards the unresolved cases to higher authorities.

The seven step process that will usually be adequate for most SFOC projects is shown in

89. Table 3.

Table 3. Grievance Redress Process

Step	Process	Duration
1	Affected Person (AP) or elected or traditional chief from village takes grievance to Project Coordinator/PMU or Contractor	Any time
2	Project Management Unit or Implementation agency head reviews issue, and in consultation with village/island/state or traditional chief, relevant agencies and contractor (if appropriate), then records a solution to the problem.	2 weeks
3	PMU reports back to village/traditional chief/AP and gets clearance from complainant.	1 week
<i>If unresolved</i>		
4	AP/village or traditional chief take grievance to State/National Project Committee for resolution	Decision within 2 weeks
5	State/National Project Grievance Committee refers matter to relevant national agency (<i>Ministry of Justice and Environment Protection Authority</i>)	2 weeks
6	National agency refers to an internal committee	4 weeks
7	National agency through reports back to State/AP/village or traditional chief	1 week
If unresolved or if at any stage and AP is not satisfied with progress		
AP/village or traditional chief can take the matter to appropriate state or national court.		As per judicial system

Preconstruction Period

90. With a completed ESIA in hand, which will contain a section on grievance redress, the executing agency needs to designate someone to be in charge of the GRM. This is usually defined in the ESIA, and likely would be the head of the project implementation or management, unit or a project coordinator. The appointed head will contact the committee members and seek their participation via a request from the most senior member of the executing agency. In most situations a five person committee meets (can be by phone) if complaints cannot be immediately resolved by the project coordinator. That committee often consists of a representative of the national or state government, landuse planning agency, environment/marine resources departments, community council of chiefs from the area affected, and representative of the women's organization.

91. Before commencement of any civil works, ideally at the first scheduled consultation session, the GRC or the PMU will inform the people in the project area about this GRM.

92. Complaints concerning the proposed cable alignment are most often made when the work reaches the coastal waters, since it is at this point that encroachment on customary ownership or community managed marine resource areas such as the Marine Protected Areas (MPAs) of Yap and the Conservation Areas (CAs) of Palau, occurs.

These are often complex issues and need the involvement of several departments as well as community groups, which the GRC needs to consult.

Construction Period

93. Complaints during the construction period nearly always relate to actions taken by the contractor that infringe on property, access or fixed assets belonging to someone. The GRC needs to remain functioning during this period and address any complex issues that the PMU or Project Coordinator cannot handle.

94. The first stop with any complaint should be a consultation with the contractor and the PMU and/or the Project Coordinator; who usually can resolve the issue.

95. The contractor must log the complaints and then report this in the semi-annual monitoring report filed with the ADB/World Bank.

2.3 ECOP 3: Screening Criteria for Landing Sites and Cable Alignment

96. The objective of screening is to eliminate as many of the contentious issues associated with selection of landing sites, proximity to special areas and blockage to specific uses such as fishing, before impacts occur. Early screening for landing sites and cable alignment corridors can mean the difference between slow and difficult progress, versus a rapid, complications-free project.

Preconstruction Period

97. Most of the screening takes place during the preconstruction period and should involve finding the best way to avoid environmental damage and minimize all land requirements and loss of fixed assets.

98. To assist with this, a project screening checklist (Table 4) has been prepared that once filled in will highlight significant environmental and social safeguards issues that should be addressed before the project can go forward. This would include examination of the impacts of optional alignments or landing sites. The checklist consists of 32 environmental and social factors categorized into three components, and within each component a number of factors that are most sensitive to poor execution of the work and if significantly impacted could seriously jeopardise a project. The rating of each factor requires the assembly of facts and expert opinion and then the assignment of a value between 1 and 5, with five being an unacceptable effect, requiring a mandatory revision of the action(s) that triggered the problem.

99. By providing an initial tally of the amount of private land needed, fixed assets removed by the project, and the number of directly affected people, the screening checklist also points to the types of social documentation needed.

100. Since so much of the work is done aboard large ocean going vessels which are well known for their serious air emissions and poor waste management, three of the factors focus exclusively on the contractors' vessel operation, contractor hiring practices and compliance with international maritime standards. Vessel owners should be required to provide certificates of compliance with emission standards according the internationally accepted levels and certify that fuels and lubricant storage and handling is done according to IMO standards and that sewage and solid waste on board is disposed of according the MARPOL protocol. The ESMPs for the Palau and FSM environmental assessment defines these requirements in considerable detail, as does ECOP 7.

101. The factors dealing with employment standards are quite relevant since employees aboard ship are in a sense captive and as such the contractor needs to

ensure the executing agency and donors that ILO labour standards are being followed (See ECOP No. 16 for further details).

102. Finally, a further five factors have been added but with an impact severity value predetermined, based on past experience with the construction methods. The ratings of these five factors demonstrate that the more destructive the cable laying method is the more care and consideration of alternatives is needed.

Construction Period

103. Screening is not undertaken during the construction period since effects arising from construction activities are flagged by the screening checklist completed during the preconstruction period.

Table 4. The Environmental and Social Screening Checklist for Submarine Fibre Optic Cable Projects

ENVIRONMENTAL COMPONENTS	Item	Mandatory Distance of Cable and/or Installation from Sensitive Site	Present (Y) Absent (N) Not applicable (NA)	Distance of Item/Feature from Alignment or Other Interference	Likelihood of negative Impact (1= best, 5= worst)
Alignment Deep Ocean ≥50m					
	Seamounts	2000 m			
	Hydrothermal vents	1000 m			
	Deep sea coral thickets	1000 m			
	Steep undersea mountains and canyons	Placement on seafloor with contour—no exposed sections			
	Cetaceans	Avoid sonar surveys when cetaceans detected			
Alignment Coastal Waters <50m					
	Coral communities	75 m			
	Fish aggregation areas	75 m			
	Seagrass meadows	75 m			
	MPAs, CAs	75 m			
	FADs	75 m			
	Tourist dive sites	200 m			
	Cetaceans	Avoid snagging inshore cetacean species where present			
Shoreline					
	Mangrove forests	Avoid crossing or cutting any amount of			

		mangrove			
	Endangered forest patches and features	Do not cross			
	Beaches used by marine turtles for nesting	Avoid all construction activity during nesting seasons			
	Fringing reefs and tide pools	Do not cross			
	Tidal marshes	Do not cross			
II. LANDUSE AND SOCIAL COMPONENTS		Yes/No	Percent of Total	Area (m²) or Number	Severity of Issue
Landing Site			%, NA		
	Privately owned land				
	Public land				
	Property and/or assets taken				
	Involuntary Resettlement triggered				
	Protected or significant ecology on site				
Cable Landside Trench route	Distance minimized				
	Privately owned land				
	Public land				
	Property and/or assets taken				
	Involuntary Resettlement triggered				
	Protected or significant ecology along the route				
Cable Operations Building Site					
	Privately owned				
	Publicly owned				
	Property and/or assets taken				
	Involuntary Resettlement triggered				
	Endangered ecology				

	present				
III. CONTRACTOR VESSEL OPERATIONS		Certified as compliant	%	Issues Remaining	Compliance: 1=best, 5=worst
	Vessel air emissions in compliance with standard as defined in ECOP No. 8				
	Vessel waste management in compliance with MARPOL				
	Fuel handling in compliance with MARPOL				
	Hiring practices as per IOL				
IV. CONSTRUCTION METHOD: COASTAL WATERS					Severity of impacts
Use shipping existing channel					2
Use new cable route					3
Use hydro jet trenching					4
Submarine trenching					2
Horizontal direct drilling					4
Excavation and explosives					5
<p>I. Environmental Screening Scale to Apply: 1= marginally detectible effect and temporary/ most desirable 2=minimal and detectible effect, very small localized temporary effect 3=minimal impact, some permanent loss but health, survival and stability of community not affected 4= Significant impact-permanent loss of and measurable change to system—some loss of diversity recover >5 years 5= Very significant impact-unacceptable loss, seek alternative</p> <p>Interpreting the Score- The total possible score for environment is 60, indicating the worst possible score. A single '5' score means that the item receiving a 5 score must be fully adjusted and a revision submitted to the PMU for consideration. A score between 24 and 36 means easily dealt with issues and only temporary damage. Any score between 37 and 48 means there are issues and the factor receiving the high scores need to be adjusted and investigated. Above 48 means serious issues careful investigation and likely delays will occur.</p>					
<p>II./III. Social and Contractor Vessel Screening Scale to Apply: 1= no issue/best 2=minor issue easily resolved, straightforward documentation available 3= Issue and will require action and may delay work for weeks only 4= significant issues but can be resolved and needs senior government intervention and time delay 5= unresolvable issue, find alternative (site or vessel/contractor)</p> <p>Interpreting the Score: Total possible worst score is 80. Scores <25 indicates no problems, 26-40 indicates minor problems easily dealt with, 41-60 indicates considerable problems and some further investigation and work delays likely to occur. Scores >60 indicate serious problem and options need to be carefully considered since risk of long delays is high.</p>					
<p>IV. Construction Method: The last five factors are presented as a reminder to planners of the dramatic difference in the environmental and social impact of different construction methods and choices of where and how a fibre optic cable is brought into coastal waters. For that reason these factors stand alone, and any method with a score of 4 or 5 is likely to require an environmental assessment</p>					

