VALIDATION REPORT
DELTA BLUE CARBON - 1 – THE INDUS DELTA MANGROVE RESTORATION PROJECT PHASE 1

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Summary:

AENOR has carried out the validation of the Delta Blue Carbon - 1 – The Indus Delta Mangrove Restoration Project Phase 1 (DBC-1) under the VCS and CCB Programs. The project is an Afforestation, Reforestation and Revegetation (ARR) and Restoring Wetland Ecosystems (RWE) project implemented in the Indus River Delta, in the Sind Province, Pakistan. The DBC-1 is an initiative to promote climate change mitigation and adaptation, maintain biodiversity and create improved livelihoods, well-being and employment for forest-dependent communities in the Project Zone. A total area of 224,997 ha will be planted during the project lifetime. The project directly supports the livelihoods of 60 villages around the perimeter of the Project Area. These communities represent ca. 5,000 households and ca. 43,000 individuals.

The project start date is 19 February 2015 and will be operational until 18 February 2075. The estimated ex-ante net GHG emissions removals at validation for the 60-year project span are 142,050,139 tCO_2e, at an average of 2,407,629 tCO_2e/year.

The purpose of the validation was to determine the conformance of the project with respect to the VCS Version 4 and CCB Third Edition. The process was performed through a combination of desk review, interviews, and communications with relevant personnel. The scope was defined as follows: project design process; its baseline scenarios and additionality; the project area; the physical infrastructure, activities, technologies, and processes of the project; the GHG sources, sinks and/or reservoirs those are applicable to the project; the types of GHGs applicable to the project; the project crediting period; and the climate, community, and biodiversity benefits, including gold distinctions.

During the validation 7 CLs and 2 CARs were raised for VCS and 19 CLs and 1 CAR for CCB. All these issues where appropriately closed by means of corrections, more clear explanations, and other supporting documents.

Once all issues detected were appropriately resolved, AENOR carried out this final validation report and deems with reasonable level of assurance that the project complies with all of the validation criteria. The assessment team has no restrictions or uncertainties with respect to the compliance of the project with the validation criteria. Hence, the audit team concludes that the project complies with all the requirements set by the VCS Standard v4 and the Third Edition CCB Standards, and that the cumulative estimated ex-ante net GHG emissions reductions or removals of 142,050,139 tCO_2e over the crediting period (19-February-2015 to 18-February-2075) and the average of 2,407,629 tCO_2e/year have been quantified in accordance with VCS rules. AENOR confirms that the project has been validated for the Climate Gold, Community Gold and Biodiversity Gold distinctions in accordance with the Third Edition CCB Standards.

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1 INTRODUCTION

1.1 Objective

The purpose of the validation audit activity was to conduct an independent assessment of the project in order to determine whether the project complies with the validation criteria as set out in the guidance documents listed in Section 1.2 of this report, including the monitoring procedures and the climate, community, and biodiversity benefits; and that the GHG emission reductions and removals estimated ex-ante in the Project Description (PD) are materially accurate.

1.2 Scope and Criteria

The scope of the validation audit is to validate the design and emissions removals of the proposed project activity in Pakistan against the Verified Carbon Standard (VCS), the identified methodology and associated tools as well as to validate the climate, community, and biodiversity benefits in accordance with the criteria of the Climate, Community and Biodiversity Standards (CCB).

The scope was defined as follows:

- The project's design process.
- The project area.
- The project's baseline scenarios and additionality.
- The physical infrastructure, activities, technologies, and processes of the project.
- The GHG sources, sinks and/or reservoirs those are applicable to the project.
- The types of GHGs that are applicable to the project.
- The project crediting period.
- The climate, community, and biodiversity benefits, including gold distinctions.

Standard criteria: Criteria from the following documents were used to assess this project:

- VCS Standard v4.1
- VCS Program Guide v4.0
- VCS AFOLU Non-Permanence Risk Tool v 4.0
- CCB Program Rules v 3.1
- Third Edition CCB Standard v3.1

Unless otherwise indicated, the assessment was performed against the most recent version of the relevant VCS and CCB guidance documents.

1.3 Summary Description of the Project

The Delta Blue Carbon Project – Phase 1 (DBC-1) is an initiative to promote climate change mitigation and adaptation, maintain biodiversity and create improved livelihoods, well-being, and employment for forest-dependent communities in the Project Zone. The Project Zone is an area of 350,000 ha of the Sindh Indus Delta Region in the Thatta and Sujawal districts of Sindh Province in south-eastern Pakistan. The delta is a vast complex of tidal river channels and creeks, low-lying islands, mangrove forests and inter-tidal areas. The delta's mangrove forests are unique in being the largest area of arid climate mangroves in the world.

The project directly supports the livelihoods of 60 villages around the perimeter of the Project Area. These communities represent ca. 5,000 households and ca. 43,000 individuals. Over a number of decades, mangrove forests in the Indus Delta have experienced massive-scale deforestation and degradation due to a number of contributing factors. These include their use by the local communities as a source of fuelwood, fodder and open range grazing by livestock. The situation has been exacerbated by the reduced supply of fresh water and sediments into the delta area due to upstream activity.

In response to the threats to the delta, the Government of Sindh conceived DBC-1 project, a public-private partnership through its Forest and Wildlife Department and Indus Delta Capital Ltd, a climate and development focused private company. A total area of 224,997 ha will be planted during the project lifetime. All planting is done in partnership with local communities in the Project Zone. A ward and watch system is formalized through Mangrove Stewardship Agreements (MSAs) with various community groups, from which they derive further income. The primary method for the identification of stakeholders in DBC-1 was through participatory rural appraisals and comprehensive SBIA workshops.

The project's climate, community and biodiversity objectives include (see Section 2.1.11): upscaled mangrove reforestation, participatory planning and awareness raising, access to education, sustainable fisheries, access to safe drinking water and healthcare, improved protection and law enforcement, community-based business development and access to microfinance, sustainable energy development, training and capacity building of Sindh Forest Department, promotion of various gender development and income generating activities for women.

The project's climate benefits include the sequestration of an estimated 142,050,139 tCO2e over its lifetime of 60 years at an estimated average of 2,407,629 tCO2e annually. This is not a grouped project.

The project has been validated for the Climate Gold, Community Gold and Biodiversity Gold distinctions.

2 VALIDATION PROCESS

2.1 Audit Team Composition (*Rules* 4.3.1)

Name	Position in the team
Juan Carlos Gómez	Lead Auditor
Jose Luis Fuentes	Auditor
Elena Llorente	Technical Reviewer

Juan Carlos Gómez has more than 6 years of professional experience in climate change. He is a Forestry Engineer and holds Master in Sustainable Development and Corporate. He has developed his entire career in the field of climate change. He is an expert in the development of climate change mitigation and adaptation policies and has worked in LATAM countries and Africa, auditing REDD+ under VCS and CCB, and forestry projects under the CDM and JI.

José Luis Fuentes is the manager of the Climate Change Unit of AENOR. He is a Forestry Engineer and has a Master in Business Administration and a Post-Graduate in Environmental Management. He has more than 15 years of experience in auditing, consulting and training activities related to environmental and carbon management projects. Jose Luis has actively participated in the audit of international sustainable development projects in several carbon schemes, such as the Clean Development Mechanisms (CDM), Verified Carbon Standard (VCS), Climate, Community and Biodiversity Standards (CCB), Gold Standard (GS) and carbon footprints (ISO 14067 and ISO 14064). Jose Luis has extensive technical knowledge about the regulatory framework, policies and technical provisions emanating from the Paris Agreement, the Kyoto Protocol and the Conferences of the Parties.

Elena Llorente has a degree in Environmental Sciences and more than 15 years of professional experience in climate change and sustainability projects. She has worked for the UNFCCC, specifically in the management of carbon and climate change as an auditor and technical reviewer of projects and programs of mitigation activities under different types of carbon standards such as CDM and JI of the UNFCCC, VCS and Gold Standard.

The following table summarizes the experience of the team members in the assessment of climate, community development and biodiversity in similar projects.

Country	Project	Standard	Team member/ Role
Colombia	Bajo Calima y Bahía Málaga (BCBM) REDD+ Project	VCS&CCB	Jose Luis Fuentes/ Team leader and auditor Elena Llorente Pérez/ Auditor Juan Carlos Gómez/ Auditor
Colombia	Cajambre REDD+ Project	VCS&CCB	Jose Luis Fuentes/ Team leader and auditor Elena Llorente Pérez/ Auditor Juan Carlos Gómez/ Auditor
Colombia	Mutatá REDD+ Project	VCS&CCB	Jose Luis Fuentes/ Team leader and auditor Elena Llorente Pérez/ Auditor Juan Carlos Gómez/ Auditor
Colombia	Concosta REDD+ Project	VCS&CCB	Jose Luis Fuentes/ Team leader and auditor Elena Llorente Pérez/ Auditor Juan Carlos Gómez/ Auditor
Colombia	Sivirú, Usaragá, Pizarro y Pilizá (SUPP) REDD+ Project	VCS&CCB	Jose Luis Fuentes/ Team leader and auditor Elena Llorente Pérez/ Auditor Juan Carlos Gómez/ Auditor
Colombia	Carmen del Darién (CDD) REDD+ Project	VCS&CCB	Jose Luis Fuentes/ Team leader and auditor Elena Llorente Pérez/ Auditor Juan Carlos Gómez/ Auditor
Colombia	Rio Pepe y ACABA REDD+ Project	VCS&CCB	Jose Luis Fuentes/ Team leader and auditor Elena Llorente Pérez/ Auditor

Country	Project	Standard	Team member/ Role
			Juan Carlos Gómez/ Auditor
Colombia	Acapa – Bajo Mira y Frontera (ACAPA-BMF) REDD+ Project	VCS&CCB	Jose Luis Fuentes/ Team leader and auditor Elena Llorente Pérez/ Auditor Juan Carlos Gómez/ Auditor
Colombia	Proyecto de compensación de emisiones Conservación del bosque Galilea Amé.	NTC 6082/ Guía ES-I-CC-002	Juan Carlos Gómez/ Team leader and auditor Elena Llorente Pérez/ Technical reviewer
Colombia	Proyecto de Mitigación Forestal Bonanza Verde	NTC 6082/ Guía ES-I-CC-002	Juan Carlos Gómez/ Team leader and auditor Elena Llorente Pérez/ Technical reviewer
Colombia	Bonos Verdes Colombia Grupo Custodiar S.A.	NTC 6082/ Guía ES-I-CC-002	Elena Llorente/ Auditor Juan Carlos Gómez/ Technical reviewer
Colombia	Recuperación de suelos degradados con el uso de incentivos financieros en el Centro y Oriente de Colombia	NTC 6082/ Guía ES-I-CC-002	Juan Carlos Gómez/ Auditor Jose Luis Fuentes/ Technical reviewer
Colombia	Proyecto de Conservación PALAMEKU KUWEI REDD+	NTC 6082/ Guía ES-I-CC-002	Juan Carlos Gómez/ Team leader and auditor
Colombia	Proyecto de Conservación Tángara REDD+	NTC 6082/ Guía ES-I-CC-002	Juan Carlos Gómez/ Auditor
Colombia	Reforestación de suelos degradados por la ganadería y la agricultura en Antioquia.	NTC 6082/ Guía ES-I-CC-002	Juan Carlos Gómez/ Auditor Jose Luis Fuentes/ Technical reviewer
Colombia	Mitigación de Cambio Climático en áreas degradadas por ganadería “Fincas La Clara y Suebrá”.	NTC 6082/ Guía ES-I-CC-002	Elena Llorente Pérez/ Team leader Juan Carlos Gómez/ Technical reviewer
Colombia	Proyecto de Mitigación Forestal Resguardo Indígena Tikuna, Cocama y Yagua (TICOYA)	NTC 6082/ Guía ES-I-CC-002	Juan Carlos Gómez/ Auditor Elena Llorente Pérez/ Technical reviewer
Guatemala	REDD+ Project for Caribbean Guatemala: The Conservation Coast	VCS & CCB	Jose Luis Fuentes/ Project manager Juan Carlos Gómez/ Team leader and auditor
Indonesia	Rimba Raya Biodiversity Reserve Project	VCS & CCB & SD VISta	Jose Luis Fuentes/ Project manager Juan Carlos Gómez/ Team leader and auditor
Indonesia	Sumatra Merang Peatland Project (SMPP)	VCS & CCB	Jose Luis Fuentes/ Project manager Juan Carlos Gómez/ Team leader and auditor
Kenya	TIST Program in Kenya, CCB-001	VCS & CCB	Juan Carlos Gómez/ Team leader and auditor
Kenya	TIST Program in Kenya, VCS-005	VCS & CCB	Juan Carlos Gómez/ Team leader and auditor
Kenya	TIST Program in Kenya, VCS-006	VCS & CCB	Juan Carlos Gómez/ Team leader and auditor
Kenya	TIST Program in Kenya, VCS-009	VCS & CCB	Juan Carlos Gómez/ Team leader and auditor

Country	Project	Standard	Team member/ Role
Mozambique	Revegetation with fruit Trees in North Manica Province, Mozambique	VCS	Juan Carlos Gómez/ Team leader and auditor Jose Luis Fuentes/ Technical reviewer
Peru	Reduction of Deforestation and Degradation of Tropical Dry Forest in Piura and Lambayeque	VCS & CCB	Elena Llorente Pérez/ Auditor Jose Luis Fuentes/ Technical reviewer
Peru	Cordillera Azul National Park (PNCAZ) REDD+ Project	VCS & CCB	Elena Llorente Pérez/ Team leader and auditor Juan Carlos Gómez/ Auditor Jose Luis Fuentes/ Technical reviewer
Peru	Reduction of deforestation and degradation in Tambopata National Reserve and Bahuaja-Sonene National Park within the area of Madre de Dios region – Peru	VCS & CCB	Elena Llorente Pérez/ Team leader and auditor Juan Carlos Gómez/ Auditor Jose Luis Fuentes/ Technical reviewer
Peru	REDD+ Project in the Alto Huayabamba Conservation Concession (CCAH)	VCS & CCB	Elena Llorente Pérez/ Team leader and auditor Juan Carlos Gómez/ Auditor
Peru	Forest Management to reduce deforestation and degradation in Shipibo Conibo and Cacataibo indigenous communities of Ucayali region	VCS & CCB	Elena Llorente Pérez/ Auditor Jose Luis Fuentes/ Technical reviewer
Uganda	TIST Program in Uganda, VCS-CCB 010	VCS & CCB	Juan Carlos Gómez/ Team leader and auditor
Uruguay	Bosques del Uruguay II (BDU II) Afforestation through High Quality Timber in Grasslands Project	VCS	Juan Carlos Gómez/ Auditor
Zambia	Lower Zambezi REDD+ Project	VCS	Juan Carlos Gómez / Auditor
Zambia	Luangwa Community Forests Project	VCS	Juan Carlos Gómez/ Team leader and auditor

2.2 Method and Criteria

The validation was performed through a combination of document review and interviews with relevant personnel, as discussed in Sections 2.3 through 2.4 of this report. At all times, the project was assessed for conformance to the criteria described in Section 1.2 of this report. As discussed in Section 2.7, findings were issued to ensure that the project was in full conformance to all requirements.

A project specific Validation and Sampling Plan was developed to guide the validation auditing process to ensure efficiency and effectiveness. The purpose of the Validation and Sampling Plan was to present a risk assessment for determining the nature and extent of validation procedures necessary to ensure the risk of auditing error was reduced to a reasonable level. The Validation & Sampling Plan methodology was derived from all items in our validation process stated above. Specifically, the sampling plan utilized the VCS guidance documents and ISO 14064-3. Any modifications applied to the Validation and Sampling plan were

made based upon the conditions observed for monitoring in order to detect the processes with highest risk of material discrepancy.

The validation activities in which risks were assessed were the evaluations of the monitoring system (data flow, data control procedures, etc.) but mainly the quality of raw data as well as sources and the spreadsheet calculations. AENOR reproduced and verified 100% of sheets in the spreadsheet *DBC-1 PD CH3 Ex-ante_210529* for the crediting period 19-February-2015 to 18-February-2075 for the project area. The project boundary for the monitoring period were 100% checked using the GIS data. The carbon stock changes were also verified and crosschecked with values reported on the PD.

AENOR carried out a deep and meticulous review of the spreadsheet in order to verify the correct application of the methodology (formulae, equations) and checked that data required calculating the GHG removals were appropriately provided. Based on the assessment carried out, AENOR confirms with a reasonable level of assurance that the claimed ex-ante emission removals are free from material errors, omissions, or misstatements.

AENOR confirms that sufficient evidence was presented for the ex-ante estimated net anthropogenic GHG emission removals and that there is a clear audit trail that contains the evidence and records that validate the stated figure in this validation report since:

- Sufficient evidence available: The project participant has provided the 100% of data used in the calculations to achieve the final estimated amount of GHG emission removals.

- Nature of evidence: The raw data were collected from reliable sources. They are detailed in the project documents and have been provided to the validation team and were checked during the interviews.

- Cross-checked evidence: AENOR cross-checked the collected information through interviews with stakeholders and reproducing calculations.

Hence, AENOR confirms that the stated figures in the PD are correct and confirms that is able to certify the ex-ante net anthropogenic GHG removals based on verifiable and reliable evidence.

2.3 Document Review

A detailed review of all project documentation was conducted to ensure consistency with, and identify any deviation from VCS program requirements, CCB program requirements and the methodology (VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0). Initial review focused on the PD and included an examination of the project details, implementation design, stakeholder engagement, baseline scenario, additionality, community and biodiversity objectives, data and parameters, and estimation of GHG emission reductions and removals. Documents reviewed included monitoring SOPs, carbon rights contracts, economic analysis and documents, tree monitoring data, biomass and carbon calculation spreadsheets, and responses to Corrective Action Requests (CARs) and Clarifications (CLs).

The validation included a review of the PD, relative to the field conditions and interviews with project management staff, stakeholders, and beneficiaries. Modifications to the Validation and Sampling plan were made based upon the conditions observed in order to detect the processes with highest risk of material discrepancy.

The VCS AFOLU Non-Permanence Risk Tool v4.0 was used by the Project Proponent to assess overall project risk. The VVB reviewed the Non-Permanence Risk Report provided with the validation supporting documentation and confirmed that the Project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool. Each risk factor was thoroughly assessed for conformance. The final score was calculated to be 10%.

For a listing of all documents received from the client for this validation, see Appendix 1.