2.4 ECOP 4: Management of Construction Sites, Materials, Waste and Disposal of Spoils

2.4.1 Sea-Side

104. SFOC construction sites are principally the large ocean going cable laying vessels (Figure 3), which are self-contained and can operate at sea continuously for months. Management of pollution stemming from vessels involves fuel, waste and ballast water.

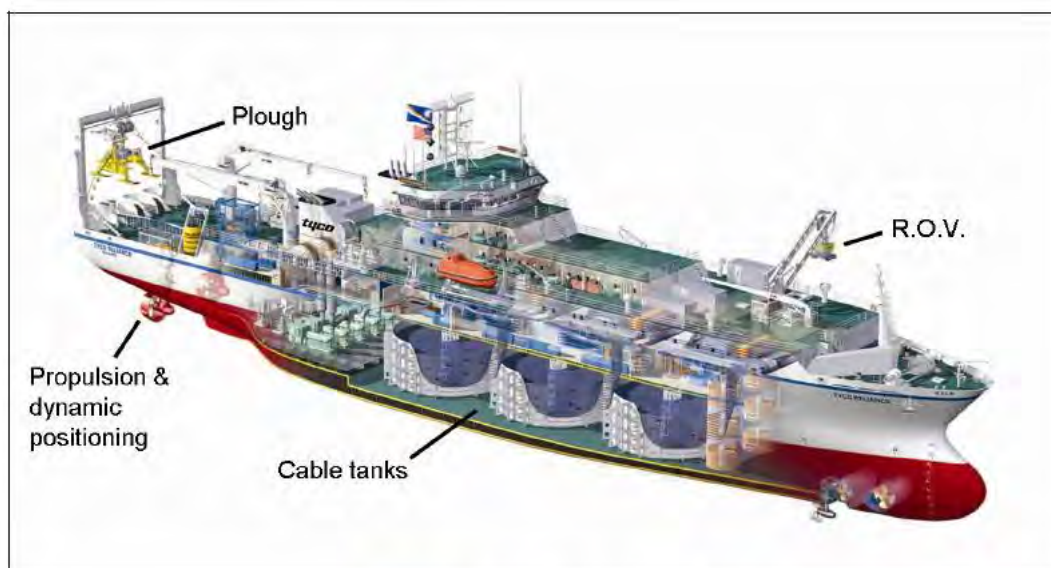


Figure 3. Cutaway view of ocean-going cable laying vessel.

105. Vessel operators should be required to provide the following certificate and written assurances to the executing agency:

- Stack emission compliance with the USEPA CFR-40 standards (<http://www.epa.gov/otaq/marine.htm> CFR-40 set of codes), and a smoke density test compliance using the Canadian Department of Transport Smoke Chart set out in the schedule of the regulations (<https://www.dieselnets.com/standards/ca/marine.php>); and,
- compliance with MARPOL guidelines for fuel and lubricant handling and storage system and its compliance with international maritime organization (IMO) guidelines on:
 - Overview for Pollution Prevention: <http://www.imo.org/OurWork/Environment/Pages/Default.aspx>
 - Oil Pollution (MARPOL Annex I): <http://www.imo.org/OurWork/Environment/PollutionPrevention/OilPollution/Pages/Default.aspx>
 - Sewage disposal (MARPOL Annex IV): <http://www.imo.org/OurWork/Environment/PollutionPrevention/Sewage/Pages/Default.aspx>
 - Garbage disposal (MARPOL Annex V): <http://www.imo.org/OurWork/Environment/PollutionPrevention/Garbage/Pages/Default.aspx>

106. Ballast water is used in all large vessels to stabilize them when at sea. This practice reduces stress on the hull, provides stability, improves propulsion and manoeuvrability, and compensates for weight lost due to fuel and water consumption.

Ballast water can pose serious ecological, economic and health problems when discharged indiscriminately allowing the multitude of marine species carried in it to be discharged into a new marine environment. These species include bacteria, microbes, small invertebrates, eggs, cysts and larvae of various species. The transferred species may survive to establish a reproductive population in the host environment, becoming invasive, out-competing native species and multiplying into pest proportions.

107. The effects of these introduction are well documented and have been devastating. Quantitative data show the rate of bio-invasions is increasing at an alarming rate and new areas are being invaded all the time. The spread of invasive species is now recognized as one of the greatest threats to the ecological and the economic wellbeing of the planet. These species are causing enormous damage to biodiversity and the valuable natural resources, since these 'invasives' usually outcompete native species and quickly proliferate as they have no natural predators in the new setting. This change usually destabilizes the 'infected' ecosystem, affecting many species.

108. In response to this global threat IMO prepared the International Convention for the Control and Management of Ships' Ballast Water and Sediments (BWM Convention), which is not fully in force, but many nations are complying with it. For any donor supported fibre optic cable project utilizing large ocean going vessels the provisions and requirements in this convention need to be complied with.

109. Fibre optic cable placement projects involve very few construction materials other than the cable itself, which is inert, has no liquid or electrical charge associated with it and remains on the seafloor as a very small diameter structure. Closer to shore the cable is usually buried using a submarine trencher, usually towed by the cable vessel or tug when close to shore. It is also used to bury the cable in shallow mudflats, as is the case in Koror Palau where the cable will need to be placed over a large tidal mudflat for several km, and where a towed trenching device (Figure 4) should be used.



Figure 4. Example of trenching equipment and its deployment

110. The trenchers operate by opening a furrow, often about 0.75m deep laying the cable in it and filling in the furrow in a single operation. When placing a cable, every effort is made to use existing channels and openings in reefs to enter coastal waters.

111. Since nearly all 19 ECOP countries have either natural or existing dug channels into coastal waters, and cable contractors should always use this route as the first option



Power cable installation using *Hydroplow*



Power cable installation using *Hydroplow*

Sources: *Center Marine* www.iscpc.org

for access. When considering placing the cable into a shipping channel the contractor should:

- consult with the local port authority to inquire about dredging and where a cable could be placed without interfering with dredging and if burial is needed; and,
- consult with fisheries and marine resources departments to establish local coastal fishing grounds and minimum distance and burial requirements.

112. There may be situations where the cable operations facility is far from the channel making the landside trenching to reach the facility too long and disruptive⁸. If this is a serious concern, options such as stringing the cable on existing utility poles may be considered.

113. Horizontal Directional Drilling (HDD) is occasionally used to bring conveyances across sensitive areas such as coral reefs. This involves drilling a shaft underneath a sensitive area at a depth where it is not disturbed and then feeding the cable through the hollow shaft to shore. It is a complex and environmentally risky job since the bentonite drilling lubricant is difficult to contain. Once in the water column bentonite affects turbidity for long periods of time and settles onto the corals as it drifts away from the drilling site.

114. The HDD method requires a large landside operating base, in fact several ha of land, to set up and operate the rig, provide fuel and of course to prepare the bentonite. The rig is noisy and produces considerable local air pollution.