2.4 Interviews

Interviews were performed as part of the validation process in order to confirm and verify the information provided in the documents (see Appendix 1). The AENOR audit met with individuals with various roles in the project. This included a series of interviews with project management and on-site and in-country staff that support the mission of the project. Additionally, local community members and villagers were interviewed in relation to consultation processes, poverty reduction activities, etc. The following table summarizes the individuals interviewed and the main topics discussed.

Name	Organization/ Affiliation	Role/ Position	Topics
Nadeem Raza Khan	Indus Delta Capital	CEO	Project design, management, and implementation. Project monitoring.
Alamgir Khan Gandapur	Indus Delta Capital	Country Head Policy, Strategy and Business Development	Project design, management, and implementation. Project monitoring.
Rafilul Haq	Indus Delta Capital	Country Director Programs & Field Operations	Project design, management, and implementation. Project monitoring.
Amber Noor	Indus Delta Capital	GIS Specialist	Project design, management, and implementation. Project monitoring.
Irum Jhangir	Indus Delta Capital	CGD & Environmental Planner	Project design, management, and implementation.
Anwer Wajhat	Indus Delta Capital	C&D Assistant	Project design, management, and implementation.
Kamran Ali	Indus Delta Capital	C&D Assistant	Project design, management, and implementation.
Dr. Badar Jamil Mendhro	Sindh Forest Department	Secretary Forest and Wildlife Govt of Sindh	Project design, management, and implementation.
Riaz Ahmed	Sindh Forest Department	Chief Conservator of Forests- Mangroves & Rangelands (CCF)	Project design, management, and implementation. Project monitoring.
Arif Ali Khokar	Sindh Forest Department	Conservator of Forests Mangroves Management Circle (CF)	Project design, management, and implementation. Project monitoring.
Niaz Ali Soomro	Sindh Forest Department	Conservator of Forests Mangroves Management Circle (CF)	Mangrove restoration and conservation activities.

Name	Organization/ Affiliation	Role/ Position	Topics
Saeen Bux Shaikh	Sindh Forest Department	Divisional Forest Officer for the Coastal Forest Division- Left Bank (DFO-LB)	Project design, management, and implementation. Project monitoring.
Suleman Khaskhali	Sindh Forest Department	Range Forest Officer for the Coastal Forest Division- Left Bank (DFO-LB)	Project implementation. Mangrove restoration and conservation activities. Poverty reduction and improvement in community well-being activities
Mohammad Khan Jamali	Sindh Forest Department	Range Forest Officer for the Coastal Forest Division- Right Bank (DFO-RB)	Mangrove restoration and conservation activities.
Akram Ali	Sindh Forest Department	Forest Guard	Poverty reduction and improvement in community well-being activities
Sulaiman Sholani	Sindh Forest Department	Forests Guard	Project implementation. Mangrove restoration and conservation activities.
Abdul Ghafoor	Sindh Forest Department	Forests Guard	Mangrove restoration and conservation activities. Poverty reduction and improvement in community well-being activities.
Saeed Akhtar Baloch	Sindh Wildlife Department	Facilitator Ex-Conservator Wildlife Department	Conservation of Wildlife Habitat and Biodiversity.
Qazi Naeem	Sindh Wildlife Department	Deputy Conservator Sindh Wildlife Department	Conservation of Wildlife Habitat and Biodiversity.
Dr. M Zaheer Khan	Zoology Department Karachi University	Prof Retd. in wildlife Zoology and Co-chairperson of IUCN Commission on Eco-system Management Head of West and Central Asia Region Commission	Conservation of Wildlife Habitat and Biodiversity.
Dr. Aslam Jarwar	Sindh Livestock and Fisheries Department	Director Marine and Costal Fisheries in Sindh Livestock and Fisheries Department	Conservation of Wildlife Habitat and Biodiversity.
Ainy Zehra	Pakistan Standard and Quality Control Authority	Facilitator	Project implementation. Consultation process.
Dr. Kanwal Nazim	Freelancer	Facilitator	Project implementation. Consultation process.
Shakeel	Community	Community member	Consultation process. SBIA. Poverty reduction and improvement in community well-being activities
Mrs. Nawaz Machaii	Community	Community member	Consultation process. SBIA.

Name	Organization/ Affiliation	Role/ Position	Topics
Urs	Community	Community member	Consultation process. SBIA.
Nawaz Machaii	Community	Community member	Consultation process. SBIA.
Mrs. Najma	Community	Community member	Poverty reduction and improvement in community well-being activities
Mrs. Fatima	Community	Community member	Poverty reduction and improvement in community well-being activities
Muhammad Iqbal Channa	Community	Community member	Consultation process. SBIA. Poverty reduction and improvement in community well-being activities
Abdul Rahman	Community	Community member	Mangrove restoration and conservation activities.
Majeed Bhati	Community	Community member	Mangrove restoration and conservation activities. Poverty reduction and improvement in community well-being activities
Abdul Wahid	Community	Community member	Mangrove restoration and conservation activities. Poverty reduction and improvement in community well-being activities

Due to COVID-19 health restrictions, all interviews were carried out via videoconference. The interviews took place between May 25th and 27th, 2021.

2.5 Site Inspections

Due to the exceptional situation caused by the COVID-19 crisis and the travel restrictions established by governments for safety reasons, it was not possible to carry out a site visit as part of the validation process of the project.

In accordance with VERRA's COVID-19 Travel Guidance for Projects (dated 18 March 2020), an exemption of the site visit was requested on the ground of the crisis situation and considering that a reasonable level of assurance was achievable by other means. AENOR as VVB proposed to carry out a remote validation audit that ensured the achievement of the assurance level required by both the CCB and VCS programs.

The remote audit was based on the following auditing techniques:

- Document review and cross checks between the information provided in the in the PD and supporting information and evidence provided by the project proponent (PP), emissions calculations, GIS database, and supporting information and evidence provided.

- Review, based on the selected methodologies, tools and the other applied methodological regulatory documents, of the appropriateness of formulae and accuracy of calculations.

- Telephone, teleconference and/or e-mail interviews for the implementation of project activities and the elaboration of project's documents.

2.6 Public Comments (*Rules* 4.6)

The PD was submitted to a public comment period from 31 March 2021 to 30 April 2021. No public comment was received.

2.7 Resolution of Findings

All documentation provided by the PP was assessed against the applicable version of the relevant VCS and CCB guidance document. Several clarification requests (CL) and corrective action requests (CAR) were raised and submitted to the PP, which addressed them either by providing to the audit team with the requested information or by making the appropriate corrections. Updated versions of the documentation were submitted by the PP and the audit team reassessed them against the guidance documentation. This process was repeated iteratively until all CL and CAR were fully closed. Specifically, 7 CLs and 2 CARs were raised for VCS and 19 CLs and 1 CAR for CCB.

All findings issued by the AENOR audit team during the validation process have been closed. In accordance with Section 4.1.13 of the VCS Standard, all findings issued during the validation process and the inputs for their closure are described in Appendix 2 of this report.

2.7.1 Forward Action Requests

No Forward Action Request (FAR) has been raised during the validation process.

3 VALIDATION FINDINGS

3.1 Summary of Project Benefits

Section 1 of the PD provides information about the project benefits. The project includes the following 5 unique project benefits:

1. Improved protection from storm surges and other coastal hazards for communities and coastal infrastructure.
2. Increase in spawning places for fishes, shrimps, and other marine life.
3. Conservation of Historical and Cultural Heritage Sites and Cultural Artefacts.
4. Inspiration, knowledge and information services for artists, musicians, academicians, and researchers from mangrove forests and their ecosystems.
5. Aesthetic values and iconic seascapes.

In addition to these unique benefits, the project expects standardized benefits as i) GHG emission removals, ii) increase in forest cover, iii) training of community members, iv) employment creation, v) improvement of livelihoods, vi) health services improvement, vii) education access improvement, viii) water quality and/or access improvement ix) well-being improvement, and x) biodiversity conservation.

In opinion of AENOR, the expected benefits are credible and well defined based on the project nature, the designed project activities and on the supporting documents provided by PP and evidence received during the interviews to stakeholders carried by the audit team, records checked and field records. All the

estimated benefits are monitorable considering the monitoring plan developed by the PP and all the benefits that will not be monitored are appropriately labeled as Not applicable. The audit team deems that the estimated benefits by the end of the project lifetime reported on the PD are credible, since are based on the comprehensive planning of project activities and the experience of the implementation from the project start date to the date of issue of the PD.

3.2 General

3.2.1 Summary Description of the Project (G1.2)

The Delta Blue Carbon Project – Phase 1 (DBC-1) is an initiative to promote climate change mitigation and adaptation, maintain biodiversity and create improved livelihoods, well-being and employment for forest-dependent communities in the Project Zone. The Project Zone is an area of 350,000 ha of the Sindh Indus Delta Region in the Thatta and Sujawal districts of Sindh Province in south-eastern Pakistan. The delta is a vast complex of tidal river channels and creeks, low-lying islands, mangrove forests and inter-tidal areas.

The ARR/RWE Project Area is of High Conservation Value. The project directly supports the livelihoods of 60 villages around the perimeter of the Project Area. These communities represent ca. 5,000 households and ca. 43,000 individuals. Prior to project implementation, mangrove forests in the Indus Delta have experienced massive-scale deforestation and degradation due to a number of contributing factors over a number of decades. These include their use by the local communities as a source of fuelwood, fodder and open range grazing by livestock. The situation has been exacerbated by the reduced supply of fresh water and sediments into the delta area due to upstream activity.

In response to the threats to the delta, the Government of Sindh conceived the Delta Blue Carbon – Phase-1 (DBC-1), a public-private partnership through its Forest and Wildlife Department and Indus Delta Capital Ltd, a climate and development focused private company. The ARR/RWE project activity foresees total area of 224,997 ha of mangrove they will be planted during the project lifetime on state-owned land. All planting will be done in partnership with local communities in the Project Zone using native species: *Avicennia marina, Rhizophora mucronate, Ceriops tagal,* and *Aegiceras corniculatum*. A ward and watch system will be formalised through Mangrove Stewardship Agreements (MSAs) with various community groups, from which they derive further income.

The project's climate, community and biodiversity objectives include: upscaled mangrove reforestation, participatory planning and awareness raising, access to education, sustainable fisheries, access to safe drinking water and healthcare, improved protection and law enforcement, community-based business development and access to microfinance, sustainable energy development, training and capacity building of Sindh Forest Department, promotion of various gender development and income generating activities for women.

The project proponents (PP) are the Forest and Wildlife Department of the Government of Sindh and Indus Delta Capital Ltd. (IDC). Other entities involved include Silvestrum Climate Associates, Blue Ventures, Pollination Group and the Pakistan Forest Institute (PFI).

The project start date is 19 February 2015 and it is planned to have a lifetime of 60 years, until 18 February 2075. During this period, the project is expected to generate anthropogenic GHG removals equivalent to 142,050,139 tCO_2e, which equates to an annual average of 2,407,629 tCO_2e per year. Thus, it is a large project, as per VCS definitions. This is not a grouped project.

Based on the documents reviewed and the information gather through interviews with stakeholders, AENOR deems that the description in the PD is accurate, complete, and provides an understanding of the nature of the project.

3.2.2 Physical Parameters (G1.3)

Section 2.1.5 of the PD provides summary information on the topography, soils, climate, precipitation and hydrology, historical freshwater and sediment supply into the Indus Delta and vegetation area in the project area.

The audit team crosschecked the information provided with the original sources cited in the PD and considers it to be credible and complete.

3.2.3 Social Parameters (G1.3)

Section 2.1.6, Appendix 1, and Appendix 2 of the PD provide information on the social structure of the 60 villages, including distribution by gender, age, ethnic group, literacy rate, occupation, access to education, etc.

Additionally, section 2.1.6 provides information on the land ownership of the project area, which is classified as protected forest and is state property, and on the traditional land use, main economic activities and forest use, heath, education and sanitation conditions, poverty situation, migrations, and relevant historic conditions of the project zone.

After the review of all the provided information, the AENOR considers that the social parameters of the project area are appropriately characterized and described, and that the data provided are accurate. The audit team verified that the sources used by the PP are reliable and credible, such us the Bureau of Statistics

3.2.4 Project Zone Map (G1.4-7, G1.13, CM1.2, B1.2)

Section 2.1.7 of the PD includes maps in which the boundaries of the project zone are delimited, and which provide information regarding i) land cover at project start, ii) ARR planting cohorts, iii) villages' location, and iv) community and v) biodiversity HCVs' location.

Separate GIS files were provided to the auditor containing all spatial information. The audit team selected a random sample of points and verified that the information on the maps and GIS files was consistent with the geographic information from other sources (EarthExplorer, Google Hybrid). Additionally, AENOR verified the total area of the project and that there is no overlapping with any other project in the country.

It is the opinion of AENOR that the project zone map is accurate and complies with the requirements of the CCB Standard.

3.2.5 Stakeholder Identification (G1.5)

According to section 2.1.8 of the PD, the PP carried before project start a spatial analysis of the project zone to determine the location of all of the communities near the areas to be restored by the project. A comprehensive participatory rural appraisal with each community identified in the analysis was then conducted by project staff. In addition, Social and Biodiversity Impact Assessment (SBIA) workshops were held in strategic locations in the Project Zone with key representatives of community groups.

The audit team review the reports of the rural appraisals and SBIA elaborated by the PP and crosschecked them with the information described in the PD. The process for identifying stakeholders was also discussed with project management and project staff and the participation on appraisals and workshops was confirmed by the community members interviewed by the audit team. Considering the evidence provided by the PP and the information gathered during the interviews, AENOR believes that the approach of the PP to identify the stakeholders was appropriate and that the rationale supporting it was fitting to the local context of the project. Therefore, AENOR deems that process has properly identified all stakeholders who might be impacted by the project activities.

3.2.6 Stakeholder Descriptions (G1.6, G1.13)

The project zone includes 60 villages, with a total of about 4,911 households and a population of 42,483 people. Based on the stakeholder analysis performed during the SBIA workshops, the PP has divided the stakeholders in the following categories:

- Stakeholders benefiting from status quo (pre-project situation):
  - Money lenders/creditors
  - Livestock grazers/fodder collectors
  - Upstream dwellers
  - Fuelwood gatherers
  - Employers
- Stakeholders adversely affected by status quo (pre-project situation);
  - Community in general including both present and future generations
  - Government and local authorities
  - Youth and women
  - Workers and jobseekers
  - Borrowers and debtors
  - Fishermen

The audit team analyzed the rationale used by the classification of stakeholders, based on three focal issues:

1) Mangrove forest degradation due to unregulated and unsustainable use.
2) Poverty and impoverished community well-being.
3) Continued and accelerated wildlife and habitat loss and fisheries degradation.

The PP identified who and how benefits or losses due to the direct factors responsible of this three focal issues in collaboration with the community members participating in the workshops. This process as allowed, in opinion of AENOR, to accurately identify stakeholder groups within the community and how was their situation prior to the project and how they are affected by the project. The audit team assessed all the information provided in the SBIA workshops' reports and was able to crosscheck its results with community members interviewed, as well as with field project staff.

3.2.7 Sectoral Scope and Project Type

The project belongs to the Sectoral Scope 14 Agriculture, Forestry and Other Land Use (AFOLU) and it is a combination of Afforestation, Reforestation and Revegetation (ARR) and Restoring Wetland Ecosystems (RWE) project type, based on project activities that increase carbon sequestration by establishing, increasing or restoring native mangrove vegetative cover through the planting, sowing or human-assisted natural regeneration of degraded tidal wetland. Therefore, the project is eligible in accordance with Appendix 1 of the VCS Standard v4.1.

3.2.8 Project Activities and Theory of Change (G1.8)

The PD provides in its section 2.1.11 the project activities, technologies and main components and their expected outputs and their contribution to achieving the general climate, community, and biodiversity goals of the project. The key project activities described are:

i) Upscaled ARR.

ii) Participatory planning and awareness raising.

iii) Access to education for all.

iv) Sustainable fisheries.

v) Access to safe drinking water and healthcare.

vi) Improved protection and law enforcement

vii) Community-based business development and access to microfinance.

viii) Sustainable energy development.

ix) Training and capacity building of Sindh Forest Department.

x) Promotion of various gender development and income generating activities for women.

This activities were defined by the PP in collaboration with local stakeholders in the SBIA to tackle the three focal issues (key problems) identified in those same workshops: 1) mangrove forest degradation due to unregulated and unsustainable use, 2) poverty and impoverished community well-being, and 3) continued and accelerated wildlife habitat and biodiversity loss and fisheries degradation. As described by the Theory of Change of the project, each of the aforementioned activities will produce outputs, outcomes and impacts towards achieving at least one of three targets: 1) wetlands restored and existing forests conserved, 2) poverty reduced and community well-being improved, and 3) biodiversity and wildlife habitat conserved and enhanced.

Based on the nature of the activities described in the PD, the documents provided by the PP and the information gathered by the audit team through the interviews to the stakeholders on the impacts and results of the project activities, it is the opinion of AENOR that the theory of change developed by the PD is accurate, complete, and provides an understanding of the nature of the project and how it will achieve its climate, community, and biodiversity goals.

3.2.9 Sustainable Development

According to the PD, the project contributes to achieving the Pakistan nation development agenda. Section 2.1.12 provides the following sustainable development topics to which the project contributes:

- No poverty, decent work and economic growth (SDG 1, 8).
- No hunger (SDG 2).
- Good health and well-being, clean water and sanitation (SDG 3, 6).
- Quality education (SDG 4, 10).
- Life below water (SDG 14).
- Life on land (SDG-15).
- Gender equality (SDG 5, 10).
- Affordable and clean energy (SDG 7).
- Climate action (SDG 13).

AENOR assessed these contribution claims to sustainable development through the review of the project design document, as well as the stakeholder's consultation. Based on the projects' theory of change, the activities planned and their expected outcomes, the audit team considers the sustainable development contributions claims as credibly.

3.2.10 Implementation Schedule (G1.9)

The project start date is 19 February 2015, day on which became effective the contractual agreement between Indus Delta Capital Limited and The Sindh Forest Department for mangrove conservation and restoration. The project is expected to have a lifetime of 60 years, until 2075.

Section 2.1.13 of the PD provides information on key dates of project implementation, including large-scale ARR/RWE and community participation (from 2015), community development activities (from 2018) and upscaling of plantations and community livelihood improvement interventions (2021-2027).

Considering the nature of the project, its activities and its expected outcomes, it is the opinion of AENOR that the implementation schedule presented in the PD is appropriate and realistic for the project.

3.2.11 Benefits Assessment and Crediting Period (G1.9)

The benefit assessment period and the crediting period of the project is the same, from 19-February-2015 to 18-February-2075 (60 years).

According to Section 3.8.3 of the VCS Standard, the crediting period of AFOLU projects will have a minimum of 20 years and a maximum of 100 years. Therefore, the project activity is in line with the length of the crediting period and it has the option to renew more times.

3.2.12 Risks to the Project (G1.10)

According to the information provided by the PP, the main risks to the project's benefits are human induced. Specifically, the unsustainable and unregulated use of mangrove forests, along with the failure of restoration work. Measures protected the mangrove forest have been defined through participatory processes (SBIA workshops) and are specific project activities (i.e., participatory planning and awareness raising, improved protection and law enforcement, etc.). The main mitigation activity against failure in plantation is through ongoing protection and through community-led Mangrove Stewardship Agreements, which ensure that restoration work is protected and allowed to develop and establish over the project's lifetime.

As for natural risks, the PD argue that the Indus delta region is not susceptible to severe natural destructive events and that they pose a minor threat to the expected climate, community, and biodiversity benefits. The major natural risk is associated with long-term sea level rise due to climate change. Thus, the ecological effects due to rapid sea level rise and associated coastal inundation and erosion have been considered in the carbon accounting of the project.

In addition to this risks, the PP has developed a Non-Permanence Risk Report to estimate the risks on climate benefits in accordance with the VCS AFOLU Non-Permanence Risk Tool v 4.0.

AENOR deems that the PP correctly identified the risks to the project benefits and has designed actions to reduce or diminish the negative impacts of these risks in the benefits on the climate, community and biodiversity.

3.2.13 Benefit Permanence (G1.11)

The PD states in section 2.1.19 Benefit Permanence that project activities are designed and being implemented to ensure sustainable community benefits. Specific measures have been developed to maintain and enhance the project benefit beyond its lifetime:

- Institutionalization of main Project interventions into regular functioning of Sindh Forest, Wildlife, Fisheries and other relevant departments
- Capacitating and engaging community organizations
- Putting in place well-established and functional linkages with other partner organizations
- Sustainable management of restored ecosystems and stable and increased availability of various ecosystem services
- Diversification and increase in incomes of local communities
- Decrease in cost of living
- More efficient and effective allocation and utilization of various coastal and marine as well as financial resources at the community level
- Increase in adaptive capacity and resilience to deal with various types of shocks
- Reducing threats to mangrove lands, biodiversity and institutionalizing biodiversity conservation and sustainable fishing through various institutional arrangements with local communities

AENOR considers that the activities planned by the PP are appropriate to ensure project benefits permanence beyond the project lifetime.

3.2.14 Financial Sustainability (G1.12)

The PP are organizations with capacity to generate revenues from carbon credits and used them to finance project activities. Detailed financial models and budget of the project have been provided to the audit team, which has been able to confirm the statements made by the PP regarding the financial sustainability of the project. No evidence of any form of corruption or illegality was found during the review of the provided evidence and the interviews by the audit team.

3.2.15 Grouped Projects

This is not a grouped project.

3.2.16 Land-Use Scenarios without the Project (G2.1)

The PP describes in section 2.2.1 three potential land-use scenarios without the project:

1. Continuation of the pre-project land use: degraded mangrove habitat characterized by a near absence of sources of mangrove propagules, high salinity, and trampling of and damage to any newly emerging natural seedlings/natural regeneration by camels/other livestock and browsing by camels/other livestock and lopping of branches of mangroves and mangrove propagules for fodder and fuelwood purposes.

2. Natural regeneration of mangroves within the project boundary.

3. Mangrove reforestation within the project boundaries without being registered as a VCS project.

It is the opinion of the AENOR that the PD considers a realistic range of potential scenarios and describes them properly, including potential barriers.

3.2.17 Most-Likely Scenario Justification (G2.1)

The PP, as required by the methodology VM0033, uses the CDM *Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities Version 01* to identify the baseline scenario, which is the most-likely scenario without the project. After applying the tool to the three scenarios enumerated in the previous section, the continuation of the pre-project scenario is the most-likely land use scenario without project, since it is the only one without any current barrier identified. More detailed regarding the barrier analysis is included in section 3.1.4 of the PD and section 3.3.4 of this report.

3.2.18 Community and Biodiversity Additionality (G2.2)

According to the information provided in the PD, in the absence of the project, restoration and conservation work would not be implemented due to lack of funds and no environmental and community livelihood benefits would be realized. Continued degradation of the natural resource base on account of unsustainable resource and land use practices would persist and poverty in the area would increase over time along with

biodiversity degradation. As a result, communities would remain vulnerable to various economic, social, ecological and climate change related shocks and will lack the needed resilience.

Interviews with Government officials (Sind Forest Department, Sind Wildlife Department, Sindh Livestock and Fisheries Department) corroborated the low probability of governmental institutions to deliver services and benefits to communities and biodiversity in a similar extent to those that will be generated by the project. Based on this evidence, it is the opinion of AENOR that the community and biodiversity benefits described in the PD would not have occurred in the absence of the project.

3.2.19 Stakeholder Access to Project Documents (G3.1)

The PP will make publicly available hard copies in English and Sindhi of the full PD, the monitoring results and reports, and the feedback and grievance redress at the project offices in the UK and Pakistan. The PD will also be posted on the project's website at: www.indusdeltaredd.com. An executive summary in Urdu and Sindhi will be posted in public places in the Project Zone, along with a contact email address. A WhatsApp group will be set up and key community contacts added to the group to receive regular bulletins and allow them to give their feedback.

Interviews with community members have confirmed that project documents have been already shared and that WhatsApp is a common tool use to distribute and access project information. Numerous informational meetings have been carried out, as part of participatory rural appraisals and consultations process. This has backed by the evidence provided by the PP in form of meeting reports and has been confirmed by community representatives interviewed by the audit team. Thus, it is the opinion of AENOR that the PP has made project documentation accessible to communities and other stakeholders in accordance with the requirements of indicator G3.1 of the CCB Standard.

3.2.20 Community Costs, Risks and Benefits (G3.2)

The project has conducted numerous surveys and studies in the area and a suite of community meetings that focused on Free, Prior and Informed Consent. These interactions and meetings also served as and provided the basis for establishing and communicating the project's costs, risks and benefits with the communities. As described in section 4.5.3 of the PD, 60 meetings have been held with community members throughout the project zone to discuss the risks for communities to participate in the project. These discussions focused on how the project would affect the income, livelihoods and overall well-being of the communities, and what will be the roles and responsibilities of communities for them to be eligible as project partners and getting support in terms of various community development activities.

In addition, two project sub-offices have been established in the project zone, which serve as information hubs for the project and are open to all community members and stakeholders who wish to gain information about the project and/or submit comments or grievances.

The documental evidence provided, as well as the statements of the community members interviewed by the audit team, confirm these statements reported in the PD. Thus, AENOR deems that the PP has provided the relevant and adequate information about potential costs, risks and benefits of the project to the local stakeholders in a form they understand and in a timely manner prior to any decision they may be asked to make with respect to participation in the project.

3.2.21 Information to Stakeholders on Validation and Verification Process (G3.3)

As described in sections 2.3.1 and 2.3.2 of the PD, the project has a community message board at each of the two key locations – Keti Bandar and Shah Bandar, in order to reach all community members when sharing important project information. A poster/notice in Urdu and Sindhi advertising the public comment period for the PD was posted in communities throughout the Project Zone. It included details on how a comment can be made to the CCB. The project's community outreach workers also contacted members through their local networks in the Project Zone and informed them of the notice period for comments. This information was confirmed by the project staff and community members interviewed.

3.2.22 Site Visit Information and Opportunities to Communicate with Auditor (G3.3)

Due to the COVID-19 pandemic it was not possible for the audit team to carry out a site visit. Instead, video calls were arranged with different stakeholder groups defined by the audit team. In addition The project has actively communicate to community members and stakeholders about the start of the public comment period and the methods with which they could submit comments on the project as well as how to view full project documentation .This has been accomplished by communicating the project public comment period and remote validation process (necessitated by the COVID-19 pandemic and the resultant travel restrictions imposed by governments) dates to previously identified stakeholders, community leaders, leaders of various community groups and public officials.

3.2.23 Stakeholder Consultations (G3.4)

According to the PD, one of the PP, the Sindh Forest Department, has been interacting and maintaining a regular dialogue with stakeholders in the coastal area communities for more than 30 years. In addition to those regular contacts, the process of community and stakeholder identification was further supplemented by a series of interviews conducted by project staff at the community level since the launch of the project. In total for the FPIC process and other project related activities, more than 45 meetings have been held since 2013 which have been attended by hundreds of community members from the Project Zone. Building on this extensive knowledge base several SBIA assessments were conducted with all key stakeholder representatives in strategic locations throughout the Project Zone to maximize coverage and participation.

Extensive documental evidence has been provided by the PP, including meeting reports and results of the consultation process. AENOR deems that the stakeholder consultation practices carried out by the PP ensures the participation of all community groups and other stakeholders in the design and implementation of the project, respecting their values, customs and institution, as well as optimizing community benefits. Based on the evidence provided and the testimonies of community members and representatives directly consulted by the audit team, AENOR considers that effective consultation has been conducted by the PP to fulfil the requirements of G3.4 from the CCB Standard v3.1, directly with communities and other stakeholders or through their legitimate representatives, and that this consultation has been effective in allowing stakeholders to influence the project implementation. The stakeholder input has been properly documented and it is appropriately reflected in the project's documents.

3.2.24 Stakeholder Consultation Channels (G3.5)

Consultation channels have been adapted to the heterogeneity of stakeholders in the project zone (language, literacy, etc.). The PP has developed a Project Communication Strategy to share information with and get feedback from the various stakeholder groups, using roundtables and forums, establishment

of village development committees and women groups, Mangrove and Biodiversity Conservation Stewardship Committees, Fisheries Stewardship Committees, formation of dedicated stakeholders virtual groups (for sharing voice and text messages in Sindhi and Urdu for sharing information about project and getting community members and other stakeholders feedback), community motivators and activists, as well as all the channels as given in and made use of in the project feedback and grievance redress mechanism of the project.

Considering the many channels used by the PP and the evidence provided in the form or reports, as well as the statements made during the interview process by community stakeholders, it is the opinion of the audit team that all consultations and participatory processes of the project have been undertaken directly with communities and other stakeholders or through their legitimate representatives, ensuring adequate levels of information sharing with the members of the groups, as required by indicator G3.5 of the CCB Standard.

3.2.25 Stakeholder Participation in Decision-Making and Implementation (G3.6)

The project has been able to demonstrate the participation of stakeholders in project decision-making and implementation through SBIA workshops, in which focal issues were identified and project activities were defined. It is the opinion of AENOR that the communication and consultation plan as described along the PD is being implemented and that it enables effective participation in culturally appropriate and gender sensitive manner with all communities.

3.2.26 Anti-Discrimination Assurance (G3.7)

The project is committed to the fair treatment and equal opportunity for all stakeholders, community members and employees. The project has drafted an anti-discrimination and non-harassment assurance document outlining its full policy, which has been provided to the audit team. This document ensures compliance with CCB Standards and aims to avoid any kind of discrimination or harassment based on gender, race, religion, and sexual orientation.

During the validation process, the audit team did not find any evidence that the project is engaging in any form of discrimination. AENOR checked and confirms that the PP has developed specific measures to prevent discrimination and to guarantee equal opportunities for community members, including women and vulnerable and/or marginalized people.

3.2.27 Feedback and Grievance Redress Procedure (G3.8)

The PP has developed a Feedback and Grievance Redress Management System (FGRMS), described in a SOP and summarized in section 2.3.12 of the PD. The system is based in seven steps: 1) Engage Community Member and Receive Grievance; 2) Carry out a Preliminary Assessment; 3) Respond to Grievance; 4) Investigate and Resolve; 5) Conclusion; 6) Further Action; and 7) Monitoring and Evaluation.

The project as an appointed dedicated Grievance Manager (GM), which has the overall responsibility for grievance redress and documenting. Hard copies of the FGRMS SOP are available at the project offices in the UK and Pakistan. Additionally, executive summaries are posted in public places in the project zone. The use of mobile phones (WhatsApp) has been set up has the main communication channel to receive feedback.

AENOR is able to confirm that the grievance procedure described in the PD complies with the requirements of G3.8 of CCB Standard v3.1. No evidence of existing grievances was found during the validation process.

3.2.28 Worker Training (G3.9)

The PP has developed a training and capacity building plan that is summarized in Appendix 5 of the PD. The plan includes the capacities to be developed, the target of the training sessions (employees, community members, etc.), the expected outcome and the planned duration of each of them.

After reviewing the training plan and the project activities, it is the opinion of the audit team that the PP has properly identified the capacity build needs for the successful implementation of the project activities described in the PD and for the achievement of the expected project benefits. The training plan is clear and well defined and complies with the requirement of building locally useful skills and knowledge to increase local participation in project implementation required by G3.9 of the CCB Standard.

3.2.29 Community Employment Opportunities (G3.10)

The PP has developed an Equal Employment Opportunity (EEO) policy, which beside prohibiting any kind of discrimination, sets out the procedure for selecting community members to fill in different positions, ensuring equity and diversity. According to the PD, future job positions in the project's central office will be openly advertised through the project office within the Project Area. However, due to poor literacy and poor access to education in the Project Zone, the majority of the local workforce is only qualified to carry out manual labor jobs. The project is committed to only employing Project Zone residents and contractors to implement the large scale ARR activities in the Project Area. This EEO policy document also explains that where relevant and needed, various measures are designed to ensure community members, including women and vulnerable and/or marginalized people, are given a fair chance to fill positions for which they can be trained.

Based on the review of the EEO policy and the interviews with project staff and community member representatives, it is the opinion of AENOR that the project is committed to provide equal employment opportunities to all community members, prioritizing those from the project zone.

3.2.30 Relevant Laws and Regulations Related to Worker's Rights (G3.11)

The PD cites specific articles of the Constitution of Pakistan related to labor rights. Also, Laws relating to industrial relations; Laws relating to employment and service conditions; Laws relating to occupational safety and health; Laws relating to human resource development; Laws relating to labor welfare and social security of the country will be embodied in the employment contracts of workers.

At the provincial level, Sindh Province also has Labor Department, which ensure implementation of the country's and province's labor laws, regulations and policies and protect labor rights. The PP being a governmental organization (Government of Sindh Forest and Wildlife Department) and a socially responsible private sector company (Indus Delta Capital Ltd.) will ensure that any relevant international conventions or government laws and regulations (provincial and national) are fully followed. Workers will be informed about their rights at the point of their employment during the employee orientation.

AENOR did not detect incompliances checking the documents provided. Thus, the audit team deems that the project fulfills with CCB requirements related to labor rights.

3.2.31 Occupational Safety Assessment (G3.12)

The PP has developed a health and safety plan (Fieldwork Safety Guide) to address occupation safety. In this guide potential occupational risks are identified, including hazards related to the environment, working with people, use of vehicles, etc., and measures and procedures are defined to eliminate or minimize them. During the employee orientation sessions, workers are informed about the potential safety risks of their job and of methods to mitigate the risks. Additionally, training in safe working practices, first aid training for some staff members as well as the enforcement of requirements for safe handling of equipment and other materials is developed.

It is the opinion of AENOR that occupational risks related to the project have been properly identified and assessed by the PP, that risks have been minimized by the development of mitigation measures and that workers are properly informed regarding both risks and preventing actions.

3.2.32 Project Governance Structures (G4.1)

The project is developed and managed by the Government of Sindh and Indus Delta Capital Limited, who have entered into public-private partnership arrangements through a 60-year agreement, renewable up to 100 years. Section 2.4.1 of the PD lists the specific roles and responsibilities of the two organizations. The role of other entities is also described in this section, including the Pakistan Forest Institute, Silvestrum Climate Associates, Blue Venture and Pollination Group.

Based on the reviewed documents provided by the PP and the statements made by the different project stakeholders during the interviews, it is the opinion of AENOR that the description of project governance structures presented in the PD is factually realistic and that the roles and responsibilities described are accurate.

3.2.33 Required Technical Skills (G4.2)

The PP has identified the following technical skills required to implement the project successfully: understanding of the science and art of ecosystem restoration, forest and biodiversity conservation, geographic information systems and remote sensing, biomass sampling, coastal ecology and GHG accounting, experience implementing community and livelihood development programs, effective forest protection enforcement and monitoring, and overall project management.

Based on the specific nature of the project and its activities, it is the opinion of AENOR that the PP has properly documented the key technical skills required to implement the project successfully.

3.2.34 Management Team Experience (G4.2)

Section 2.4.2 of the PD provides a description of the experience and technical capacity of each of the entities involved in the project. Section 2.4.3 includes a summary of the experience of each of the key management staff. In addition, the PP provided the audit team with the complete CVs of the management staff.

Based on the review of the evidence provided, it is the opinion of AENOR that the management team has the appropriate expertise and prior experience implementing land management and carbon projects at the scale of this project.

3.2.35 Project Management Partnerships/Team Development (G4.2)

No project management partnership is required for the project.

3.2.36 Financial Health of Implementing Organization(s) (G4.3)

Both PP entities have at their disposal the needed financial resources for initial project implementation and carbon asset development. Indus Delta Capital Limited has invested the required funds and resources from the private sector to fulfil its contractual obligation to the project. The Provincial Forest Department, Government of Sindh receives an annual budget support from the government for implementation of its development portfolio including this project.

The PP has created a detailed financial model, provided to the audit team, for the development and financial management of project, in which predicted credit sales and estimated annual budget provides sufficient cash flow to sustain the project through its lifetime. After reviewing the financial model, the audit team considers that it is credible.

Based on these evidence, AENOR deems that both PP entities have been able to demonstrate their financial health.

3.2.37 Avoidance of Corruption and Other Unethical Behavior (G4.3)

The PP has developed several policies prevent any kind of corruption and other unethical behavior in relation to the project, including:

- Avoidance of Corruption and Unethical Behavior Policy: regulates aspects such as anti-bribery policy, facilitation payments, gifts and hospitality, charitable donations, and political donations.
- Ethical Policy: contains provisions related to practice responsible corporate behavior, including elimination of bribery and corruption.
- Hospitality and Gifts Policy: describes in detail which given and accepted gifts and hospitability are acceptable or are prohibited to employees.
- Whistleblowing Policy: describes the disclosure procedure of information related to the commitment of illegal activities.