115. Any cable installation considering this method needs to conduct special studies (usually an environmental assessment) and establish an industry standard bentonite capture system. An option would be to use more environmentally friendly lubricants such

⁸ There is of course the option of stringing the cable in existing telephone and power poles, which exposed it to damage during storms, from trees falling onto the cable. It was an option considered for Chuuk State, but rejected due to the risk of tree damage during a typhoon.

as Xan-bore which is 100% xanthan gum, fully biodegradable, and can be prepared using seawater, thus avoiding the large volumes of freshwater⁹ needed to prepare the bentonite slurry.

2.4.2 Landside

116. On the landside the construction involves the excavation of a 0.4 to 0.5 m wide trench for cable placement from the landing to the cable operations facility. This facility is usually a 5m x 10m room attached to the main telecommunications building, and the work is equivalent for minor construction works such as road maintenance, small building additions or water-line installations.

117. Material to be used include small quantities of concrete, bricks, wood, aggregate and asphalt for any access road improvement if the cable building site is not attached to an existing facility. Local contractors (3-5 people) will likely provide these services and complete the work in compliance with local, regional and/or national building regulations and standards.

118. When planning and designing the landing facility the executing agency needs to establish when the size of a facility triggers the country's environmental assessment process, then decide if the larger facility warrants the added cost and time need to complete the ESIA.

119. A large facility with its own transformer station, large diesel generator and fuel supply would likely trigger a basic environmental study or at least the preparation of an environmental management plan, requiring funds, time and special expertise.

2.4.3 Excavation and Disposal of Spoils

120. Spoils disposal is not an issue with SFOC projects so long as the cable operations facility is kept close to the landing site, and its footprint is tailored to the existing and near-future need. Should a large complex be built, the national environmental assessment regulations in many of the countries would be triggered and safeguards analysis such as an ESIA would be completed.

121. In the marine environment, cable installations do not generate spoils since the trenching operation uses the same material to close the trench as was dug up. This is easily monitored in shallow waters by cameras attached to the trenching device, and by remote operated vehicles (ROVs) working in deep ocean settings. In the deep; ocean the cable is often placed on the seafloor without trenching.

122. Trenches on land use the same principal as with the marine work, namely, the excavated material is used to fill in the trench one the cable has been laid.

123. Clearing and excavation of the cable building site requires minor spoils disposal, but fully controlled by local building codes and ordinances.

⁹ Most ECOP countries have limited freshwater resources

2.5 ECOP 5: Traffic Management (Land and Marine)

2.5.1 Marine

124. Traffic management on the marine side is not an issue since the cable laying and oceanographic vessels work at sea, are bound by maritime rules of travel and vessels have the necessary navigation equipment to conduct safe voyages. Vessel captains are licensed and must comply with these rules. Once inside the 12 mile territorial water large vessels are required by law to contact harbour masters or the coast guard providing specifics on position, route of travel and purpose of voyage. Therefore, these vessels are tracked and are very visible as they are large and will stand out in most ECOP country coastal waters.

2.5.2 Land

125. Traffic management becomes an issue when the location of the cable operations facility is far removed from the landing site and the trenching distance between the landing site and the cable facility is more than 100m. Management of this issue can be dealt with in three ways:

1. doing the trenching on an existing government owned easement and ensuring that access across driveways and entrances are restored immediately after trenching moves to a new site;
2. reducing the distance between the landing site and the facility to a few meters or across government land, not interfering with access or fixed assets (as has been done for Yap State, in FSM); or,
3. stringing the fibre optic cable on existing power or telephone poles.

2.6 ECOP 6: Storage and Management of Chemicals and Hazardous Materials

126. SFOC installation projects generally do not use any chemicals or hazardous materials. The cable laying vessels use bunker oil as fuel and lubricants which if spilled are very hazardous to marine life and people. Vessels involved on SFOC projects funded by a donor should be required to comply with MARPOL's Oil Pollution convention (MARPOL Annex 1¹⁰), as well as the UK's Maritime and Coastguard Management Note, MGD 497¹¹, addressing the handling and storage of fuels and hazardous material on board ships.

2.7 ECOP 7: Management of Air, Surface Water Pollution, Noise and Vibration

127. Generally, the management of these conditions for SFOC installations is only marginally important, since it is mostly the cable contractor vessels that can emit significant volumes of pollutants, albeit temporarily. The following is a summary of the issues that the executing agency and implementing agencies need to be aware of and

¹⁰ <http://www.imo.org/OurWork/Environment/PollutionPrevention/OilPollution/Pages/Default.aspx>

¹¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/282082/mgn497.pdf

the actions they need to take to avoid and/or mitigate degradation of the air, water, noise and vibrations conditions in the project area.

Preconstruction Period

128. Once a contractor has been selected, but before mobilization, the relevant preconstruction period mitigation and monitoring tasks listed in the project ESMP should be checked. This will ensure that the contractor's vessels comply with international stack emission standards, vessel waste management and workplace noise standards established by IMO and the World Health Organization.

2.7.1 Air Pollution and Surface Water Pollution

129. **Air Pollution-** Prior to mobilizing to sea all construction vessels to be used on a project will need to provide stack emission test results for PM₁₀, PM_{2.5}, SO₂ and NO_x to the executing agency or a designated manager, confirming compliance with standards as defined by the country or the USEPA standards (<http://www.epa.gov/otaq/marine.htm> CFR-40 set of codes).

130. Vessels will also be required to complete a stack smoke density test according to the Canadian Department of Transport's Smoke Chart set out in the schedule of the regulations. This test is simple and effective means (<https://www.dieselnet.com/standards/ca/marine.php>) of quickly identifying an air pollution problem. For vessels with diesel engines, a smoke density less than No. 1 is normally required with the exception being a smoke density of No. 2 for an aggregate of not more than 4 minutes in any 30-minute period.

131. Should a cable operations facility be installed with a diesel generator, its emission levels will need to be checked to ensure that it meets national and/or state level standards as defined by the government environmental protection authority or as in the chart attached (Figure 5).

Construction Period

132. **Surface Water Pollution-** The operation of vessels is the only significant surface water pollution source.

- a) The handling and disposal of sewage and solid waste generated by vessels is notoriously bad with dumping at sea a standard practice. For all vessels working on donor funded fibre optic cable projects, the sewage will need to be treated according to MARPOL's Annex IV-Regulation for the prevention of pollution by sewage from ships.

Nonroad emissions regulations schedule / EU

Portable nonroad gensets (i.e., rental) are required to meet Stage II beginning 1 January 2007; Stage IIIA is noted at red bars. The EU does not regulate stationary prime or emergency standby installations.

Genset Power:

kVA (50 Hz Standby)	kWm	(HP)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
18-33	18 - 36	(24 - 48)	8.0 / 1.5 / 5.5 / 0.8				(7.5) / 5.5 / 0.6						
38-55	37 - 55	(49 - 74)	7.0 / 1.3 / 5.0 / 0.4				(4.7) / 5.0 / 0.4						
66	56 - 74	(75 - 99)	6.0 / 1.0 / 5.0 / 0.3				(4.0) / 5.0 / 0.3						
70-110	75 - 129	(100 - 173)	6.0 / 1.0 / 3.5 / 0.2				(4.0) / 3.5 / 0.2						
138-550	130 - 560	(174 - 751)											

NO_x/HC/CO/PM (g/kW-hr) (NO_x+HC)/CO/PM (g/kW-hr)
 [Conversion: (g/kW-hr) x 0.7457 = g/bhp-hr]
 Separate NO_x and HC standards separated by a "/". Combined NO_x and HC standards denoted in parenthesis "()".

■ Stage II ■ Stage IIIA

Figure 5. EU standards for Stationary Diesel Generators.

- b) The discharge of ballast water which may contain noxious and/or invasive exotic species and poses a major global threat to biodiversity and ecosystem health, is a major concern. All vessels working on donor funded SFOC projects should be required to adhere to IMO's Environmental Management and Protection Committee guideline on ballast water management¹².