The audit team reviewed all the aforementioned policies considers that the project management has defined and set a strong and comprehensive framework to prevent the commitment any kind of illicit acts by project staff. No evidence of any form of corruption or illegality was found during the review of the provided evidence and the interviews by the audit team.

3.2.38 Commercially Sensitive Information (*Rules* 3.5.13 – 3.5.14)

The PP considers as sensitive and not to be publicly disclosed all information that the Government of Sind is required by law to keep confidential, as regulated by section 10. (1) of Sindh Act No. XV of 2017 relating to Right to Information.

AENOR has verified the provisions of Sindh Act No. XV of 2017 and is able to confirm that the information not to be disclosed meets the VCS Program definition of commercially sensitive information and that it is

not related to the determination of the baseline scenario, demonstration of additionality, and estimation and monitoring of GHG emission reductions and removals of the project.

3.2.39 Statutory and Customary Property Rights (G5.1)

Section 2.5.1 of the PD describes the statutory and customary rights in the project zone, which are covered by the Constitution of Pakistan and applicable Land Laws and Forest Law. The description includes the provisions of laws regarding land ownership, which compromises state owned land, private owned land, and village common land. Mangrove forest in the project area have been declared as Protected Forests and their ownership vests in the state. Private individuals have no legal rights to mangroves or any of their produce unless specifically permitted by the government. There are also no customary laws prevailing in the project area that in any way hinder the implementation of project activities

Based on the information provided, AENOR deems that the PP has properly mapped the tenure, use, access, and management rights to lands in the project zone.

3.2.40 Recognition of Property Rights (G5.1)

Land in the project area is surveyed, demarcated and has been titled and all property and property rights clearly recognized and delineated. The Sindh Forest Department (PP) and the project worked with communities to clarify the project area boundaries and rights of various stakeholders to land, territories, and resources. The rights of the stakeholders are defined and properly documented and based on these recognized and enforceable under the law.

As mentioned in the previous section, the project area is state owned protected forest. Private individuals have no legal rights to mangroves or any of their produce unless specifically permitted by the government.

3.2.41 Free, Prior and Informed Consent (G5.2)

The project does not encroach uninvited on private property, community property, or government property. The entirety of the project area is state owned protected forest land, managed by the Sindh Forest Department (PP). Thus, no property rights will be or are affected by the project nor restitution or compensation is to be allocated to any party.

3.2.42 Property Rights Protection (G5.3)

As described in the PD, project maps and boundary demarcation allow the communities neighboring the project area to understand their spatial positions in relation to the it, and to be able to plan their future land use within their village boundaries without disputing other village territories or affecting the project area. The project does not require involuntary removal or relocation of communities or any activities important for their livelihood and culture

3.2.43 Illegal Activity Identification (G5.4)

Section 2.5.5 of the PD states that the project area are protected forests, and thus it is under the Forest Act 1927, which describes in section 33 the illegal activities: logging, clearing for cultivation, fires, etc. According to the PP, some of these activities do occasionally occur. To prevent illegal activities in the area, project activities include stricter law enforcement through greater surveillance and vigilance and more effective

patrolling by Forest Department staff. It has also entered into Mangrove Stewardship Agreements and strengthened community organizations.

These mitigation measures are direct project activities, and their implementation is expected to minimize illegal activities within the project area. The project does not and has not benefited from any illegal activity. None of the expected project benefits described in the PD are or will be derived from illegal activities.

3.2.44 Ongoing Disputes (G5.5)

There is no evidence of ongoing disputes over rights to lands, territories and resources nor records of disputes that were resolved during the last twenty years.

3.2.45 National and Local Laws (G5.6)

The PD lists all the relevant national and local laws and regulations in section 2.5.7. Evidence of its fulfilment is considered complete. AENOR did not detect during the validation process any incompliances related to laws and regulations.

3.2.46 Approvals (G5.7)

The project area is comprised completely of protected forests, which are state owned lands. The Government of Sindh through an agreement has given its approval for implementation of this project. As per agreement between Government of Sindh Forest Department and Indus Delta Capital Limited, the proponents have obtained the FPIC of the local communities. Therefore, approvals for the project both at the state level as well as community level are present., which have been reviewed and verified by the audit team.

3.2.47 Project Ownership (G5.8)

The Project Area is legally state-owned property and has been declared as Protected Forests under section 29 of the Pakistan Forest Act 1927 and trees. Trees in these Protected Forests have been declared as Reserve Trees under section 30 of the same Act. The ownership of mangroves and all other forest produce thus vest in the state through the Sindh Forest Department. An enforceable and irrevocable agreement was signed in 2015 between Indus Delta Capital and the Government of Sindh in its capacity as holder of the statutory property right in the project area.

Based on the VCS Standard v4.1 Section 3.6.1, the project has demonstrated that the PP has ownership and the legal right to control and operate project or program activities under subsection 4: *Project ownership arising by virtue of a statutory, property or contractual right in the land, vegetation or conservational or management process that generates GHG emission reductions and/or removals*.

3.2.48 Management of Double Counting Risk (G5.9)

The project has not and does not seek to participate in any form of social or environmental credit generation/trading program or mechanism.

3.2.49 Emissions Trading Programs and Other Binding Limits

The project does not and will not participate in any emission trading or other binding limit program or mechanism.

3.2.50 Other Forms of Environmental Credit

The project has not and does not seek receiving another form of GHG-related environmental credit, including renewable energy certificates.

3.2.51 Participation under Other GHG Programs

The project has not and will not seek registration in any other GHG program.

3.2.52 Projects Rejected by Other GHG Programs

The project has not been rejected from any other GHG programs.

3.2.53 Double Counting (G5.9)

The country does not participate in a compliance mechanism. Thus, this section is not applicable.

3.3 Climate

3.3.1 Title and Reference

The approved methodology applied for GHG monitoring and accounting is the *VCS VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0*.

The project also applies the following VCS and CDM modules and tools:

- VCS module VMD0019 Methods to Project Future Conditions v1.0
- VCS module VMD0052 Demonstration of Additionality of Tidal Wetland Restoration and Conservation Project Activities (ADD-AM) v1.0
- CDM AR Tool for testing significance of GHG emissions in A/R CDM project activities v1
- CDM AR Tool 2 Combined tool to identify the baseline scenario and demonstrate additionality for A/R CDM project activities v1
- CDM AR Tool 3 Calculation of the number of sample plots for measurements within A/R CDM project activities v2.1
- CDM AR Tool 5 Estimation of GHG emissions related to fossil fuel combustion in A/R CDM project activities v1
- CDM AR Tool 14 Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities v4.2

3.3.2 Applicability

The PD states all evidence used to demonstrate each condition of the applicable methodology and the modules and tools used. The assessment was carried out for each applicability criterion and included, among others, the review of evidence and sources provided in the PD, and the compliance check of the local project setting with the applicability conditions in regard to baseline and eligible project activities as follows:

- **VCS VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0**:

  1) *Project activities which restore tidal wetlands (including seagrass meadows, per this methodology's definition of tidal wetland) are eligible*.
     The project is a reforestation project of mangrove trees. Mangroves live in the intertidal zone.

  2) *Project activities may include any of the following, or combinations of the following: e) (Re-introducing native plant communities (e.g., reseeding or replanting)* AND *f) Improving management practice(s) (e.g., removing invasive species, reduced grazing).*
     The project is a reforestation project of native mangrove trees and by introducing Mangrove Stewardship Agreements, amongst other things, removes grazing from the Project Area.

  3) *Prior to the project start date, the project area: a) Is free of any land use that could be displaced outside the project area, as demonstrated by at least one of the following, where relevant: i) The project area has been abandoned for two or more years prior to the project start date AND ii) Use of the project area for commercial purposes (i.e., trade) is not profitable as a result of salinity intrusion, market forces or other factors. In addition, timber harvesting in the baseline scenario within the project area does not occur.*
     The Project Area comprises of de-vegetated and degraded mangrove areas that have remained abandoned for two or more years prior to the project start date in 2015. Project area is highly saline and therefore has no potential for any productive agricultural activity, is devoid of any marketable timber or other coastal resource that can be commercially harvested or marketed, and over-all land capability classification, its use for commercial purposes is not profitable.

  Conditions 4) to 8) do not required justification or are not relevant to the project since organic soils are absent within its boundary. The project activities do not include any of the exclusive conditions.

- **VCS module VMD0019 Methods to Project Future Conditions v1.0:**

  Without applicability conditions.

- **VCS module VMD0052 Demonstration of Additionality of Tidal Wetland Restoration and Conservation Project Activities (ADD-AM) v1.0** (This module is applicable to tidal wetland and conservation meeting the applicability conditions set out in Section 4.5 of VCS methodology VM0007 REDD+ Methodology Framework):

  4.5.1. The project activities do not include any of the exclusive conditions from describe in section 4.5.1.

4.5.2. The project is a reforestation project of mangrove trees ((Re-)introducing native plant communities (e.g., reseeding or replanting)).

- **CDM AR Tool for testing significance of GHG emissions in A/R CDM project activities v1:**

  *The tool shall be used in the application of an A/R CDM approved methodology to an A/R CDM project activity***:**

  a) *To determine which decreases in carbon pools and increases in emissions of the greenhouse gases measured in CO2 equivalents that result from the implementation of the A/R project activity, are insignificant and can be neglected.*
  VCS allows this tools to be used across all its approved methodologies.

  b) *To ensure that it is valid to neglect decreases in carbon pools and increases in GHG emissions by sources stated as being insignificant in the applicability conditions of an A/R CDM methodology.*
  The tool is used to assess the significance of the emissions of fossil fuel use.

- **CDM AR Tool 2 Combined tool to identify the baseline scenario and demonstrate additionality for A/R CDM project activities v1:**

  - *Forestation of the land within the proposed project boundary performed with or without being registered as the A/R CDM project activity shall not lead to violation of any applicable law even if the law is not enforced***.**
    The condition is met as there is no violation of the applicable law. The applicable laws are the Pakistan Forest Act 1927 and Sindh Grazing Rules 1936. The provisions of both these applicable laws are being adhered to.

  - *This tool is not applicable to small - scale afforestation and reforestation project activities*.
    This is a large-scale project activity.

- **CDM AR Tool 3 Calculation of the number of sample plots for measurements within A/R CDM project activities v2.1:**

  Without applicability conditions.

- **CDM AR Tool 5 Estimation of GHG emissions related to fossil fuel combustion in A/R CDM project activities v1:**

  Without applicability conditions.

- **CDM AR Tool 14 Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities v4.2:**

  Without applicability conditions.

AENOR, based on records provided, verified the applicability conditions of the methodology and tools. In conclusion, the project activity complies with the applicability conditions of the methodology and tools

selected by the PP. The PP has selected the appropriate tools and modules, as determined by the methodology.

3.3.3 Project Boundary

The carbon pools included and excluded in the project are the following:

Carbon Pool	Included?	Justification/Explanation
Above-ground tree biomass	Yes	Above-ground tree biomass in the baseline scenario is included Above-ground tree biomass in the project scenario is included
Above-ground non-tree biomass	No	*Oryza coarctata* grass may be present seasonally in both the baseline and the project scenarios but carbon stocks are very low
Below-ground biomass	Yes	Below-ground biomass in the baseline scenario is included Below-ground biomass in the project scenario is included
Litter	No	This pool is optional for WRC methodologies
Dead wood	No	This pool is optional for WRC methodologies
Soil	Yes	Soil organic carbon in the baseline scenario is included Soil organic carbon in the project scenario is included
Wood products	No	Not relevant for the baseline scenario Conservatively not accounted for in the project scenario

Sources of GHG and type of gases included and excluded in the project are the following;

Source		Gas	Included?	Justification/Explanation
Baseline	The production of methane by microbes	CH_4	No	No changes in salinity or CH_4 emissions as a result of the project. Baseline and project emissions, if any, will cancel each other out.
	Denitrification/nitrification	N_2O	No	This is the same as for CH_4. Furthermore, no changes in agricultural land use because of the project. Due to salinization of the land surrounding the Indus Delta, agricultural production is decreasing in the area and subsequently less fertilizer is being used.
	Burning of biomass and organic soil	CO_2	No	Conservatively excluded, if occurring at all in the baseline scenario
		CH_4	No	Ditto
		N_2O	No	Ditto
	Fossil fuel use	CO_2	No	Conservatively excluded

Source		Gas	Included?	Justification/Explanation
		CH_4	No	Ditto
		N_2O	No	Ditto
Project	The production of methane by microbes	CH_4	No	See baseline
	Denitrification/nitrification	N_2O	Yes	See baseline
	Burning of biomass	CO_2	No	Not a project activity
		CH_4	No	Ditto
		N_2O	No	Ditto
	Fossil fuel use	CO_2	No	In AR-ACM003, GHG emissions resulting from combustion of fossil fuel and transportation attributable to the project activity are considered. Moreover, project activities include planting of trees and do not include the movement of soil. This PD provides an estimate of GHG emissions due to fossil fuel use and justifies that these emissions are *de minimis*.
		CH_4	No	Ditto
		N_2O	No	Ditto

According to the VCS requirements, sources of emissions that are expected to increase in the project scenario compared to the baseline case must be included if the exclusion would lead to a significant overestimation of the total net anthropogenic GHG emission reductions/removals generated during the fixed baseline period. Furthermore, that sources considered insignificant according to the latest VCS Methodology Requirements can always be neglected. In this regard, the following GHG sources may be deemed insignificant and need not to be accounted for in the case of WRC projects, in accordance with Section 3.3.6 of the VCS Methodology Requirements*:*

- GHG emissions from the removal or burning of herbaceous vegetation and collection of non-renewable wood sources for fencing of the project area.
- Fossil fuel combustion from transport and machinery use in project activities.

The PP has provided shapefiles of the project area, including the project physical boundaries and the demarcation of the areas by planned year of planting, which total 224,997 ha.

Taking into account the justifications, assumptions and supporting information provided and the design of the project, AENOR deems that project boundary is correctly defined and in compliance with the applicable methodology and VCS requirements.

3.3.4 Baseline Scenario

As required by *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0*, the PP used the latest version of CDM tool *AR-Tool 02 Combined tool to identify the baseline scenario and demonstrate*

additionality for A/R CDM project activities to determine the baseline scenario. The analysis carried out determined the continuation of the pre-project land use to be the baseline scenario (degraded mangrove habitat).

The summary of the application of the CDM tool and the assessment of the audit team is the following:

STEP 0. Preliminary screening based on the starting date of the ARR/RWE activity

The project start date is 19 February 2015. The PP has provided evidence (contractual agreement between Indus Delta Capital Limited and The Sindh Forest Department) of the start date, which evidences that the sales of carbon credits are central in the decision to proceed with the project activity.

STEP 1. Identification of alternative land use scenarios to the proposed project activity

Sub-step 1a. Identification of alternative land use scenarios to the proposed project activity. The PP has identified the following possible alternative scenarios:

1. Continuation of the pre-project land use.
2. Natural mangrove regeneration of the land within the project boundary.
3. Mangrove reforestation of the land within the project boundary performed without being registered as a project activity intended for the carbon market.

Sub-step 1b. Consistency of credible alternative land use scenarios with enforced mandatory applicable laws and regulations. The PP identified as applicable regulations to the project area the Pakistan Forest Act, 1927 and Sindh Grazing Rules, 1936. All three scenarios comply with both regulations.

STEP 2. Barrier analysis

Sub-step 2a. Identification of barriers that would prevent the implementation of at least one alternative land use scenarios. The PP identified ecological barriers for the natural regeneration scenario, and several barriers (investment, institutional, technological, social, and land tenure barriers) for the mangrove reforestation without registering the project for carbon credits generation. No barriers were identified for the continuation of the pre-project land use.

The ecological barriers for natural generation have been demonstrated by the PP through remote sensing analysis (Appendix 10 of the PD) which shows that almost no natural regeneration has taken place in the project area between 1990 and 2014. As for the barriers of the mangrove reforestation without registering the project, the PP has provided arguments and evidence in the form of Annual Development Programme (investment barriers), regulation (institutional barriers), budget of Forest Department (technological barriers), population growth rate statistics (social barriers), and governmental notification declaring the project area as Protected Forest (land tenure barriers).

Sub-step 2b. Elimination of land use scenarios that are prevented by the identified barriers. The natural mangrove regeneration and mangrove reforestation without being registered as a carbon project were eliminated due to the identified barriers by the PP. Thus, as per the CDM *A/R Methodological tool Combined*

tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities Version 01, the baseline scenario is the continuation of pre-project land use, i.e., degraded mangrove habitat.

Based on these evidence, AENOR deems that assumptions, justifications and data used in the identification of the baseline scenario are appropriately justified and can be deemed reasonable. Considering the justifications about the project activities and their nature, the audit team deems that the identification of the barriers is appropriately justified and are credible. Documentary evidence used in determining the baseline scenario is relevant, and correctly quoted and interpreted in the project description. Relevant national and local circumstances have been considered and are listed in the PD. The procedures for identifying the baseline scenario have been correctly followed according to the steps in the tool and the identified scenario reasonably represents what might have occurred in the absence of the project. Thus, AENOR considers that the identified baseline scenario (continuation of pre-project land use) is correctly justified.

3.3.5 Additionality

VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0 requires the use of an activity method from *Module VDM0052 Demonstration of Additionality of Tidal Wetland Restoration and Conservation Project Activities*. The PP applied the module in section 3.1.5 of the PD, which includes the following steps:

- Step 1: Regulatory surplus. Demonstrated the project is not mandated by any law, statute or other regulatory framework, or any systematically enforced law, statute, or other regulatory framework. The PP uses has evidence the applicable law to the project area (Pakistan Forest Act, 1927), which mandates the protection of existing forests but does not mandate replanting or restoration of mangrove forests. The audit team verified this information by reviewing the content of the Forest Act.

- Step 2: Positive list. The applicability conditions of the module represent the positive list. The project has demonstrated that meets the applicability conditions of the tool (see section 3.3.2).

Thus, AENOR deems that the additionality of the project is appropriately justified and in accordance with the requirements of the applied methodology and the requirements set in section 3.13 of the VCS Standard v4.1.

3.3.6 Methodology Deviations

Thera are no methodology deviations.