These guidelines indicate that ballast water must be treated such that only a very small percentage of living organisms in the ballast water survive and are released to the ocean. Ships shall discharge less than 10 viable organisms \geq 50 microns in size per cubic metre of water and less than 10 viable organized between 10 and 50 microns in size per milliliter of ballast

- c) Solid waste such as scraps, paper and plastic wastes should be contained on board ship and disposed of at shore-based sites and a confirmation note provided to the executing agency by the contractor, giving the name and location of the waste depository.

2.7.2 Noise and Vibration

133. Noise and vibration are very minor issues for SFOC projects. There is noise on board the cable laying vessels but contractors provide personal protective equipment to operators at noisy locations such as vessel engine rooms and the cable spool chambers. The ultrasonic sound used to map the seafloor is another source and it is discussed in detail later in ECOP 8.

134. The only noise source on shore could be the standby generators used at a cable operations center. This problem is easily controlled by installing a generator that has sound attenuation baffles, thereby eliminating noise within a few meters of the operating unit. It is advisable to either purchase generators that are equipped with noise attenuation enclosures or retrofit existing units, providing up to 25 dBA noise attenuation¹³.

135. Vibration is not an issue with SFOC installation projects.

¹² <http://www.imo.org/About/Conventions/ListOfConventions/Pages/International-Convention-for-the-Control-and-Management-of-Ships%27-Ballast-Water-and-Sediments-%28BWM%29.aspx>

¹³ See <http://www.jubailibros.com/products/sound-attenuated-enclosures/>

2.8 ECOP 8: Protection of Coastal Areas, Marine Habitats and Marine Species

136. The most significantly affected component of the environment during a SFOC installation project would likely be the nearshore and beach environments as well as the coastal marine waters. Specific standards defined in an ESIA's ESMP, developed to protect the coastal areas, marine habits or species group should be closely adhered to by the contractors (see the screening checklist in Table 4).

2.8.1 Protection of Coastal Areas

137. Sensitive coastal habitats with a chance of being impacted by a SFOC installation project are mangrove patches, protected shoreline forests, special coastal habitats such as tide pools, tidal marshes, and turtles nesting beaches.

138. To avoid damaging such sites the executing agency needs to review the environmental and social safeguard document prepared for the project and determine where such sites are located. If identified, all efforts should be made to avoid encroaching on these sites, particularly turtle nesting beaches, given that many species are vulnerable or already endangered. Mangrove areas can be encroached on but only to the extent permitted in the country's mangrove protection policies(which many of the ECOP area countries have). The executing agency will need to be familiar with these requirements and instruct the implementing agency on what is permissible. Should no policy exist and mangrove is to be removed, replanting and rehabilitation of nearby mangrove areas will be required, using a two to one formula, namely an area at least twice the size of the area cleared needs to be rehabilitated or replanted with mangrove seedlings.

139. For countries without nearshore marine survey data, international organizations such as UNDP SPREP and SOPAC may provide some information; otherwise an inventory will be needed.

2.8.2 Protection of Marine Habitats

140. **Seagrass Meadows-** Seagrass meadows (Figure 6) occur in shallow seas around many of the ECOP countries. Seagrass ecosystems are species rich and include endangered species such as dugongs, seahorses and turtles. They are very important for seabed erosion control and the protection of coastal marine ecosystems by stabilizing sediments, recycling nutrients and forming the base of the oceanic detrital food webs. Currently, they are facing many threats, caused mostly by humans.

141. The standard rule in the literature and from consultation with experts, is that a) all effort should be made to avoid seagrass bed disruption by maintaining a 75m avoidance distance from all such sites; b) if crossing is necessary, a method that disturbs the narrowest of corridors, such as with a towed submarine trencher should be used. At no time should hydro-jet trenching be used.



Figure 6 Image of Tropical Seagrass Meadow (courtesy of Nature Geoscience Journal)

142. **Coral Reefs-** Coral reefs are the iconic feature of tropical islands; nowhere more important than the Pacific island nations of Melanesia, Micronesia and Polynesia. Many countries have extensive fringing, barrier and atoll reefs, most under enormous threat from pollution and exploitation. Coral reefs are not only critical to the ecological wellbeing of coastal marine ecosystems, but are also essential for protecting the coastlines from punishing seas and storms.

143. Therefore, the general rule applied to all donor funded projects should be to keep any SFOC project ≥ 75 m from any coral formation, and to use existing channels when entering a lagoon or barrier reef system. Also, construction work should avoid creating sediment plumes that can drift over live coral (identified in environmental assessment documents usually accompanying SFOC installation projects).

144. When no other option is available drilling a shaft under corals via HDD can be considered. However, any donor funded project considering using HDD under living coral should undertake an environmental assessment prior to any such work.

145. If conditions warrant, such as in situations where a fringing reef is dead (as is the case in some sections of South Tarawa, Kiribati), the cable can be buried in a trench cut into the dead coral, followed by immediately re-burial. The rule here is disturbing the smallest possible reef area, with and work on the reef timed with tidal cycles, so as to avoid undue damage.

146. **Fish Spawning Aggregation Areas-** Some species, for example various groupers (*Epinephelinae*), congregate in enormous numbers to spawn at specific sites in the coastal oceans. These sites, as for example the grouper aggregation site at one of the entrances to Chuuk Lagoon, are known to national and state/local fisheries authorities, marine resources departments and often fishers. Before finalizing the alignment the contractor or the implementing agency should check with local fisheries authorities to be sure that the cable will be at least 75m from any such aggregation site, and make the necessary alignment change if a conflict is found.

147. The rule established for any donor funded project will be ≥ 75 m distance from such areas at all times and for all stages of the work.

148. **Seamounts**-Seamounts are undersea mountains created through volcanic activity, where most often the tops have eroded creating a sort of undersea mesa (Figure 7). They are found mostly at depths between 500 and 900 m and occur between latitude S15° and N15°, the geographic boundary within which most of the ECOP countries are located.

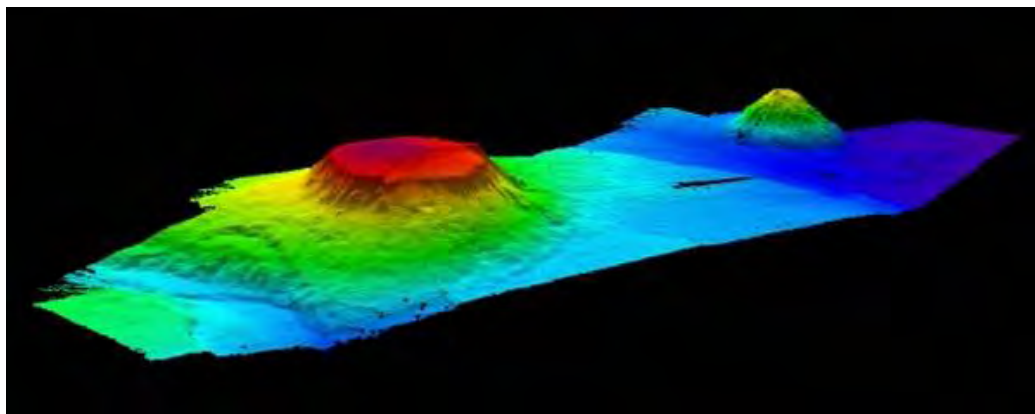


Figure 7. Hydrographic Map of Bear Seamount, North Atlantic Ocean

149. Seamounts are considered marine ecosystem hotspots that support much marine life. The biological richness of seamount habitats results from the shape of these undersea mountains which have steep slopes creating nutrient upwellings, providing food for creatures ranging from corals to fish to crustaceans. Seamounts cover about 28.8 million square kilometers of the earth's surface and are extremely valuable feeding grounds for many pelagic and coastal fish species and crustaceans. If they are detected during the cable alignment survey or national marine resource departments can identify them, cable laying operations should, if possible, keep a 2-km distance from the base of such formations. The UN published a useful reference on seamount location which cable laying vessels would be wise to download as a reference. The report also contains names and contacts of experts in different regions of the world¹⁴

150. **Hydrothermal Vents**- Hydrothermal vents (HV) are cracks in the earth's crust where lava and sediment rich water rises from deep ocean vents, with temperatures more than 350C at the discharge points. Unique communities have been discovered living in total darkness, relying on sulfur compounds in the water plus microorganisms to survive. In essence, they are a newly discovered form of life about which much needs to be learned.

151. HVs are relevant to this ECOP guideline since the deep ocean areas to be crossed by the Palau and FSM cables have such systems, many as yet undiscovered. If hydrothermal vents are detected during the alignment survey, a 1 km detour around these structures should be maintained. The oceanographic survey team will need to highlight these features on an alignment map and submit it to the executing agency.

¹⁴ <http://apps.unep.org/publications/pmtdocuments/-Seamounts,%20deep%20sea%20coralsand%20fisheries-2006rsrs183.pdf>



Figure 8. Example of hydrothermal vent and sea life, at >2000m depth.

152. **Deep Sea Coral Thickets-** Unlike their near surface dwelling relative who most people will be familiar with, deep sea corals live in no-light conditions getting their food from detrital rain and crustaceans moving in the water column. They occur in all oceans and at all depths in the aphotic (no light) zone. On sonar images they appear as large mounds on seamounts or as features on an otherwise flat sea floor. They will be difficult to spot, but cable survey crews need to be aware of their existence and if mounds are detected, a ROV should be lowered to establish the composition of the formation. If corals are detected the cable alignment must be kept a minimum 2 km distance from these formations, and the discovery reported to the national executing agency.

153. For the preceding three subareas, and assuming there are no proprietary issues with the data, the information gained needs to be deposited with SOPAC . It is urged that the executing agency instruct the contractor to send the data to PaceGeo (<http://www.pacgeo.org/>) an open access Geospatial Data Repository and also Genode (<http://geonode.grida.no/>) a worldwide database for this type of information.



Figure 9. Bubblegum Deep Sea Coral (*Paragorgia arborea*), 1,350m depth; Photo: NOAA/MBARI 2006

154. **Cetaceans (Whales)-** The main issue regarding whales is the conduct of oceanographic surveys and cable laying operations in areas where whales travel; which are the oceans around the ECOP countries. Given the importance of cetacean protection, a special guideline has been prepared and is organised into four sections, two dealing with vessel and cable laying operations and two addressing sonar equipment operation during the SFOC alignment survey.

a) Guidelines for all vessel operations-General

1. When piloting vessels, vessel operators shall alter course to remain at least 92m (100 yards) from whales, and at least 46m (50 yards) from other marine mammals and sea turtles;
2. Reduce vessel speed to 10 knots or less when piloting vessels in the proximity of marine mammals;
3. Reduce vessel speed to 5 knots or less when piloting vessels in areas of known or suspected turtle activity;
4. Marine mammals and sea turtles should not be encircled or trapped between multiple vessels or between vessels and the shore;
5. If approached by a marine mammal or turtle, put the engine in neutral and allow the animal to pass;
6. Unless specifically covered under a separate permit that allows activity in proximity to protected species, all in water work will be postponed when whales are within 92 m (100 yards), or other protected species are within 46m (50 yards).
7. Activity will commence only after the animal(s) depart the area; and
8. Should protected species enter the area while in-water work is already in progress, the activity may continue only when that activity has no reasonable expectation to adversely affect the animal(s).

b) Guidelines for Vessels operating acoustic apparatus within areas known to be frequented by cetaceans

1. The minimum source level required to achieve results should be used and frequencies chosen to minimize impacts on marine mammals.
2. Continuous noise is likely to be more damaging to marine mammals than pulsed sounds and should be avoided where possible.
3. Qualified and experienced **Marine Mammal Observers (MMOs)** must be present on board all vessels conducting seismic (including boomers) or electromagnetic surveys at all times during the survey.
4. The MMO must use a distance measuring stick, reticle telescope or binoculars to ascertain distances to marine mammals.
5. MMOs must be engaged solely in monitoring the operator's implementation of these guidelines and conducting visual/acoustic observation of mammals during the survey.
6. The MMO must submit copies of the reporting template as outlined at the end of these guidelines and must submit this report to the competent government agency in Palau.
7. The vessel operator must provide a report (including a daily log) on the operation of the seismic equipment that will indicate the soft starts and their duration to the MMO.

c) Multi-beam and side-scan sonar surveys: Pre-Start Scan for Marine Mammals

1. If survey work is to be conducted in sheltered and enclosed waters, survey work must start at the inner most part of the bay, inlet or estuary to be surveyed and work outwards. This is to ensure that cetaceans are not driven into an enclosed area, which could cause them to panic.
2. MMOs should survey the area for the presence of cetaceans 30 minutes before the starting of operations.
3. A minimum distance of 1000 metres is required between the centre of the array/sound source and the nearest cetacean before starting.
4. If marine mammals are seen within 1000 metres of the centre of the sound source the start of the sound source(s) should be delayed until they have moved away, allowing adequate time after the last sighting for the animals to leave the area (30 minutes).
5. If the cetaceans do not leave the area it is recommended that the survey vessel alter course to ensure that the animals are outside the 1000 metres exclusion zone when soft start commences.

d) Multibeam and side-scan sonar survey: Soft-start procedures

1. The sound level must be allowed to gradually build over a period of 20 minutes; where this is not possible, the equipment should be turned on and off over a 20 minute period to act as a warning signal and allow cetaceans to move away from the sound source.
2. Multibeam or side-scan sonar start-up must occur during daylight hours when MMO's can carry out the required start-up procedure.

155. **Marine Protected Areas (MPA) and Conservation Areas (CA)**- Many of the ECOP countries have unique systems of coastal marine resource management which involve entrusting communities to manage coastal areas for resource protection and resource harvesting purposes, usually extending from the shore to the edge of the island's reef formation. They are variously known as MPAs or CAs. Management is usually by a community or municipal council which is responsible for preparing management plans and reporting annually to national or state-level marine resources and/or fisheries departments.

156. During a project's environmental assessment, the location of such areas will usually be defined and a map prepared for use by the cable laying contractor, as will be the case with Yap State in FSM SFOC operations. For any donor-funded project, the SFOC laying operations must remain a minimum of 75 meters away from the boundary of an MPA or CA, or area with a similar designated function.

157. Prior to contract mobilization the implementing agency or PIU should review the environmental assessment document, review project limits with local authorities and brief the contractor on cable alignment boundaries in near-coastal waters.

2.8.3 Protection of Socioeconomically Important Sites

158. **Tourism Dive Sites** - Many of the island nations have economically important dive sites that generate large amounts of tourist dollars for local and national economies. Good examples are the manta ray (*Manta birostris*) viewing dive sites in Yap and the wreck dive sites in Chuuk Lagoon, FSM. These sites are well known and the implementing agency and contractor(s) must be aware of their locations and keep all cable laying operations at least 200m away.

159. **Fish Attraction Devices (FADs)** - Some countries e.g. FSM have built fish attracting devices in 60-100m deep ocean locations. These are underwater artificial reefs that attract fish and provide fish resources for local fisher people. Marine resources department will have exact location information on these sites and contractors will need to remain away from these structures, i.e., in deeper ocean or at least 200m distance from any FAD.

2.9 ECOP 9: Chance Finds Procedure and Cultural Resources Management

160. During an SFOC laying project, chance finds of culturally and historically important objects and sites is possible. These objects/areas could include undersea monuments, sacred customary ocean zones, ancient wrecks, old coastal monuments, landmarks including ancient trees or specific buried objects such as stone money. A set of steps is provided to help with reporting on and conserving chance finds.

Preconstruction Period

161. During the ESIA period, or certainly anytime during the planning for the cable alignment, the executing agency and/or implementing agency needs to review all available information on the location of any culturally important features designated by the country. These areas should highlighted, making sure that construction distances are enough to avoid any damage. This is particularly important for sacred trees, groves and special coastal zones. These sites can usually be found in the records of the national agencies as shown in Box 2, or with community chiefs, located on a map, the listed with coordinates and given to the contractor.

162. The executing agency, working with the national historical department or ministry, also needs to establish a protocol that the contractor should follow if there is a chance find. The three steps to follow are: a) stop work b) contact authorities and reported the find, c) follow instructions provided by the authority which may be to plan a permanent detour around the site, conduct a rapid assessment or excavate and remove the artifact.