3.3.7 Quantification of GHG Emission Reductions and Removals

Procedures for quantifying the GHG emission reductions and removals generated by the project during the project crediting period were conducted in accordance with the *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0*. The validation team performed an intensive review of all input data, parameters, formulas, calculations, conversions, statistics and resulting uncertainties and output data to ensure consistency with the VCS documentation, methodology modules, and tools.

Furthermore, the validation team reproduced calculations for selected samples to ensure accuracy of the results. Conversion factors, formulas, and calculations were provided by the PP in spreadsheet format to

ensure all formulas were accessible for review. The validation team recalculated subsets of the analysis to confirm correctness. Where applicable, references for analysis methods or default values were checked against relevant scientific literature for best practice.

Baseline emissions and/or removals

Section 3.2.1.1 of the PD analyses potential stratification for the project area in the baseline scenario considering the potential variables of i) soil type, ii) native ecosystems, iii) salinity for the accounting of CH_4. Finally, the project area is considered as one area of de-vegetated and degraded mangrove, subdivided into persistent tidal wetland, wetland lost due to sea level rise and new mangrove habitats. Such sub-strata are defined in 5-year time steps. The PP applied the module *VMD0019 Methods to Project Future Conditions v1.0* to determine the evolution of key variables, as explained in Appendix 9 of the PD.

The PP used equation 18 to equation 21 from the *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0* for the general approach to determine baseline emissions and removals. Fossil fuel combustion in the baseline scenario is not significant. As for net carbon stock changes in biomass, GHG removals in this baseline vegetation are considered de minimis. However, to be conservative, GHG removals in the project scenario were corrected for the presence of baseline mangrove vegetation by excluding a portion of the Project Area. This portion was estimated at 1.1% through a remote sensing analysis of the vegetation development in the project area, as described in Appendix 10 of the PD.

For emissions from soils in the baseline scenario, the PP used equations 26, 27, 48 and 49 of *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0.* $GHG_{BSL\text{-}excav\text{-}CO2,i}$ is not accounted for, which is conservative for the baseline scenario. Also, CO_2 emissions from the in-situ soil in the baseline scenario are conservatively not accounted for and deduction for allochthonous carbon is not required then. CH_4 and N_2O from the in-situ soil do not increase in the project scenario, so they are not accounted in the baseline.

For CO_2 emission from soil due to erosion, 5-year time steps were used to predict the loss of wetland area caused by sea level rise over a period of 100 years. The average carbon stock in the soil of the degraded mangrove habitat was determined collecting eight 1-m long soil cores throughout the project area, resulting in an average value of 163.6 t C ha^{-1}. It is assumed that the top meter of soil is eroded when the sea level rises. The default value from *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0* for "Normal Marine" or "Deltaic fluidized muds" was considered for $C\%_{BSL\text{-}emitted,i,t}$ (80%).

Project emissions and/or removals

For the stratification of the project area in the project scenario, the PP considered the planting cohorts, starting in 2015 and ending in 2026. In addition, the loss of planted area due to sea level rise, giving rise to a zone actively reforested with mangrove trees but then submerged/eroded and lost ("LOSS") and the gain of new mangrove habitat due to sea level rise ("GAIN") is considered. It is assumed that the areas that will become intertidal due to sea level rise (i.e., new mangrove habitats) will be gradually colonized by mangrove species because of the nearby presence of mangroves seeds and propagules. Stratification of salinity is not considered, since CH_4 emissions from soil in the project scenario are not accounted for, as they do not increase compared to the baseline scenario. As in the baseline scenario PP applied the module *VMD0019 Methods to Project Future Conditions v1.0* to determine the evolution of key variables.

The PP used equation 69 to 75 from of *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0* to determine the project emissions and removals included in the project boundary. Herbal

vegetation development is considered not significant. As described for the baseline scenario, natural regeneration of pre-existing mangrove trees is accounted for by excluding a portion of the project area of 1.1% from the GHG removals. GHG removals by biomass carbon pools other than tree biomass are conservatively not accounted for.

The PP developed a general growth model forest of *Avicennia* and *Rhizophora*, described in Appendix 13 of the PD, to determine the ex-ante growth and carbon removals in the reforested areas (ARR). For those areas projected to be submerged in the future due to sea level rise (same as in the baseline), it was assumed that all carbon stocks from aboveground biomass are lost to oxidation immediately and entirely return to the atmosphere at the year of submergence (LOSS). For the upland areas that will become intertidal due to sea level rise, assuming that will be gradually covered by mangrove species as a result of the nearby presence of mangroves seeds and propagules, the general growth model was applied, but with a reduction factor of 70% for a conservative carbon sequestration rate (GAIN).

For soil carbon emissions and removals, general equations 79 and 80 from *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0* are used, as well as equations. CO_2 emissions form soil in situ were estimated considering an average carbon stock within the top meter of soil of 163.6 t C ha^{-1}, as for the baseline scenario, at the project start. The conservative default value provided by *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0* for SOC accumulation was used (-1.46 t C ha^{-1}) in equation 33. The default factor was only applied to areas with a crown or vegetation cover of at least 50%. For areas with a crown or vegetation cover of less than 15%, this value was assumed to be insignificant and accounted for as zero. For areas with a crown or vegetation cover between 15 and 50%, a linear interpolation was applied. The deduction due to allochthonous carbon (equation 38), was carried out using the generalized estimate of the deduction from Needelman et al. (2018), as described in section 3.2.2.51.2 of the PD.

CH_4 and N_2O from the in-situ soil do not increase in the project scenario in comparison to the baseline, so they are not accounted for. Also, excavation is not a project activity, therefore, $GHG_{WPS\text{-}excav\text{-}CO2,i}$ is not included.

As in the baseline, for CO_2 emission from soil due to erosion, 5-year time steps were used to predict the loss of wetland area caused by sea level rise over a period of 100 years. For the ex-ante estimate, it was conservatively assumed that the eroded planting polygon has a carbon stock similar to what would have accumulated at t = 100, which gives a greater loss of carbon due to erosion in comparison to ex-post estimates. The calculation procedure is the same as for the baseline.

For emissions from fuel use, the PP has been able to demonstrate that the source is *de minimis*, since they represent less than 5% of net anthropogenic removals by sinks, as required by the *CDM AR Tool for testing significance of GHG emissions in A/R CDM project activities v1*. Thus, emissions from fuel use are not accounted.

Leakage

As per section 8.4.1 of *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0*, where the applicability conditions of the methodology are met, activity-shifting leakage and market leakage may be assumed to be zero. The PP demonstrated in section 3.1.2 that the applicability conditions of the methodology are met, as described in section 3.3.2 of this report.

Regarding ecological leakage, as defined in *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0,* the project does not alter the hydrology of the Indus Delta and adjacent lands and maintains wetland conditions, do not convert non-seagrass wetland to open water, non-wetland to wetland nor vegetated to non-vegetated conditions.

Thus, the PP has accurately assumed all leakage emissions as zero.

Net GHG Emission Reductions and Removals

The PP determined the net GHG emission removals from the ARR/RWE project activity using equation 85 from *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0*. The fire reduction premium (FRP) was not considered since organic soils and fire are not present in the project area.

Regarding uncertainty adjustments, for the baseline scenario there is no uncertainty associated with key variables, because they are either de minimis or based on default values, as demonstrated in Table 21 of the PD. For the project scenario, uncertainties for most variables will be quantified in the monitoring periods.

As required by *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0,* for conservation and restoration projects where sea level rise may cause a loss of tidal wetland and associated biomass and/or soil organic carbon stocks, the maximum quantity of GHG emission reductions or removals ($NER_{RWE-max}$) that may be claimed from the biomass and soil organic carbon pool is limited to the net GHG benefit generated by the project 100 years after its start date. Thus, the PP determined GHG emissions and removals in the project area until year 100, estimating $NER_{RWE-max}$ to be 142,050,139 tCO_2e. This amount is predicted to be reached in project year 40, or calendar year 2054. From this year onwards, no GHG removals will be claimed. The project does not claim reductions from baseline emissions, only removals due to carbon sequestration in biomass and soil. The following table summarizes the GHG estimations made by the PP:

Year	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated Actual GHG emission reductions or removals (tCO_2e)
2015	0	0	0	0
2016	0	37,719	0	37,719
2017	0	192,432	0	192,432
2018	0	462,307	0	462,307
2019	0	785,003	0	785,003
2020	0	918,916	0	918,916
2021	0	1,580,348	0	1,580,348
2022	0	2,060,015	0	2,060,015
2023	0	2,673,162	0	2,673,162
2024	0	3,419,415	0	3,419,415
2025	0	3,818,606	0	3,818,606

Year	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated Actual GHG emission reductions or removals (tCO_2e)
2026	0	5,144,231	0	5,144,231
2027	0	5,958,777	0	5,958,777
2028	0	6,619,386	0	6,619,386
2029	0	7,055,399	0	7,055,399
2030	0	6,819,447	0	6,819,447
2031	0	7,367,384	0	7,367,384
2032	0	7,311,935	0	7,311,935
2033	0	7,155,761	0	7,155,761
2034	0	6,924,172	0	6,924,172
2035	0	4,716,942	0	4,716,942
2036	0	6,318,149	0	6,318,149
2037	0	5,976,914	0	5,976,914
2038	0	5,624,547	0	5,624,547
2039	0	5,269,362	0	5,269,362
2040	0	2,924,970	0	2,924,970
2041	0	4,575,793	0	4,575,793
2042	0	4,247,028	0	4,247,028
2043	0	3,932,420	0	3,932,420
2044	0	3,633,445	0	3,633,445
2045	0	1,345,412	0	1,345,412
2046	0	3,086,866	0	3,086,866
2047	0	2,841,134	0	2,841,134
2048	0	2,612,042	0	2,612,042
2049	0	2,399,011	0	2,399,011
2050	0	185,491	0	185,491
2051	0	2,019,874	0	2,019,874
2052	0	1,853,735	0	1,853,735
2053	0	1,700,600	0	1,700,600
2054	0	481,986	0	481,986
2055	0	0	0	0
2056	0	0	0	0

Year	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated Actual GHG emission reductions or removals (tCO_2e)
2057	0	0	0	0
2058	0	0	0	0
2059	0	0	0	0
2060	0	0	0	0
2061	0	0	0	0
2062	0	0	0	0
2063	0	0	0	0
2064	0	0	0	0
2065	0	0	0	0
2066	0	0	0	0
2067	0	0	0	0
2068	0	0	0	0
2069	0	0	0	0
2070	0	0	0	0
2071	0	0	0	0
2072	0	0	0	0
2073	0	0	0	0
2074	0	0	0	0
Total	0	142,050,139	0	142,050,139

AENOR deems that values are correct and consistent with the sources.

The values and estimates presented in the PD are considered reasonable based on the documentation reviewed, further references and the result of the interviews during the onsite visit.

Based on the information reviewed, it can also be confirmed that the sources used are correctly quoted and interpreted in the PD and supporting documents. All assumptions and data indicated in the PD and all relevant sources were checked and confirmed and are listed in the PD, including their references and sources.

In essence, the methodology was correctly applied following the requirements. All values in the PD are considered reasonable in the context of the proposed VCS project activity. Data sources are quoted correctly. Hence, the calculation of baseline, project, and leakage emissions and the estimated net GHG emission removals are considered correct.

The list of parameters available at validation and the values used was also checked by AENOR and it is deemed complete and consistent with calculations and assumptions considered. The following table summarizes the data/parameters available at validation:

Data/Parameter available al validation	Value	Assessment procedure and result
$A_{BSL,i}$ Area of baseline stratum *i* (in year *t*)	Multiple values	Verified crosschecking values used in spreadsheet *DBC-1 PD CH3 Ex-ante_210529* with shape files.
$\Delta C_{TREE_BSL,t}$ Change in carbon stock in baseline tree biomass within the project area in year *t*	0	Value justified due to no vegetation cover in baseline. Correctly inputted in spreadsheet *DBC-1 PD CH3 Ex-ante_210529.*
CF_i Carbon fraction of dry matter in t C t^{-1} d.m. for species *j*	0.48 t C t^{-1} d.m. for aboveground biomass 0.39 t C t^{-1} d.m. for belowground biomass	Verified values with original sources (Kauffman, J.B. and D.C. Donato. 2012). Correctly inputted in spreadsheet *DBC-1 PD CH3 Ex-ante_210529.*
$C_{BSL\text{-}soil,i,t}$ Soil organic carbon stock in the baseline scenario in stratum *i* in year *t*	163.6 t C ha^{-1}	Estimation verified. Correctly inputted in spreadsheet *DBC-1 PD CH3 Ex-ante_210529.*
$GHG_{BSL\text{-}insitu\text{-}CO2,i,t}$ CO_2 emissions from the SOC pool of *in-situ* soils in the baseline scenario in stratum *i* in year *t*	0	Conservatively excluded. Correctly inputted in spreadsheet *DBC-1 PD CH3 Ex-ante_210529.*
$GHG_{WPS\text{-}soil\text{-}CO2,i,t}$ CO_2 emissions from the SOC pool in the project scenario in stratum *i* in year *t*	-5.35 t CO_2e ha^{-1} yr^{-1}	Value estimation reproduced. Correctly estimated in spreadsheet *DBC-1 PD CH3 Ex-ante_210529.*
%C Percentage of soil organic C	2.02 %	Value estimation reproduced. Correctly estimated in spreadsheet *DBC-1 PD CH3 Ex-ante_210529.*
$Deduction_{alloch}$ Deduction from CO_2 emissions from the SOC pool to account for the percentage of the carbon stock that is derived from allochthonous soil organic carbon	4.95 t CO_2e ha^{-1} yr^{-1}	Estimation verified. Correctly inputted in spreadsheet *DBC-1 PD CH3 Ex-ante_210529.*
$GHG_{WPS\text{-}fuel,i,t}$	482 t CO_2e yr^{-1}	Estimation verified. Value correctly considered *de minimis*.
allowable_uncert Allowable uncertainty; 20% or 30% at a 90% or 95% confidence level, respectively	N/A	Value not applicable as per justification of section 3.2.2.6 of the PD.

3.3.8 Monitoring Plan

The audit team checked all parameters presented in the monitoring plan against the requirements of the methodology and found that they are appropriate. The list of parameters to be monitored is the following:

- $\Delta C_{TREE_PRO,i,t}$ - Change in carbon stock in trees in stratum *i* during the period between two points of time t_1 and t_2.
- *Crown or vegetation cover* - Proportion of an area covered by the crowns of live trees.
- $A_{t,i}$ - Area of project stratum *i* (in year *t*).
- *N* - Number of sample plots required for estimation of biomass stocks within the project boundary.
- $C_{WPS,soil,i,t}$ - Carbon stock in the project scenario in stratum *i* in year *t.*
- *%OM* - Percentage of soil that is organic matter.
- $\%C_{soil}$ - Percentage of soil organic C.
- *BD* - Dry bulk density
- NER_{ERROR} - Total uncertainty for project activity

In the opinion of the AENOR, all necessary parameters required by the selected approved methodology are contained in the monitoring plan. They are clearly described, and the means of monitoring described in the plan comply with the requirements of the methodology.

The monitoring plan presented in the PD complies with the requirement of the methodology. The audit team deems that the climate benefits associated with the implementation of project activities were planned to be monitored through a transparent structure.

The procedures described in section 3.3.3 of the PD were reviewed by the AENOR team and cross-checked against the applicable methodology and associated tools. The audit team found them to be in compliance with methodological requirements, and good practice as defined. The monitoring equipment to be used to collect, correct, and process the data are in compliance with the methodology and the VCS requirements

In opinion of AENOR, all necessary parameters required by the selected methodology are contained in the monitoring plan. They are clearly described, and the means of monitoring detailed in the plan comply with the requirements of the methodology. Tables in section 3.3.2 of the PD detail the different data variable to monitor along with the data unit, recording frequency, purpose of data, QA/QC, etc. Thus, the monitoring plan is in compliance with the applicable methodology. The monitoring plan provides means for internal data review and quality control, and the data presented by the PP included the results of these internal assessments. AENOR considers that information provided is sufficiency and the quality of that information is appropriate to determine the GHG removals

After the review of evidence provided by the PP, the interview, and communications with PP, AENOR confirms that monitoring arrangements described in the monitoring plan are feasible within the project design and that the means considered for the implementation, including data management, quality and assurance control procedures, are sufficient to ensure that the GHG net anthropogenic removals achieved resulting from the proposed VCS project activity can be reported ex post and verified. Therefore, in opinion AENOR, the PP will be able to implement the monitoring plan.

3.3.9 Dissemination of Monitoring Plan and Results (CL4.2)

The PP will have the climate monitoring plan available for public review at the project office. The full results of the initial climate monitoring are included in the PD, which is being made publicly available in the project zone. Additionally, a PD summary has been written and provided to communities throughout the project zone in English and Sindhi. The PD and the PD summary have additionally been posted to the project website for public review. This information was confirmed by the project staff and community members interviewed and verified by the audit team.

3.3.10 Non-Permanence Risk Analysis

The project utilized the non-permanence risk analysis tool, AFOLU Non-Permanence Risk Tool 4.0, to assess risk according to internal risk, external risk, natural risk, and mitigation measures for minimizing them. The audit team reviewed the Non-Permanence Risk Report, included as Appendix 12 in the PD, following VCS Standard v4.1 Section 3.2.9 and confirmed that the project adheres to the requirements set out in the VCS AFOLU Non-Permanence Risk Tool.

At all levels, the audit team evaluated the rationale, appropriateness, and justifications of risk ratings chosen by the PP. Each risk factor was thoroughly assessed for conformance. A brief review of each factor is shown in the table below.

Risk factor	Risk Rating	Assessment
Internal Risks		
Project Management: It is assessed using table 1 of the VCS AFOLU Risk Tool.	-2 (total may be less than zero)	a) Species used or intended to be used in replanting are all native. Risk rating=0 is justified. b) The baseline scenario is characterized by trampling of and damage to any newly emerging natural seedlings/natural regeneration. Protection and law enforcement activities will continue to seek to prevent illegal exploitation of the project area for fuelwood cutting and illegal grazing of livestock as well as poaching and killing of wildlife species. Risk rating=2 is justified. c) The management team has individuals with significant experience in all skills necessary to successfully undertake all project activities. Risk rating=0 is justified. d) Management team maintains a presence in-country and less than one travel day from project site. Risk rating=0 is justified.