Box 2: Specific agencies dealing with historical and cultural preservation

Palau

Palau Historical and Cultural Advisory Board
Palau Division of Cultural Affairs

FSM:

Yap Historical Preservation Office,
Department of Commerce and Industry
Chuuk Historical Preservation Office
(proposed only), Department of
Commerce and Industry

Construction Period

163. As soon as the contractor is appointed and before field mobilization occurs, a briefing will be completed by the implementing agency working in cooperation with the Archaeology, Historical Monuments or similarly-named agency, informing the contractor of any know features to avoid and also to review the steps to be taken should a chance find be made. Most important will be providing the contractor with contact information for the unit dealing with the protection of historical and culturally important features.

2.10 ECOP 10: Work Crew Activities and Environmental, Social and Indigenous People Safeguards

164. For most SFOC installation projects the work crews are generally small (20-50 people) and living on board ocean going vessels. Even for large projects, these crews remain on board vessels, coming ashore only when refueling takes place, since completing the cable laying operation in as short a time as possible yields higher profits.

165. The nearshore placement of a cable is done with smaller vessels like tugs or even outboard motor boats, towing the cable to the landing site, requiring only a few people. Therefore, it is the crew's activity at sea and aboard ship and their management of garbage and sewage discharge that is important.

166. Generally, the cable landing sites will be in urban areas close to existing telecommunications facilities where the issues of impact to indigenous people are minimal. Nevertheless, the executing agency needs to establish if the landing site, cable route on land and the route from the edge of the coastal reef to shore could negatively impact indigenous people, i.e. people ethnically distinct from the general population. If indigenous people are impacted, both ADB's and WB's indigenous peoples guidelines will be triggered. Specific consultations need to be held to establish what the impact might be and a best-possible mitigative action agreed to and implemented.

Pre-Construction Period

167. When preparing the construction contract documents, namely the contract specifications or special conditions of contract, the executing agency should include clauses concerning unacceptable activities of workers while on the job, including the consumption of alcohol, use of firearms, illegal harvesting of marine products, especially endangered animals, damage to protected habitats such as reefs, turtle beaches and illegal dumping of garbage and waste into the sea. A few examples of clauses follow:

EXAMPLE SUB-CLAUSE

Alcoholic Liquor or Drugs

The Contractor shall not, otherwise than in accordance with the Laws of the Country, import, sell, give, barter or otherwise dispose of any alcoholic liquor or drugs, or permit or allow importation, sale, gift, barter or disposal by Contractor's Personnel.

EXAMPLE SUB-CLAUSE

Arms and Ammunition

The Contractor shall not give, barter or otherwise dispose of to any person, any arms or ammunition of any kind, or allow Contractor's Personnel to do so.

168. The provision of clauses concerning the harvesting from or harm to the marine environment is uncommon and such clauses need to be added as Special Conditions of Contract. In waters where whales travel, a specific clause about harming cetaceans should be included; especially concerning restrictions and heavy fining for shooting at any cetaceans.

169. These conditions are very difficult to enforce and while working at sea, will be the duties entrusted to the contractor.

170. The landside construction activities will be controlled by national and local regulations and standards concerning construction work, with building permits and work approvals required from local authorities. When retaining local contractors to undertake the landside work, the executing agency should ensure that contractors are licensed by the national or state authority and operate within a code of practice. If this cannot be

verified the same clauses as included in the contract with the marine works should be included in the landside contract documents.

171. If indigenous people are identified and a negative impact is possible, consultations and meeting should be completed and actions to prevent or mitigate effects decided on and implemented by the executing agency. If potentially serious negative effects are possible a special social impact assessment would likely be required and the executing agency needs to review ADB/World Bank guidelines to check which conditions could trigger such special studies.

Construction Period

172. Once the executing agency hands over duties to the implementing agency, all the follow up actions become the responsibility of the latter and/or the PMU and the CSC (if retained). These duties involve compliance monitoring and preparing and submitting the semi-annual monitoring report to the executing agency and the donor(s). Since monitoring by the PMU/CSC while the ship(s) is at sea is not possible, the marine work, compliance monitoring will have to be done remotely with the contractor filling in a compliance monitoring checklist and submitting that to the PMU/CSE.

2.11 ECOP 11: Land Acquisition, Resettlement, and Minimizing Community Impact

173. The policy framework and entitlements for losses of access to land , land acquisition and damage to assets such as properties, trees and crops will be based on the laws and regulations of each ECOP country's government. The principal laws governing land acquisition in most Pacific island countries are usually included in the country's constitution and land acquisition or land registration acts.

174. Most of these laws and regulations provide for compulsory release of private land for the public good. However, governments are rarely willing to use this power due to expected backlash from communities and landowners. As a result government land agencies commonly negotiate with landowners to secure land, often a long and drawn out process.

175. If donor funding such as from the ADB or World Bank is to be used, the ADB's Safeguard Policy Statement, its Involuntary Resettlement process or the World Bank's Operational Policy 4.12 on Involuntary Resettlement could be triggered and the specified steps complied with¹⁵.

176. The donors' twelve principles associated with land acquisition and involuntary resettlement are presented for implementing agencies and executing agencies to be aware of and consider adhering to. They are:

1. screen early and assess resettlement impacts;
2. carry out consultations with APs and develop a grievance redress mechanism;
3. improve/restore livelihoods of APs through land-based strategies, replacement of lost assets, compensation at replacement cost, and additional benefits, as appropriate;
4. provide appropriate assistance to physically displaced APs;
5. improve living standards of poor APs and other vulnerable groups;

¹⁵ Most ECOP guideline countries have weak or non-existent resettlement or indeed social assessment guidelines, and therefore the donor procedures become very important.

6. develop transparent procedures for negotiations;
7. provide assistance and compensation to non-titled APs for loss of non-land assets;
8. prepare Resettlement Plans (RPs) or due diligence reports (DDRs), with necessary provisions;
9. disclose RPs to APs and other stakeholders and document the consultation process;
10. conceive and execute resettlement as part of the project;
11. deliver entitlements to APs before they are physically or economically displaced; and,
12. monitor and assess resettlement outcomes.

177. A well planned SFOC project should not trigger resettlement issues and not require significant land acquisition; certainly not triggering a resettlement planning study. With relatively little effort suitable sites, with no land acquisition or resettlement requirements, were found for the three projects (Palau, Yap and Chuuk) associated with this ECOP guideline.

178. This success was founded on wide-ranging consultation and the examination of a large number of optional locations, e.g., six for Yap State, FSM. Meeting with officials, community leaders and other interest groups were essential and helped to justify a preferred location.

Pre-construction Period

179. During the pre-construction period, the national or state/regional executing agency is always in charge of any land acquisition and resettlement matters. The executing agency may assign these duties to the implementing agency.

180. Since so little land is publically owned and there is limited experience managing this process in the EPOC countries, any land acquisition problem often leads to many convoluted problems. The worst is the start-stop-start approach which sometimes creates serious community conflicts and suspicion, particularly in cases with multiple claimants of the proposed site. To address this the executing agency, with assistance from the national or regional land management department, needs to document the land acquisition procedures including (i) listing the step-by-step process to follow (ii) identifying the agencies in-charge and (iii) defining a realistic time frame and steps needed to inventory and register private lands potentially impacted¹⁶.

181. Sometimes, these procedures have been legalized, but even then are known only to a few, such as lands offices or government investment corporations, making wide-ranging meetings and discussions during the preconstruction period very important.

182. A project's GRM provides a step-by-step approach to filing complaints concerning any issue arising due to a project and sets out what responses and resolutions are to be provided as well as who needs to be contacted. The GRM includes a committee that hears complaints and tries to resolve them quickly and to the satisfaction of the complainants.

183. The lack of a GRM¹⁷ can delay the effective resolution to project-related complaints made by communities or landowners. Therefore, a GRM or complaint

¹⁶ Most projects will have an ESIA which will include details of these steps and the executing agency will simply need to follow the instructions provided in the ESIA

protocol needs to be in place. As well, the executing agency needs to ensure that the GRM has been extracted from the ESIA and is widely displayed, or that a complaints protocol is established with the PMU and then circulated.