Risk factor	Risk Rating	Assessment
		e) The management team has significant experience in AFOLU project design and carbon accounting under the VCS program. Risk rating=-2 is justified. f) Project activities are monitored and evaluated on a regular basis. The information becoming available as a result of these monitoring and evaluation activities and continued consultations with stakeholders will be fed into future actions and decision making so as to enable adaptive management of the project and its interventions. Risk rating=-2 is justified.
Financial viability: It is assessed using table 2 of the VCS AFOLU Risk Tool.	0 (total may not be less than zero)	a)-d) Project cash flow breakeven point is less than 4 years from the current risk assessment. Financial documentation demonstrating this was provided to the audit team. Risk rating=0 is justified. e)-h) Project has secured 80% or more of funding needed to cover the total cash out before the project reaches breakeven. Financial documentation demonstrating this was provided to the audit team. Risk rating=0 is justified. i) Project has available as callable financial resources at least 50% of total cash out before project reaches breakeven. Financial documentation demonstrating this was provided to the audit team. Risk rating=-2 is justified.
Opportunity Cost: It is assessed using table 3 of the VCS AFOLU Risk Tool.	-6 (total may be less than zero)	a)-f) NPV from project activities is expected to be at least 50% more profitable than the most profitable alternative land use activity. Financial documentation demonstrating this was provided to the audit team. Risk rating=-4 is justified. g) Not applicable h) The project is developed and managed by the Government of Sindh and Indus Delta Capital Limited, who have entered into public-private partnership arrangements through a 60-year agreement, renewable up to 100 years for the protection. Risk rating=-2 is justified. j) Not applicable
Project Longevity: It is assessed using table 4 of the VCS AFOLU Risk Tool.	0 (total may not be less than zero)	a) Not applicable b) The project does not have a legally binding agreement that covers at least a 100-year period from the project start date, but 60 years and renewable; The project longevity is 60 years; Legal agreement or requirement to continue management practice are in place. Risk rating=0 is justified.
Total internal risk=0 (total may not be less than zero)		

Risk factor	Risk Rating	Assessment
External Risks		
Land Tenure and resources access/impact: It shall be assessed using table 6 of the Risk Tool.	0 (total may not be less than zero)	a) All lands in the Project Area are classified as Protected Forests and are state property. Therefore, their ownership vests in the Government of Sindh. Risk rating=0 is justified. b) Not applicable. c)-d) There are no disputes over land tenure or ownership of the project area in more than 5 % of the project area nor disputes over access/use rights (or overlapping rights). All land tenure is hold by the Government of Sindh. Risk rating=0 is justified. e) The project has conservatively estimated potential erosion based on a sea-level rise forecast and the related loss of carbon stored in soil and vegetation. Risk rating=0 is justified. f) Legally binding commitments to continue management practices that protect the credited carbon stocks over the length of the project crediting period are in place. Risk rating=-2 is justified. g) Not applicable.
Community engagement: It shall be assessed using table 7 of the Risk Tool.	-5 (total may be less than zero)	a) SBIA workshops were held in strategic locations in the Project Zone with key representatives of community groups. Participants consisted of representatives from all stakeholder groups including local administration, village elders, local community leaders, indigenous women, and youth representatives. Risk rating=0 is justified. b) In total for the FPIC process and other project related activities, more than 45 meetings have been held since 2013 which have been attended by hundreds of community members from the Project Zone. Risk rating=0 is justified. c) The project generates net positive impacts on social and economic well-being of local communities is validated under the CCB Standards Risk rating=-5 is justified.
Political Risks: It shall be assessed using table 8 of the Risk Tool.	4 (total may not be less than zero)	a-e) Pakistan presents a score of -0.99 according to the World Bank Institute´s Worldwide Governance Indicators. AENOR verified the value and reliability of source. Risk rating=6 is justified. f) The country is receiving REDD+ Readiness Funding from the FCPF and is implementing REDD+ Readiness as well as a Social and Environmental Safeguards System. Risk rating=-2 is justified.
Total external risks=0 (Total may not be less than zero)		

Risk factor	Risk Rating	Assessment
Natural risks		
Fire Risk: It shall be assessed using table 10 of the Risk Tool.	LS*M=0	The risk of fire is negligible due to regular inundation and high humidity under the forest canopy and in the whole of the intertidal zone. Thus LS= 0 is reasonable. Mitigation (M) measures: NA
Pest and disease outbreaks: It shall be assessed using table 10 of the Risk tool.	LS*M=0	The area will be reforested with native ecosystem. Thus the risks from disease and pests are minimal. Thus LS= 0 is reasonable. Mitigation (M) measures: NA
Extreme weather: It shall be assessed using table 10 of the Risk tool.	LS*M=2	Insignificant (less than 5% loss of carbon stocks) or transient (full recovery of lost carbon stocks expected within 10 years of any event). Thus LS= 2 is reasonable. No prevention measures applicable to the risk factor are implemented Mitigation (M) measures: 1
Geological risks: It shall be assessed using table 10 of the Risk Tool.	LS*M=0	The project is exposed to little if any geological risks. Thus LS= 0 is reasonable. Mitigation (M) measures: Not applicable
Total natural risks=2		
OVERALL RISK RATING=0+0+2=2. Then an overall risk rating of 10% is considered.		

AENOR has checked that information provided in the NPRR contained in Appendix 12 of the PD is consistent with supporting documents provided. The assumptions and justifications provided to determine the risk rating of each risk factor are elaborated and they are based on provided documents using conservative assessments. AENOR deems that information provided is reliable and appropriate from reliable sources. Thus, the overall risk rating of 10% is credible and realistic.

3.3.11 Optional Gold Level: Regional Climate Change Scenarios (GL1.1)

The PP has identified the following regional climate change scenarios:

- Increased temperatures
- Erratic rainfall patterns
- Prolonged droughts
- Stronger winds
- Increased intensity and frequency of extreme weather events

According to the PD, potential changes in the local land use scenario due to these climate change scenarios in the absence of the project include:

- Greater shoreline erosion due to strong wind currents and sea level rise
- Increased salinization of terrestrial landscapes and loss of agricultural lands
- Saltwater intrusion into freshwater bodies
- Greater salinization of underground aquifers

- Greater landward progression of inter-tidal zone

Based on the study cited in the PD (Salik et al. (2015)) for the Indus Delta area related to a Composite Vulnerability Index (CVI) to predict climate change impacts, the scores of all sensitivity indicators for the project zone fall in the category of extremely sensitive and vulnerable and contribute to the community's sensitivity towards climate change. The inadequate and unregulated release of freshwater flows from the Indus River impacting agriculture and fisheries production, reflects a very high impact on the economy of community, which is largely dependent on fisheries.

According to the information provided in section 3.4.1 of the PD, the coping capacity of a community dealing with the climate change associated risks is highly dependent upon social factors like, social values, networks, customs as well as the social capital. In terms of coping potential in the project zone, consumption patterns, income diversification, dependency ratio, schooling or education level and infrastructure (access to basic facilities) are indicators which reflect low adaptive capacity/very high vulnerability.

It is the opinion of the audit team, based on the support evidence provided by the PP and the observed impacts attributed to climate change described in the Fifth Assessment Report (AR5) of the IPPC, that the PP has appropriately identified the likely climate change and climate variability scenarios affecting the project area. Considering the main land use scenario of the project area, the potential changes to the land use described by the PP is deem as reasonable by AENOR.

3.3.12 Optional Gold Level: Climate Change Impacts (GL1.2)

The PD provides information on current and anticipated climate change impacts in the project area and its surroundings (project zone). Community well-being will be reduced due to loss of human lives and greater injuries, morbidity, and diseases and also loss of productive assets like crop lands and loss of crops and livestock due to higher temperatures, extreme weather events, and greater occurrence of disease pathogens. Impacts also would include loss of income and livelihoods earning opportunities; loss of infrastructure and access to various services; increased cost of living due to greater cost involved in access to various services and inflation; displacements and migration necessitated by floods, droughts, etc.

Biodiversity impacts include i) loss and fragmentation of coastal and marine habitats, including loss of food and shelter sources, due to sea level rise, loss of vegetation, shoreline erosion, increased salinity, greater temperatures on the surface of land and ocean and ocean acidification, etc.; ii) loss of species and genetic diversity, particularly of endemic, rare and sensitive species which are not adapted to the new climatic situation and its greater variability; iii) increased chances of poaching due to wildlife getting exposed and people capturing wildlife to meet their income and livelihoods needs, and iv) greater prevalence of diseases and pathogens and onslaught of invasive and exotic species

Based on the list of past key extreme weather events occurred in the Indus Delta area, AENOR considers that it is demonstrated that current or anticipated climate changes are having or are likely to have an impact on the well-being of communities and the conservation status of biodiversity in the project zone and surrounding regions. The audit team considers that the rationale behind the expected climate change impact effects described by the PP is solid and credible.

3.3.13 Optional Gold Level: Measures Needed and Designed for Adaptation (GL1.3)

Section 3.4.3 of the PD provides a list of project activities, their sub-activity components, and the specific adaptation benefits that each of them is expected to generate. These adaptation benefits include, among others, mangrove provision of services (food, fodder, water purification, etc.), climate-smart village planning, support through training and capacity building for enhancing and developing alternative livelihoods, provision of drinking water facilities, hygiene, and sanitation services, etc.

After reviewing the full design of the project activities described throughout the PD, it is the opinion of the audit team that their implementation will deliver the intended effects on climate change adaptation and will assist communities and biodiversity to adapt to the probable impacts of climate change. The measures are based on the casual model of the project as described in response to G1.8 (section 2.1.11 of the PD), since they are main activities of the project.

3.4 Community

3.4.1 Descriptions of Communities at Project Start (CM1.1)

Section 4.1.1 of the PD provides a detailed description of the context of the communities affected by the project, their wellbeing and their characteristics and diversity.

The audit team considers the information set out in the PD to describe the wellbeing and the characteristics and diversity of the communities in the project zone is credible and faithfully represents the reality in the project zone. The audit team reviewed the information sources and deems reliable and official sources of studies, research and other scientific papers from the project area were used in the preparation of these descriptions.

3.4.2 Interactions between Communities and Community Groups (CM1.1)

The PP describes the interactions between communities by characterizing them in two groups: i) those directly benefiting from over exploitation of the project zone (poachers, livestock grazers and fuelwood collectors) and by taking advantage of the situation (exploitative employers paying low wages, middlemen and micro-lenders lending at exorbitant interest rates); and ii) those who stand to lose due to the activities by groups in the first category (community in general, artisanal fishers, women and children, etc.).

The individual and collective actions of the first category of community groups is leading to resources and environmental degradation on which the subsistence income and livelihoods of the poor and marginal groups depend and add to the poverty of these people by reducing their income and livelihood earning opportunities and increasing the cost of living for them. The exploitative practices adopted by employers, middlemen and money lenders work together to the disadvantage of the second category of poor and marginal community groups.

There are a number of obstacles to more equitable interactions between communities and groups in the Project Zone. Some of these obstacles are personal, while others are organizational and cultural

Based on the declarations made by different community members during the interviews, the audit team has no reason to consider the information provided in the PD not accurate.

3.4.3 High Conservation Values (CM1.2)

The PP identified the following HCV related to community well-being in the project area and zone:

- HCV 4 – Environmental services: the project zone is part of a landscape that is important for the provision of water and prevention of floods and holds areas important for the prevention of erosion and sedimentation. The project area is a part of landscapes that function as a natural break to saltwater intrusion

- HCV 5 – Natural areas critical for meeting the basic needs of local people: the project zone plays an important role for meeting the basic needs of local fishing communities as the mangrove forests serve as nurseries and habitats for many fish and shrimp species in their initial stages of life.
- HCV 6 – Areas critical for maintaining the cultural identity of local communities: the project zone contains areas critical for maintaining the cultural identity of local communities, like the remains of the cities of Banbhore and Jhaki Bandar, mentioned in section 4.1.1 of the PD.

Considering the nature of the identified HCV, the potential ecosystem services that restored mangroves could provide to the communities, the fundamental interconnection between them and the livelihoods and the traditional cultural identity of the communities in the project zone, and the information directly provided by community members in relation to the relevance of the mangroves for their daily life, AENOR deems that the PP has appropriately identified the HCVs related to community well-being existing in the project zone.

3.4.4 Without-Project Scenario: Community (CM1.3)

Section 4.1.4 of the PD provides a description of the expected changes in the well-being conditions of communities in the non-project scenario. The PP used the SBIA community workshops, in which stakeholders identified and prioritized the focal issues, and then they were analyzed further to establish the causal logic leading to the problems and a Problem Flow Diagram (PFD) for each of the focal issues was produced. The resulting focal issues and the expected changes in 5-10 years in the non-project scenario are:

- Forest loss → Worsen
- Forest degradation → Worsen
- High living cost → Remain unchanged
- Low income → Remain unchanged
- Inability to restore degraded mangroves and wetland areas → Worsen
- Unsustainable fisheries → Worsen
- Human wildlife conflict → Worsen

The audit team review the SBIA workshop reports, the PFD generated and check with community representatives interviewed their expectations in the future, and it is able to confirm that the characterization of the expected changes to the community well-being in the without-project scenario made by the PP is credible.

3.4.5 Expected Community Impacts (CM2.1)

Section 4.2.1 of the PD lists the following expected community impacts of the project, by community group and type of benefit/cost/risk:

- Community in general: Enhanced ecosystem goods and services and improved livelihoods through better education, health, access to clean water and direct employment. Predicted direct benefit.
- Government and local authorities: Better execution of their mandate through improved training, equipment, revenue collection and improved relations with communities. Predicted direct benefit.
- Borrowers and debtors: Direct access to affordable credit and gains in profits through payment of low interest rates on borrowed money. Predicted direct benefit.
- Fishermen: Direct access to affordable credit and gains in profits through adoption of new technologies that promote sustainable fishing practices. Predicted direct benefit
- Daily wage paid labor: Availability of jobs, alternative livelihoods, and reduced cost of living. Predicted direct benefit.
- Traders and middlemen (including employers and lenders): Reduced profits due to increased costs of goods or services and shrinking of customer base. Predicted indirect cost.
- Poachers, fuelwood collectors, fodder collectors: Reduced income. Predicted direct cost.
- Upstream dwellers: Reduced income. Predicted direct cost.

All impacts presented are result of the implementation of the planned project activities within the logic of the Theory of Change developed by the PP. Thus, it is the opinion of AENOR that they are realistic and credible. Based on the evidence, the audit team deems the expected community impacts, the key assumptions and methodological choices used to anticipate the impacts on each community group resulting from project activities under the project scenario followed the CCB requirements.

3.4.6 Negative Community Impact Mitigation (CM2.2)

As described in the previous section, three community groups are expected to be negatively impacted as result of the implementation of project activities. The PP has developed specific mitigation measures for each of them:

- *Poachers, fuelwood collectors and illegal livestock grazers*: although these are illegal activities, those undertaking them for basic livelihood support will be considered for direct employment in project restoration work. They will have access to other general community benefits like improved ecosystem services, access to clean water and better education and health facilities.
- *Traders, middlemen and employers*: this group will see diminished profits in the short-term, however, they should enjoy greater stability in the long-term from conducting legitimate business, leading to reduced conflicts with the law, employees, and community. They will also benefit in the long term from sustainable ecosystem goods and services.
- *Upstream dwellers:* This group is expected to see reduced income in the short run. This, however, will be offset by the implementation of water sector development schemes, particularly irrigation efficiency increasing projects. These will be funded from carbon revenues which will accrue, and which the Sindh Government intends to spend on infrastructure development, especially in the irrigation sector throughout Sindh Province.

As for the impacts om the HCVs, the reforestation and mangrove conservation activities developed by the project will contribute to the enhancement of their attributes related to community well-being, mainly by increasing and strengthening the provisions of ecosystem services and the provision of livelihoods in the form of enhance fishing grounds.

AENOR deems the project has correctly identified the negative impacts within the communities by involving the communities in the identification of assessed impacts and the design presented in the PD. Besides the audit team found the PP has designed a competent and effective mitigation strategy to reduce any negative wellbeing impact on community groups and for maintenance or enhancement of HCV attributes related to community well-being.

3.4.7 Net Positive Community Well-Being (CM2.3, GL1.4)

Section 4.2.3 of the PD describes the net well-being impacts of the project. The PP describes the community benefits that the project is expected to achieve, categorized focal issues: 1) mangrove forest degradation due to unregulated and unsustainable use; 2) poverty and impoverished community well-being; and 3) continued and accelerated wildlife and habitat loss and fisheries degradation.

The PP has been able to demonstrate throughout the PD, that the implementation of the project activities will lead to the achievement of community positive impacts that will largely outweigh the potential negative impacts identified. Thus, the audit team deems the net impact of the project on the community wellbeing is positive and there was no evidence found on the contrary. The list of benefits described in the PD are considered as credible and achievable by the audit team.

Regarding climate change adaptation benefits, section 3.4 of the PD has demonstrated that the implementation of project activities will have a direct positive impact on the adaptation of local communities to climate change, enhancing their resilience against negative climate change effects

3.4.8 High Conservation Values Protected (CM2.4)

The audit team found no evidence of any of the HCVs related to community well-being were or will be adversely affected by the project. On the contrary, project activities are expected to enhance and protect community HCVs.

3.4.9 Impacts on Other Stakeholders (CM3.1)

According to the PD, the project is not anticipated to negatively impact other stakeholders. During the design phase of the project potential offsite groups were identified and include other Government Departments, private sector service providers and NGOs. None are considered likely to be significantly impacted by the project because the project zone itself was designed to incorporate all those groups who are likely to be significantly affected. Positive impacts that the project activities are likely to cause on the well-being of other stakeholders include increased capacity of these other stakeholders to engage and interact with project zone communities, increased awareness on several issues (forest conservation, land tenure, etc.) and enhanced funds availability from government share of carbon credits revenue and revenue from other Payments for Ecosystem Services (PES) by the Government of Sindh and an understanding of the concepts of PES by these other stakeholders.

The audit team deems the expected impacts on other stakeholders, the key assumptions and methodological choices used to anticipate the impacts on said groups resulting from project activities under the project scenario followed the CCB requirements.

3.4.10 Mitigation of Negative Impacts on Other Stakeholders (CM3.2)

There are no negative impacts on other stakeholders, and therefore no mitigation strategies are required.

3.4.11 Net Impacts on Other Stakeholders (CM3.3)

As the project is not expected to have negative impacts on other stakeholders, the overall net impact is expected to be positive, due to the expected benefits cited in section 3.4.9.