184. Compensating losses is often achieved by the application of a set of actions, referred to as an entitlement framework (EF). The EF, which needs to be 'legalized' by the national or state/regional government before it can be used, defines compensation options available to an affected party, in relation to the type and extent of the impact. Armed with an EF, the executing agency can negotiate agreements in a consistent and transparent manner.

185. EFs are only needed when AP numbers exceed donor-defined thresholds; notwithstanding that any compensation offer should be clear and unambiguous; define what will be provided, when this will take place, and who will receive the compensation.

Construction Period

186. With proper documentation and permissions in place, plus knowledge of boundaries beyond which contractors cannot go, the land acquisition and resettlement issues should be minor.

187. Unfortunately there are frequent cases where civil works start before the formal land acquisition process (land titling) has been completed. This leads to rapidly escalating community grievances resulting in the blocking of access to the project site, forced stoppage of construction activities, and the demand for compensation during construction (as documented in Papua New Guinea and the Solomon Islands). Vandalism of the SFOC infrastructure and cable facility may also occur due to unaddressed landowners' grievances. Therefore, it is essential that the leader of the PMU or implementing agency, check that all ownership issues and disputes, whether on land or in the nearshore marine waters, have been settled and legal documents signed, before allowing contractors to start the work.

188. This then is the implementing agency's primary activity during the construction period, followed by periodic compliance monitoring to ensure that the boundaries established have not been crossed, e.g., too many trees cut or straying onto private land.

189. The implementing agency should also ensure that the GRM is functioning and that complaints are dealt with in a timely manner. Experience with many projects has shown that not dealing quickly with complaints and grievances, has resulted in good will and local cooperation evaporating, leaving only anger and suspicion.

2.12 ECOP 12: Occupations Health and Safety (Workers And Community)

190. Workers will be needed for the completion of the oceanographic survey, the cable laying operation, as well as the placement of the cable from the landing site to the cable operations facility. Responsibility for occupational health and safety (OHS) matters will be with the cable laying contractor.

191. **Oceanographic Survey and Cable Laying** - Crews undertaking this work will be managed by the selected contractor and will be subject to the OHS standards of the contractor and by the country the vessels are registered in. These operators should provide the proper personal safety equipment such as shoes, hardhats, ear and eye protection and life jackets to all workers on board.

192. Further, all vessels should have first aid and emergency medical services on board.

193. As part of the contract specification, the executing agency should require the bidders to provide confirmation that they comply with ILO standards as related to the provision of personal safety equipment and emergency medical services on board ocean going vessels.

194. **Landside Cable Laying Operations and Building Construction-** The guidelines in this ECOP do not extend beyond the building of a cable operations facility, i.e., they do not include impacts of the installation of the necessary land-side fiber optic cable network or the provision of service connections to individual customers.

195. The work crews used to bury or string the cable from the landing site to the cable facility will usually number six to ten people, who will be working according to the national worker safety and or labour regulations, which any contractor will need to comply with. Only licensed contractors will be hired to work on donor funded projects and as such they should by law be complying with national OHS standards. As well, contract specifications nearly always include such clauses.

196. Contractors retained to build the cable operations facility, which usually consists of a 5m x 10m room with space for an emergency generator and hook up to the power grid and municipal services, will require an equally small crew of workers. As with the cable placement crew, they will also be subject to the national or regional worker safety standards defined in one of the national or regional regulation which any licensed contractor should comply with. Contract specifications will include a requirement for adequate on-the-job worker safety and health provisions.

197. The International Finance Corporation (IFC), a World Bank Group member organization, and the World Bank have a list of occupational and community health and safety specifications that should be adhered to by donor funded projects. These specifications require the contractors to ensure:

- potable water supply;
- clean eating area;
- safe lighting;
- safe access to work areas;
- adequate first aid; and,
- safe indoor air supply.
- compliant water quality
- safe work sites
- traffic safety to protect workers and public
- apply disease prevention measures; and
- control of vector-borne diseases.

198. These specifications are provided in considerable detail at the following link and can be accessed free of charge¹⁷.

199. For large projects, executing agencies often include standard health and safety clauses in the contract specifications. The following example is provided:

- **Health**

The Contractor shall in addition to complying with the requirements of General Conditions of Contract and Contract Specifications; Sub-Clauses 6.7 [*Health and Safety*], Sub-Clause 6.13 [*Supply of Foodstuff*], Sub-Clause 6.14 [*Supply of Water*], Sub-Clause 6.15 [*Measures against Insect and Pest Nuisance*], Sub-Clause 6.18 [*Festivals and Religious Customs*], as well as the national standards of the Government of host country in respect of health and safety, observe and

¹⁷

[http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui_EHSGuidelines2007_GeneralEHS_2/\\$FILE/2+Occupational+Health+and+Safety.pdf](http://www.ifc.org/ifcext/sustainability.nsf/AttachmentsByTitle/gui_EHSGuidelines2007_GeneralEHS_2/$FILE/2+Occupational+Health+and+Safety.pdf)

maintain standards, towards the health and safety, of all of his employees, not less than those laid down by his own national standards or statutory regulations.

- **Safety**

The Contractor shall provide all appropriate protective clothing and equipment for the work to be done and ensure its proper use. Where required, safety nets, belts, harnesses and lines shall be provided. Where work is in, over or near water, life vests and rescue boats shall be provided. All safety and rescue equipment shall be fully maintained and made available at site at all times. Furthermore, the Contractor shall take all reasonable steps including training and drills to ensure the safety of all persons on the Site, whether in his employ or not and shall at all times promote the merits of safety awareness.

The Contractor shall appoint a Safety Officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.

2.13 ECOP 13: Livelihood Restoration and Compensation

200. Donor experience indicates that un-addressed involuntary resettlement issues frequently lead to severe economic, social, and environmental impacts, including:

1. dismantled production systems;
2. impoverishment when productive assets or income sources are lost;
3. relocation of people to environments where their productive skills may be less applicable and where competition for resources is greater;
4. weakened community institutions and social networks;
5. dispersed kin groups; and,
6. diminished or lost cultural identity, traditional authority and the potential for mutual help.

201. While most likely a minor issue with SFOC projects, it is nevertheless important to identify general steps needed to address livelihood restoration requirements.

Pre-construction

202. As part of the Entitlement Framework (EF) discussed in ECOP 11, para.184 and 185, measures to address livelihood restoration, including payments, retraining, replacement in kind and interim adjustment payments or reconstruction of lost assets need to be specified. When losing land or assets, most Pacific country citizens operate within traditional landownership (communal) rules which prohibit land sales, therefore making a land acquisition and livelihood restoration action involving land very difficult.

203. The executing agency needs to rely on the EF and link the loss to the best available measure defined in the EF, then discuss this

Box 3: Steps to Establishing Compensation when an Entitlement Framework is not available.

1. identify the affected persons and their assets;
2. establish a cut-o- date for resident status in project affected area
3. undertake and inventory of losses;
4. determine market value of affected land and fixed assets such as trees, fences, ponds;
5. define a timetable for disbursement and complete all payments on time and directly to the affected party .

with a party affected, make any necessary adjustment, then agree on the livelihood measure, the duration of the compensation measure and the timetable for implementation. Such an agreement is usually documented in a letter signed by the executing agency and the affected party.

204. The most common form of livelihood restoration sought will be money, despite this being the least preferred by the donors. Further, monetary compensation cannot be funded by donors, and as such comes from the national/state budget, making compliance monitoring difficult. Other forms of compensation involve longer term livelihood restoration schemes often of little interest to the affected people.

205. As part of the consultation process the executing agency and/or the implementing agency needs to describe the payment options, lay out the benefits over as short a time horizon as possible, then allow the affected party to choose.

206. Due to the nature of landownership where tribes or clans own lands, livelihood restoration compensation can easily become a divisive issue as multiple claimants appear at any time, well into the construction period, when compensation is no longer available. In some countries such as Papua New Guinea, executing agencies and claimants have developed a 'trust fund' mechanism, such that claimants agree to allow the project construction activities to commence while their ownership issues are addressed, knowing that funds are being retained until claims are resolved.

207. The livelihood restoration and compensations is mostly about financial compensation and about getting the issue resolved as early during the preconstruction period as possible. The executing agency therefore has a major duty to pin these issues down before construction mobilization begins.

Construction Period

208. Monitoring and recording the timely delivery of agreed-to livelihood compensation packages is the major task of the implementing agency. This is best achieved by confirming the delivery of the compensation measures on a case by case basis with the record of agreements in hand. This is easily achievable for most SFOC installations since the number of affected parties will be very small.

2.14 ECOP 14: Labour and Employment Practices

209. All construction work completed on land will be subject to national regional or state-level labour codes and standards. All contractors undertaking work funded by donors will have to be licensed and contract specifications should include the mandatory occupational health and safety clause. For the marine work the following clause should be added to the contracts;

“ For any work undertaken by contractors, and which is funded by a multilateral or bilateral donors, the International Labour Organization (ILO) standards addressing work on board ships will be adhered to: specifically the provisions defined in the convention on Accident prevention on Board Ship At Sea and in Port 2nd ed. 1996”¹⁸ will be implemented.

210. Further all contractors, whether undertaking shore-based work or the cable survey and laying work, should adhere to the following four employment practices and the executing agency should confirm with contractors that they will adhere to these practices (ILO's labour code) when hiring and engaging workers:

¹⁸ http://www.ilo.org/public/libdoc/ilo/1996/96B09_305_engl.pdf

- **Bonded labour**-All forms of bonded labour and forced labour including prison or debt bondage labour; lending of money (debt slavery), as defined by ILO Conventions 29 & 105, will not be permitted. labour,;
- **Hire, use or benefit from child labour**-Child labour (as defined by ILO Conventions 138 and 182) means that no workers under the age of 14 may be hired as general labours, and no workers under the age of 17 are to be hired for hazardous jobs such as work on scaffolding, on structures elevated above the ground, etc.. Withholding of remuneration for work done or identity papers retained by employers or outside recruiters, will be not be permitted on any work sites.
- **Equal treatment, equal opportunity**- The executing agency expects the contractors to hire workers on the basis of skill and ability to work. There must be equal treatment and equal opportunity (ILO Conventions 100 & 111, and ILO Code of Practice for HIV/AIDS 85) for all who seek employment. No discrimination based on race, caste, origin, religion, disability, gender, sexual orientation, union or political affiliation, or age; no sexual harassment.
- **Minimum wage**- The executing agency expects the contractor to pay all labourers and employees according to minimum wage standards as defined in the country where the work is to be undertaken.

211. In addition, the provisions of ECOP No. 12 need to be referenced and items concerning occupational health and safety integrated into the contract documents.

2.15 ECOP 15: Clearances and Approvals

212. For any donor-funded project to proceed there are two clearance and approval stages as follows:

2.15.1 Safeguard Documentation Clearance by the Regulatory Agency

213. The first and critical clearance is the approval and clearance of the environmental and social safeguard documentation by the national regulatory agency in charge: usually the Environmental Protection Agency, Environment Department of Ministry of Environment. These agencies usually approve the assessment as compliant and provide a certificate to proceed to construction. It is the duty of the executing agency to submit the environmental assessment document, together with any other material specified in the environmental assessment regulation of the country, for approval. At the same time, approvals and permits need to be obtained for construction on public lands, uses of land during construction, movement of utilities, etc.

214. As soon as the safeguard documentation has been reviewed by the regulatory agency, it and any regulatory agency comments should be submitted to the donor for their official review.

215. In practice this is often not possible since the regulatory agency has difficulty timing the review such that donor funding can be released quickly. More often the review is done in parallel with the donor agency, based on an informal agreement among the executing agency, the donor and the regulatory agency.

216. If a project has enough affected people requiring resettlement or land taking and an Involuntary Resettlement Plan is prepared, the land resources agency and donor must approve it and all compensation defined and agreed to between the executing

agency and the affected people, then delivered before the work can begin¹⁹. It is the executing agency's duty to follow this through.

2.15.2 Clearance By the Donor

217. The donors duties will be to provide a rapid turnaround with comments on any materials submitted, providing a practical review keeping in mind the project and the audience, and work with the executing agency to get the documentation approved quickly.

218. Large projects, i.e. those involving full environmental and social assessments, will require a period of public disclosure usually from 30 to 90 days after which the documentation becomes final. It is the donor's duty to fully inform/remind the executing agency of the project-specific disclosure requirements.

2.15.3 Collective Duties of the Executing Agency and the Donor

219. The mitigation and monitoring requirements defined in the safeguard documents must be reflected in the contract specifications between the executing agency and the donor and between the executing agency and the contractor. It is the duty of these two agencies, led by the executing agency, to ensure that the environmental and social management plan (ESMP) is embedded in the bid and contract documents in one way or another.

220. It is the duty of the donor to makes sure that this is place and give final approval to fund disbursement only after this inspection has been completed.

¹⁹ Construction can begin but only at location in the work area where compensation has been fully provided and displaced people have been relocated.

Appendix 11 Land acquisition process and voluntary land donation form

Securing Land Use

Prioritisation of Land Use Rights

Securing temporary land use rights for internet cable infrastructure shall be prioritized as follows:

- 1) Use Government land or electricity utility land as a priority wherever possible. If required, secure a temporary land lease under local laws / regulations. Otherwise, written agreements may be suitable.
- 2) Secure a temporary land lease with the land owner under local laws / regulations. This could be private land or community / custom land.
- 3) Voluntary land donation is an alternative option to secure temporary access to community / custom land.

Voluntary Land Donation

To meet World Bank safeguard policies, the principles governing voluntary donation are as follows.

Voluntary land donation refers to a process by which an individual or communal owner agrees to provide land or property for project-related activities. In general, voluntary land contribution is undertaken without compensation. Voluntary contribution is an act of informed consent, made with the prior knowledge of other options available and their consequences, including the right not to contribute or transfer the land. It must be obtained without coercion or duress.

Voluntary land donation requires a declaration by the individual, household or group that they are donating either the land or the use of the land, for a specific purpose and a specific duration of time. It is noted that the project proposes permitting voluntary *use* of land but not *transfer of ownership*. This must include both women and men. It is provided freely and without compensation, and is acceptable only if the following safeguards are in place:

- 1) Full consultation with landowners and any non-titled affected people at the time of site selection (including the consultation with both women and men)
- 2) Voluntary donations should not severely affect the living standards of affected people based on the World Bank definition
- 3) Any voluntary donation will be confirmed through written record and verified by an independent third party such as customary tribunal, non-governmental organization (NGO) or legal authority
- 4) Adequate grievance redress mechanism should be in place.

There will be no involuntary acquisition of land or loss of assets for this project.

The Voluntary Land Donation form should be completed and records kept to document the agreement.

Voluntary Land Donation Form

This form or an equivalent document is to be used to record the consent of landowners who offer private land for a community good activity. The essentials of voluntary donation are that the donors have been freely consulted prior to the donation, were not pressured or coerced, that the donation will not affect a significant proportion (more than 10%) of their productive assets, and that they have the right to refuse and to lodge a complaint if they have a grievance about the process.

Consent Form for Voluntary Donation¹

I/We: _____ male household head _____ female household head,
and/or person(s) exercising customary rights over land described as (legal description, GPS
coordinates if available)

_____ in

Village _____

Island _____

Province/Division/Country _____

hereby declare that I/we/the group are the owners/users of the land required for (description):

I/we are voluntarily donating the use of land and or/ land-based assets (land area, type of assets
/trees/crops etc) _____

for the purpose of: (specify activity)

We agree to this purpose from (date) _____ for as long as the purpose is served *or* until
(specify end date, typically the life expectancy of the facility) _____

I/we make this donation of My/Our own free will. I/We are waiving My/Our right to compensation
of any kind for the specified duration of the activity.

I/We affirm that we have been fully and freely consulted and informed about the activity prior to
agreement, have not been subject to any form of coercion, understand that I/we have the right to
refuse, and to seek redress for any grievance concerning this transaction.

Signed:

Male household head _____ /Female household head _____

Chief or Local Custom Authority _____

Representative of concerned Government Agency _____

Date: _____

¹ If leased land is to be used, this form may be adapted to record the agreement of both lessor and lessee