3.4.12 Community Monitoring Plan (CM4.1, CM4.2, GL1.4, GL2.2, GL2.3, GL2.5)

Section 4.4.1. of the PD presents the Community monitoring plan design, which is described in depth in Appendix 15. The monitoring plan is structured by activity areas and expected key results. For each of the last, several SMART objectives have been set by the PP. The progress towards achieving them will be monitored by series of specific indicators per each objective. The monitoring plan in Appendix 15 includes information on the type of indicator, the specific data collection method, who is responsible for their collection, the frequency of data collection and the geographical area relevant.

Most of the monitoring will be done annually, with the exception of some indicators for which data will be collected only before verification events. Data collection methods include internal reports, household surveys, PRAs, communications and meetings records, copies of agreements, governmental records, and training session records.

The monitoring plans assesses differentiated impacts for each of the community groups and include an evaluation by the affected community groups. It also assesses the effectiveness of measures taken to maintain or enhance all identified HCVs related to community well-being. Besides it includes indicators of well-being impacts and risks for small holder/community members and impacts on women as well as has indicators for adaptation benefits for communities.

AENOR deems that the community monitoring plan identifies community variables to be monitored, the areas to be monitored, the sampling methods and the frequency of monitoring and reporting following the CCB requirements in this regard. The monitoring variables are directly linked to the project's variables that are connected to project objectives related to communities and community groups and to outcomes, outputs and impacts related to community well-being that were identified through the theory of change and allowed the assessment of the effectiveness of measures taken to maintain or improve High Conservation Values related to the well-being of the community. Thus, AENOR deems the community monitoring plan was elaborated according to the CCB standard, including the monitoring of climate change adaptation benefits and exceptional community benefits to meet the Gold Level requirements.

3.4.13 Monitoring Plan Dissemination (CM4.3)

The community monitoring plan and its results will be disseminated in the same way as the climate monitoring plan and results, described in section 3.3.9 of this report.

3.4.14 Optional Gold Level: Exceptional Community Criteria (GL2.1)

The PP has demonstrated that the project qualifies for the Exceptional Community Benefits Gold Level as required by GL2.1 of the CCB Standard v3.1: the project zone is in a low human development country or in an administrative area of a medium or high human development country in which at least 50% of the households within the communities are below the national poverty line. Pakistan is a medium development country, but more than 70% project zone household live below the national poverty line.

3.4.15 Optional Gold Level: Short-term and Long-term Community Benefits (GL2.2)

According to the PP, all community members in the project zone are dependent on mangrove resources and will thus benefit from their restoration, protection, and sustainable management. Where this management prevents previous livelihood activities, the project will put in place actions to mitigate any negative effects. Section 4.5.2 of the PD includes a description of the expected long-term and short-term benefits to community members.

The audit team reviewed the rationale behind the claimed expected benefits and check it with the Theory of Change developed by the PP for the project. In addition, documental evidence and testimonies for community representatives demonstrate that some of the short-term benefits described are already being delivered. Thus, AENOR deems that the project will generate short-term and long-term net positive well-being benefits for smallholders/community members in accordance with the requirements of the CCB Standard.

3.4.16 Optional Gold Level: Community Participation Risks (GL2.3)

As described in section 3.2.20, sixty meetings have been held with community members throughout the project area to discuss the risks for communities to participate in the project. These discussions focused on how the project would affect the income, livelihoods, and overall well-being of the communities, and what will be the roles and responsibilities of communities for them to be eligible as project partners and getting support in terms of various community development activities.

Section 4.5.3 of the PD presents the results of these meetings, in form of community income, livelihood and over-all well-being related areas, theirs associated anticipated risks and the risk mitigation strategy developed by the PP for each of them.

Considering the evidence provided and the participatory activities carried out by the PP in order to assess the potential risks and mitigation strategies in collaboration with community stakeholders, AENOR deems that the PP has properly identify risks for the smallholders/community members to participate in the project and that adequate measures have been developed to manage the identified risks.

3.4.17 Optional Gold Level: Marginalized and/or Vulnerable Community Groups (GL2.4)

The PP has identified the following marginalized and/or vulnerable community groups: 1) Coastal fishing communities, 2) Coastal communities engaged in agriculture and crop husbandry, 3) Coastal communities engaged in livestock raising, 4) Coastal communities engaged in daily wage labor, 5) women, 6) landless poor and other marginal groups. For each of them the PP describes comprehensively their expected net positive impacts, benefit access and negative impacts in section 4.5.4 of the PD.

The PP has been able to demonstrate with the information presented throughout the PD and the Theory of Change developed the net positive impacts of the project. No negative impacts are anticipated for any of the groups. Only short-term reductions in fish catch (group 1) and in income form reduce access to fodder and open-range grazing areas (group 3), which will be compensated through other improvements achieved by the project

The benefit access of landless poor and other marginal groups is expected to be severely improved by addressing the problem of elite capture of benefits, dealing with the problem of exclusion, developing dedicated project interventions for smallholders and marginal groups, and reducing Lack of access to information and knowledge and skills and the problem of exploitation.

Based on the evidence provided and gathered by the audit team, it is the opinion of AENOR that the project generates net positive impacts on the well-being of all identified marginalized and vulnerable groups, securing their access to the benefits, and that it has properly identified and avoided any negative impacts on poorer and more vulnerable households.

3.4.18 Optional Gold Level: Net Impacts on Women (GL2.5)

Besides the positive impacts of the project derived by the whole community in the project zone, the PP has developed project activities aimed specifically at women to improve their incomes, livelihoods, and overall well-being. These activities are described in section 4.5.5 of the PD and include, among others, exclusive information meetings for women, establishment of women organizations, women health related interventions, focus on girls' education and adult literacy programs for women, etc.

The audit team reviewed the planned activities focused to improve women's benefit access and discussed their designed and implementation with project staff and facilitators and considers credible the claims of the project regarding the expected net positive impacts on the well-being of women and women participation.

3.4.19 Optional Gold Level: Benefit Sharing Mechanisms (GL2.6)

Local communities have been organized into village development committees and women organizations which decide on the benefit distribution and cost sharing arrangement under the project. These village level organizations are socially inclusive and have representation of the marginal and vulnerable groups. Therefore, these traditionally left-out groups have a say in decisions pertaining to various aspects of the project including costs and benefits sharing. Thus, AENOR deems that the benefit sharing mechanism complies with requirements of GL2.6 of the CCB Standard v3.1, in terms of participation of smallholders/community members and transparency.

3.4.20 Optional Gold Level: Benefits, Costs, and Risks Communication (GL2.7)

In section 3.2.20 of this report it was assessed that the community costs, risks and benefits of the project and the socialization of the project with the communities involved and to be involved, the community members were communicated about predicted and actual benefits, costs, and risks.

3.4.21 Optional Gold Level: Governance and Implementation Structures (GL2.8)

According to the description in section 4.5.8 of the PD, the project has established a Community Development, Extension and Gender Development Directorate in its organizational set-up. This directorate is staffed by qualified professionals, both male and female, who specialize in community development,

extension, and gender development. The experts from this directorate regularly undertake field visits and coordinate with the local communities and other stakeholders with respect to the proper implementation of the community development component of the project.

At the community level, 40 village development committees and 40 women organizations have already been established to represent their particular villages and interact with the directorate staff of the project to discuss and agree on various community development related interventions designing, planning, implementation, and participatory monitoring.

Regular meetings are held with these village organizations in a culturally appropriate manner at designated places, times and with already agreed meeting agendas. The proceedings of these consultative meetings are properly documented and circulated.

AENOR interviewed project staff and community representatives and could check that project's governance and implementation structures enable full and effective participation of smallholders and community members in project decision-making and implementation.

3.4.22 Optional Gold Level: Smallholders/Community Members Capacity Development (GL2.9)

Section 4.5.9 of the PD includes an extensive list of topics for awareness raising and training and capacity building sessions that are being designed, organized, and implemented. The themes of these sessions were selected based on meetings and discussions held with community stakeholders, assessing the awareness raising and training and capacity building needs of community members and stakeholders' groups.

It is the opinion of the audit team that, once implemented, these planned trainings and sessions will develop the capacity of smallholders and community members to participate effectively and actively in project design, implementation, and management.

3.5 Biodiversity

3.5.1 Existing Conditions (B1.1)

Section 5.1.1 of the PD presents and exhaustive description of biodiversity conditions previous to project implementation, including descriptions of coastal vegetation, terrestrial and supratidal biodiversity, intertidal and subtidal biodiversity, and the main threats to biodiversity.

The project area is located in the Indus Ecoregion, identified by the WWF's Global 200 as a biodiversity hotspot. Located in a semi-arid environment, the Ecoregion is composed of riverine forests along the Indus River, mangrove forests and tidal wetlands in the coastal areas, while desert ecosystems occupy the periphery. The area is rich in biodiversity and natural resources including mangrove forests, croplands, fisheries, wetlands, coastal creek systems and rare fauna as well as sights of cultural and historical heritage.

To accurately assess the existing situation with respect to biodiversity in the project zone, a baseline assessment survey was carried out at four strategic locations (Keti Bandar, Shah Bandar, Karo Chaan and Korangi) within the Project Zone (**¡Error! No se encuentra el origen de la referencia.**). The full results of this study are provided in Appendix 18 of the PD.

The main threats to biodiversity described include, among other, excessive, and indiscriminate unsustainable harvesting of fisheries and other coastal resources, general lack of awareness and capacity amongst stakeholders to sustainably manage wetlands, poor law enforcement due to lack of investment, human-wildlife conflict, etc.

The project area covers regions of highly degraded mangroves. The remaining vegetation in the project area is extremely sparse. In places, individual mangrove trees may be found, but the majority of the area is either barren land or covered with a scattering of seasonal, low salt tolerant *Oryza coarctata* grass.

Based on the review of cited sources, it is the opinion of AENOR that the existing biodiversity conditions and threats to biodiversity described in the PD are accurate.

3.5.2 High Conservation Values (B1.2)

The PP has identified the entirety of the ARR/RWE project area is of High Conservation Value based both on area as well as species parameters:

- HCV 1: Species diversity.
    - Concentrations of biological diversity including endemic species, and rare, threatened or endangered species, that are significant at global, regional or national levels.
    - The project area is a part of landscapes containing populations of arid zone mangrove species.
    - It forms part of the habitat for the endangered Indus River dolphin and the Indian humpback dolphin which have global significance.
    - Other unique aquatic biota in the area includes the Indus baril (*Barilius modestus*), Indus garua (*Clupisoma naziri*), Rita catfish (*Rita rita*) and a number of snakehead fish including the giant snakehead, *Channa marulius*.
    - The project area is the habitat of the endangered Indian pangolin.
    - The project area has 32 of the 147 fish species found in the region that are endemic to Pakistan.
    - The project area is used as a temporary place/habitat by a number of migratory bird species.
- HCV 2: Landscape-level ecosystems and mosaics:
    - The project area forms part of a large wetlands landscape which extends to over 600,000 hectares.
    - The project zone is a part of landscape that contains mangrove ecosystems as well as mudflats ecosystems and is thus constituting landscapes that contain two or more contiguous ecosystems.
    - The project zone is a part of landscapes containing populations of arid zone mangrove species.

- HCV 3: Ecosystems and habitats:
    - The project zone is one of the largest zones of arid mangroves regionally, nationally and globally.
    - The project zone is used as a temporary place/habitat by a number of migratory bird species.

Considering the nature of the results of the biodiversity surveys carried out by the PP (Appendix 18 of the PD) and the biodiversity relevance of the Indus Delta region and the key role that mangroves play in this area as habitat of numerous species and provider of exosystemic services, AENOR deems that the PP has appropriately identified the whole project area as biodiversity HCV. As indicated in the PD, restoration activities and conservation of the current mangrove area is necessary in order to maintain the project area's ecosystems and habitats.

3.5.3 Without-project Scenario: Biodiversity (B1.3)

As for the community without-project scenario (section 3.4.4), the PP used the SBIA community workshops to identify and prioritized the focal issues related to biodiversity, their drivers, and their expected future trends in a without-project scenario. Among the participants in the workshops, there were organizations that had some prior knowledge and experience of implementing biodiversity and conservation related activities within the project Zone, such as the Federal Government's Quality Control and Standards Authority, and various NGOs including IUCN and WWF Pakistan.

The focal issues driving biodiversity loss and degradation within the project zone identified were 1) unsustainable use of resources, 2) ineffective law enforcement and 3) low awareness of biodiversity value. According to the assessment, in a without-project scenario, the drivers behind these focal issues will persist in time and a worsening situation is expected with respect to each of the focal issues and their contributing factors leading to a reduction of mangrove forests and disappearance of their ecosystem services and increased vulnerability of biodiversity and threatened species in the area due to lack of habitat and ongoing habitat destruction.

Considering the sources of the information provided by the PP and the rationale of the causal relations described in the PD, the audit team found no inconsistencies in the description of the potential without-project scenario and considers expected changes to biodiversity conditions in the without-project scenario were well defined in the PDD in compliance with the CCB requirements.

3.5.4 Expected Biodiversity Changes (B2.1)

Section 5.2.1 of the PD includes expected positive biodiversity changes both for flora and fauna. The project consists of the restoration and conservation of tidal wetland mangrove forests in the project area. Project interventions will be implemented via sustainable landscape management tools, which will contribute to the maintenance of the ecological structure and composition of the ecosystem. This will guarantee the availability of ecosystem services and the conservation of species of flora that are under threat.

As for the fauna, an increase in vegetation cover will ensure an adequate habitat for faunal species. Mangrove forests in the project zone are the habitat of a great variety of local and migratory birds, mammals and reptiles, which obtain food from them and use them as places of refuge and nesting. Marine and estuarine species will also find the necessary conditions for their reproduction, growth and permanence.

All expected changes presented are direct result of the implementation of the planned project activities: 1) habitat improvement and restoration of degraded and de-vegetated wetlands, 2) habitat security enhancement and effective enforcement of laws, 3) species and habitats conservation control of unsustainable levels of resource use, and 4) improved awareness raising and advocacy. Thus, it is the opinion of AENOR that the information about expected changes on biodiversity from project realistic and credible. AENOR concludes that the 'with project' scenario improves the biodiversity of the project areas and helps to preserves habitat for fauna and flora and rare, endangered, and endemic species in the HCVs.

3.5.5 Mitigation Measures (B2.3)

The PP has designed the project in a way that there are no expected negative impacts on biodiversity. Thus, no specific mitigation measures for biodiversity are required.

3.5.6 Net Positive Biodiversity Impacts (B2.2, GL1.4)

Based on comparison of without-project scenario and with-project scenario, most of the direct factors across the focal areas are projected as being likely to worsen in the absence of the ARR project. Thus, project activities planned and being implemented will result in clear environmental, biodiversity and HCVs benefits compared to the without-project scenario. Also, the project has no negative biodiversity impacts anticipated, either on-site or off-site. The project zone includes areas where mangroves will grow due to climate induced sea-level rise. Protecting these areas through the project activities will help biodiversity to adapt to climate change

Project activities assist biodiversity in adapting to the probable impacts of climate change, as described in section 3.4.3 of the PD and discussed in section 3.3.13 of this report.

The audit team considers the statements of the PP related to net positive biodiversity impacts to be credible, correct and representative of what is actually being implemented by the project. AENOR deems the project is having and going to have a positive net gain for biodiversity in the project area. The audit team deems that the PP has demonstrated that project activities will assist the biodiversity to adapt to the probable impacts of climate change, as per GL1.4 of the CCB Standard v3.1.

3.5.7 High Conservation Values Protected (B2.4)

The audit team found no evidence of any of the HCVs related to biodiversity were or will be adversely affected by the project. The mangrove reforestation of the project area will directly enhance all attributes of this zone as biodiversity HCV.

3.5.8 Species Used (B2.5)

The PP will undertake restoration of degraded and de-vegetated mangrove using the native species *Avicennia marina, Rhizophora mucronate, Ceriops tagal,* and *Aegiceras corniculatum*. In the agroforestry program, the project will use local and native species such as *Acacia nilotica*.

3.5.9 Impacts of Non-native Species (B2.6)

No invasive species, either floral or faunal, are being used by the project.

3.5.10 GMO Exclusion (B2.7)

The PP guarantees that no GMOs will be used in the project area.

3.5.11 Inputs Justification (B2.8)

The use of agro-chemicals like insecticides, weedicides, pesticides, fertilizers or other environmentally undesirable inputs is neither anticipated nor will be used under the project.

3.5.12 Waste Products (B2.9)

The main waste anticipated from implementation of this project are from construction/renovation activities (health center construction, civic Center construction) and other infrastructure. For any such activity, the project will adhere to the Provincial Environmental Law provisions and guidelines, as stipulated under the established Environmental Impact Assessment process in the applicable environmental law.

The audit team found these measurements sufficient considering the nature of the waste products that the project may produce during the implementation of the project activities.

3.5.13 Negative Offsite Biodiversity Impacts (B3.1) and Mitigation Measures (B3.2)

All project activities are designed, planned and implemented to deliver positive biodiversity impacts. No negative impacts are anticipated, either onsite or offsite. According to the PP, there is very little possibility that the restoration of mangrove forests on degraded or de-vegetated areas will lead to displacement of activities offsite.

It is the opinion of AENOR that the PP has demonstrated that there are no potential negative offsite biodiversity impacts from the project.

3.5.14 Net Offsite Biodiversity Benefits (B3.3)

As there are no anticipated negative offsite impacts to biodiversity, an evaluation of unmitigated offsite impacts is not applicable.

3.5.15 Biodiversity Monitoring Plan (B4.1, B4.2, GL1.4, GL3.4)

The biodiversity monitoring plan is described in section 5.4.1 and Appendix 16 of the PD. As for in the community monitoring plan, the biodiversity monitoring plan is structured by activity areas and expected key results, SMART objectives, and indicators. The monitoring plan in Appendix 16 includes information on the type of indicator, the specific data collection method, who is responsible for their collection, the frequency of data collection and the geographical area relevant.

Most of the monitoring will be done annually, with the exception of some indicators for which data will be collected every three years. Data collection methods include satellite imagery analysis, field surveys, etc. Monitoring of land cover and land cover changes and vegetation development over time is an integral part of the biodiversity monitoring plan. For this purpose, among others the project would make use of remote sensing (based on LANDSAT imagery) and GIS techniques with appropriate ground truthing as well as establish permanent sample plots for vegetation and vegetation change monitoring.

The PP has also developed a detailed policies and procedures documents that detail policies for oversight and accountability of biodiversity monitoring activities as well as procedures for handling non-conformances with the validated monitoring plan.

To ensure the implementation of biodiversity monitoring plan, the project has a team of experts and field teams with the requisite competencies, clear job descriptions and responsibilities with regard to the monitoring plan implementation and they have been organized in an organizational structure which is meant to deliver results on the ground.

AENOR deems that the biodiversity monitoring plan identifies biodiversity variables to be monitored, the areas to be monitored, the sampling methods and the frequency of monitoring and reporting following the CCB requirements in this regard. The monitoring variables are directly linked to the project's biodiversity objectives and the expected effectiveness of the measures taken to maintain or enhance identified high conservation values related to nationally significant biodiversity present in the project zone. Thus, AENOR deems the biodiversity monitoring plan was elaborated according to the CCB Standard, including the monitoring of climate change adaptation benefits and exceptional biodiversity benefits to meet the Gold Level requirements.

3.5.16 Biodiversity Monitoring Plan Dissemination (B4.3)

The biodiversity monitoring plan its results will be disseminated in the same way as the climate monitoring plan and results, described in section 3.3.9 of this report.

3.5.17 Optional Gold Level: High Biodiversity Conservation Priority Status (GL3.1)

The PP has demonstrated that the project qualifies for the Exceptional Biodiversity Benefits Gold Level as required by GL3.1 of the CCB Standard v3.1 by meeting the vulnerability criteria. Specifically, the project zone is habitat for the Indus River dolphin (*Platanista minor*), the Indian Ocean humpback dolphin (*Sousa plumbea*), the Indian pangolin (*Manis crassicaudata*) and the Egyptian vulture (*Neophron percnopterus)* which are classified as endangered (EN) by the IUCN Red List, and also for the fishing cat (*Prionailurus viverrinus*), which is classified as vulnerable (VU).

3.5.18 Optional Gold Level: Trigger Species Population Trends (GL3.2, GL3.3)

According to the PD, there have not been systematic and thorough assessments of biodiversity-related HCVs in the Indus Delta project zone landscape. However, given the current poor or limited levels of law enforcement across the landscape, coupled with extreme poverty, minimal livelihood and job opportunities for the local communities, loss of critical mangrove forests and wetlands habitats including HCVs is likely to continue without the Indus Delta ARR project interventions. This is likely to lead to a reduction in most, if not all, of the threatened and vulnerable trigger species Given this likely scenario, the proposed activities under the project's theory of change will lead to an improved status for most of the threatened and vulnerable species cited in the previous section. Thus, it is the opinion of AENOR that the project complies with the requirements of the CCB Standard for Gold Level exceptional biodiversity benefits.

4 VALIDATION CONCLUSION

AENOR has validated that the project Delta Blue Carbon - 1 – The Indus Delta Mangrove Restoration Project Phase 1 is in compliance with the Verified Carbon Standard version 4 and the CCB Standards Third Edition without qualifications or limitations. The project is located in Sindh Province, Pakistan, and it is expected to restore and protect of 224,997 hectares of mangroves in the Indus Delta, while directly improving the livelihoods of 60 villages around the perimeter of the project area.

The project proponents, Government of Sindh Forest Department and Indus Delta Capital Limited, have demonstrated that the ownership of the project is unconditional, undisputed, and unencumbered, in accordance with VCS requirements.

AENOR has performed the validation of this ARR/RWE project in Pakistan on the basis of all issues and criteria of VCS and CCB. The conclusions of this report showed that the project, as it was described in the Project Description, is in line with all criteria applicable for the validation.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and Monitoring Plans; ii) follow-up interviews with project staff and stakeholders; iii) the resolution of outstanding issues and the issuance of the final Validation Report and opinion. In the course of the validation process corrective actions and clarifications were raised. All have been successfully closed as explained in the validation protocol annexed to this report (Appendix 2).

The methodology *VM0033 Methodology for Tidal Wetland and Seagrass Restoration v2.0* was applied to determine the GHG net anthropogenic removals by sinks and to demonstrate the additionality of the project. The GHG net anthropogenic removals by sinks attributable to the project are additional to any that would occur in the absence of the project activity.

The review of the project design documentation and additional documents related to baseline and monitoring methodology; and the subsequent background investigation, follow-up interviews and review of comments by parties have provided AENOR with sufficient evidence to validate the fulfillment of the stated criteria.

In detail, the conclusions can be summarized as follows:

- The project is in line with all criteria of the VCS Standard v4.1 and the CCB Standard v3.1.

- The project additionality is sufficiently justified in the PD.

- The Monitoring Plan is transparent and adequate.

- The analysis of the baseline emission, project emissions and leakage has been carried out in a transparent and conservative manner.

- The project start date is 19-February-2015 and will have a lifetime and crediting period of 60 years, until 18-February-2075. During this period, the removal of 142,050,139 tCO_2e is expected through the

implementation of project activities, accounting for an annual average of 2,407,629 tCO_2e/year. The project is likely to achieve this removals during its lifetime.

- The project has demonstrated to be able to achieve climate, community, and biodiversity benefits, including Gold Level Climate Change Adaptation Benefits, Gold Level Exceptional Community Benefits and Gold Level Exceptional Biodiversity Benefits.

AENOR confirms with a reasonable level of certainty that the Project Description and the claimed emission removals are free from major errors, omissions, or inaccuracies.

Madrid, 04 October 2021.

Juan Carlos Gómez
Lead auditor

APPENDIX 1: List of Evidence Provided

General documents
Project Description: - Final version: Indus Delta DBC1 ARR PD v4.1 211001 - Indus Delta DBC1 ARR PD v4 210811 - Indus Delta DBC1 ARR PD v3 210722 - Indus Delta DBC1 ARR PD v2 210708 - Indus Delta DBC1 ARR PD v1.0 Non-Permanence Risk Report: - Appendix. 12 Risk Analysis
Carbon accounting
- DBC-1 PD CH3 Ex-ante_210529 - Fossil Fuel Emission DBC-1
Geospatial
- Biodiversity - Chronosequence Samples of Biomass Measurement - Chronosequence Samples of Soil Carbon Measurement - Communities Inside the Creeks - Communities Near the Creeks - Erosion - HCV4,5,6 - HCV4-HCV6 - Landcover-2015 - Plantation 2015-2026 - Project Zone Boundary - Red Rice - SBIA Workshop - Soil
Other documents and evidence
- SBIA Report - Mangrove Stewardship Agreements - Contractual agreement between Indus Delta Capital Limited and The Sindh Forest Department - Financial Model - Fieldwork Safety Guide - Equal Employment Opportunity (EEO) policy - Avoidance of Corruption and Unethical Behavior Policy - Ethical Policy - Hospitality and Gifts Policy - Whistleblowing Policy - Non-discrimination and anti-harassment assurance policy - Feedback and grievance redress management system (FGRMS) - Forest Act 1927 - Sindh Act No.XV of 2017 - Protected Forest Notification Government of Sindh - GoS FW Department Protected Forests Notification 2 Nov 2010 - Thatta District protected forests Notification 29 August 1958 - Video recordings of project area revegetation activities - Sindh Forest Department Organigram - DBC-1 Organigram - Management staff CVs - Reference paper cited - Indus Delta Capital Due Diligence Report - 23 April 2021

- Legal Opinion of Mr. Metlo dated 12 April 2021
- Annex-1 of Protocol and SOP for Mangrove Landscape Restoration Monitoring in Indus Delta under DBC-1 Project
- IDC-Protocol and SOP for Landscape Restoration Monitoring of Mangrove Forests in Indus Delta
- IDC-SOP Quality Assurance and Quality Control
- Policy and Procedures for Biodiversity Conservation Monitoring
- Policy and Procedures for Community Development Monitoring
- Policy and procedure for Oversight, accountability and non-conformance handling in implementation plan

APPENDIX 2: CORRECTIVE ACTIONS AND CLARIFICATIONS REQUESTS

VCS Corrective Action Requests (VCS CARs)

VCS CAR ID	**01**	**Date: 28/05/2021**
Description		
The stated figure of $NER_{RWE\text{-}max}$ in section 3.2.4 and the stated figures in table 22 do not match with estimated values on the spreadsheet *DBC-1 PD CH3 Ex-ante_210325*.		
Project proponent response		**Date: 29/05/2021**
We have adjusted the values in column "Estimated net GHG removals# (t CO2e)" to match column G in spreadsheet DBC-1 PD CH3 Ex-ante_210325. *We also corrected an error in the calculations of the NER_{RWE} by separating the adjustment for baseline biomass and buffer withholding.*		
Documentation provided by Project proponent		
New version of the spreadsheet: DBC-1 PD CH3 Ex-ante_210529.xlsx		
VVB Assessment		**Date: 12/07/2021**
The PP has made the adequate corrections. **CAR closed.**		

VCS CAR ID	**02**	**Date: 28/05/2021**
Description		
As required by section 3.2.9 of the VCS Standard v4.1, the non-permanence risk report shall be prepared using the VCS Non-Permanence Risk Report Template (which may be included as an annex to the PD or provided as a stand-alone document).		
Project proponent response		**Date: 29/05/2021**
We have corrected the score for Project Management, which was erroneously filled in as -4. The net score is -2. This has no effect on the final outcome of the risk analysis. *Annex 12 now contains the risk report as per the required template. The content of the risk tool is now exactly the same as Annex 12.*		
Documentation provided by Project proponent		
New Annex 12 using correct template. Risk tool.		
VVB Assessment		**Date: 12/07/2021**
The PP has modified the annex to include the tables of each risk following the non-permanence risk report template. However, the risk and/or mitigation for each risk factor applicable to the project has not been documented and substantiated, as required by the template. **CAR still open.**		
Project proponent response		**Date: 15/07/2021**
Appendix 12: Justification and evidence elaborated.		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 06/08/2021**
The PP has provided the required justification. **CAR closed.**		

VCS Clarification requests (CLs)

VCS CL ID	**01**	**Date: 28/05/2021**
Description		
In section of 3.1.2 the PD, as required by the template, demonstrate and justify how the project activity meets each of the applicability conditions of all the tools applied by the project.		
Project proponent response		**Date: 29/05/2021**
Justifications for all modules and tools in addition to VM0033 have been added to Table 11.		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 12/07/2021**
The PP has provided the requested information. **CL closed.**		

VCS CL ID	**02**	**Date: 28/05/2021**
Description		
In section of 3.1.3.2 the PD, as required by the VM033, provide details of land rights holder and user rights for each discrete area of the project in the geographic boundaries.		
Project proponent response		**Date: 17/06/2021**
This information has now been added to the said section of the PD.		
Documentation provided by Project proponent		
New Version of PD. Two Government of Sindh notifications declaring Mangrove Lands as Protected Forest.		
VVB Assessment		**Date: 12/07/2021**
The PP has provided the requested information. **CL closed.**		

VCS CL ID	**03**	**Date: 28/05/2021**
Description		
In section of 3.1.4 the PD, as required by the *Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities*, provide evidence that the incentive from the planned sale of carbon credits was seriously considered in the decision to proceed with the project activity. This evidence shall be based on (preferably official, legal and/or other corporate) documentation that was available to third parties at, or prior to, the start of the project activity.		
Project proponent response		**Date: 29/05/2021**
This PD is based on VM0033 v.2.0, which adopts the global activity method with positive list. Section 6.1 of VM0033 2.0 states: "Since projects using this methodology are eligible to apply the activity method for demonstrating additionality (see Section 7.1 below), all elements of the tool related to additionality must be disregarded." Therefore, evidence of this incentive is not required. All tidal wetlands project activities are deemed additional under this methodology.		
Documentation provided by Project proponent		
VM0033 v2.0		
VVB Assessment		**Date: 12/07/2021**
The PP has provided adequate clarification. **CL closed.**		

VCS CL ID	**04**	**Date: 28/05/2021**
Description		
In section of 3.1.4 the PD, as required by the *Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities*, provide evidence of the identified barriers in step 2 as per section 17 of the tool.		
Project proponent response		**Date: 17/06/2021**
A number of sources including government management plans, laws, reports, expert reports, research papers by academics and researchers, and reports by international bodies and organizations demonstrate the existence and significance of these identified barriers (Qureshi, 1984; Rasool, 1997; IUCN, 2005; MFF, 2010; Mukhtar, 2012; Lavieren, et al., 2012; Wagan, 2013 and FAO, 2016). This information has now been added to the said section of the PD and the above references have been uploaded to the References Folder/VCS CL 04 Folder in the Validation Library in the Dropbox.		
Documentation provided by Project proponent		
New version of PD. References: Copies of above references have been uploaded to the References Folder and the VCS CL 04 Folder in the Validation Library in the Dropbox. Investment Barriers: Copies of Annual Development Programme of Government of Sindh. Institutional Barriers: Protected Forests Chapter of Pakistan Forest Act, 1927. Technological Barriers: Statement by Sindh Forest Department that it has not received any normal/regular budget from Government of Sindh Finance Department for mangrove restoration. Ecological Barriers: Satellite images and maps to support the fact that none or only minimal natural regeneration has happened in the past due to these ecological barriers. Social Barriers: Table showing official human population growth rate statistics of Government of Pakistan regarding population growth rate in Thatta and Sujawal Districts, the two Project Area districts. Land Tenure Barriers: Government notification under which the mangrove lands have been declared Protected Forests, which are state owned property. Therefore, communities have no incentive to invest their private money in restoration of mangrove lands.		
VVB Assessment		**Date: 12/07/2021**
The PP has provided the requested information. **CL closed.**		

VCS CL ID	**05**	**Date: 28/05/2021**
Description		
Provide calculation of fossil fuel emissions (section 3.2.2.6).		
Project proponent response		**Date: 17/06/2021**
Spreadsheet provided.		
Documentation provided by Project proponent		
Fossil Fuel Emission DBC-1.xlsx		
VVB Assessment		**Date: 12/07/2021**
The PP has provided the requested information. **CL closed.**		

VCS CL ID	06	Date: 28/05/2021
Description		
Provide the following sources: 1. *Kauffman, J.B. and D.C. Donato. 2012 Protocols for the measurement, monitoring and reporting of structure, biomass and carbon stocks in mangrove forests. Working Paper 86. CIFOR, Bogor, Indonesia.* 2. *Fu, W. and Y. Wu. 2011. Estimation of aboveground biomass of different mangrove trees based on canopy diameter and tree height. Procedia Environmental Sciences 10:2189-2194.* 3. *Kirui, B, J. G. Kairo, and M. Karachi. 2006. Allometric equations for estimating above ground biomass of Rhizophora mucronata Lamk. (Rhizopheraceae) Mangroves at Gazi Bay, Kenya. Western Indian Ocean Journal of Marine Science 5(1):27-34.* 4. *Pakistan Forest Institute (Table 25).*		
Project proponent response		**Date: 17/06/2021**
The above sources 1-3 have been provided separately. *Pakistan Forest Institute:* The belowground biomass (BGB) equation was developed by the Pakistan Forest Institute (PFI) and is based on the generic BGB biomass equation from Komiyama et al. (2008): BGB = 0.199 * (wood density)$^{0.899}$ * DBH$^{2.22}$, where the wood density value is species-specific. When they were conducting their biomass surveys in 2018, PFI was using an aboveground biomass (AGB) equation for *Avicennia marina* from Dharmawan and Siregar (2008): AGB = 0.1848 * DBH$^{2.3524}$. Using a wood density that was weighted for the proportion of *A. marina* and *Rhizophora mucronata* that is found within the plantations (wood density: 0.62 and 0.83, respectively; proportion: 85% and 15%, respectively; which leads to a weighted value of 0.65), PFI developed a relationship between the Dharmawan and Siregar (2008) AGB equation with the Komiyama et al. (2008) generic BGB equation that related AGB to BGB without having to use a DBH value, which can be difficult to determine with the growth pattern of *A. marina*. This equation is: BGB = 0.6648 * ABG$^{0.9437}$. Although the Project chose to use different AGB biomass equations than what PFI originally used, this BGB equation is being kept and applied to both species. The relationship between BGB and AGB using these equations is 33 to 67, with more biomass in aboveground than belowground. The project believes that this is a conservative estimate because mangroves growing in more saline environments tend to have a more equal relationship if not more biomass belowground (Saintilan 1997).		
Documentation provided by Project proponent		
The above sources 1-3 have been provided separately. Also provided: Dharmawan and Siregar (2008); Saintilan (1997)		
VVB Assessment		**Date: 13/07/2021**

The PP has provided the requested sources. However, further clarification is required: 1. *Clarify where is provided the Carbon Fraction (0.48 t C t-1 d.m. for aboveground biomass and 0.39 t C t-1 d.m. for belowground biomass) within Kauffman, J.B. and D.C. Donato. 2012 Protocols for the measurement, monitoring and reporting of structure, biomass and carbon stocks in mangrove forests. Working Paper 86. CIFOR, Bogor, Indonesia.* **CL still open.**	
Project proponent response	**Date: 15/07/2021**
On page 26 of Kauffman and Donato, the default C concentration for belowground biomass is listed at 39%. On page 21, the range for C content for aboveground biomass is 46-50%. This same range is listed in the Blue Carbon Manual (Howard et al. 2014). All of Kauffman's papers use 39% for belowground and a midpoint of 48% for aboveground. See page 3 in Kauffman et al 2020 for the 48% value.	
Documentation provided by Project proponent	
Provided separately: Kauffman, J.B. and D.C. Donato. 2012 Protocols for the measurement, monitoring and reporting of structure, biomass and carbon stocks in mangrove forests. Working Paper 86. CIFOR, Bogor, Indonesia. Kauffman, J.B., M.F. Adame, V.B. Arifanti, L.M. Schile-Beers, et al. 2020. Total ecosystem carbon stocks of mangroves across broad global environmental and physical gradients. Ecological Monographs. 90(2): e01405. https://doi.org/10.1002/ecm.1405	
VVB Assessment	**Date: 06/08/2021**
The PP has provided the requested clarification. **CL closed.**	

VCS CL ID	**07**	**Date: 28/05/2021**
Description		
In section 3.3.3 of the PD, as required by the template, provide details regarding: • The organisational structure, responsibilities and competencies of the personnel that will be carrying out monitoring activities. • The policies for oversight and accountability of monitoring activities. • *The procedures for handling non-conformances with the validated monitoring plan.*		
Project proponent response		**Date: 17/06/2021**
Details regarding organizational structure and policies and procedures for monitoring of activities have been provided separately.		
Documentation provided by Project proponent		
New version of PD. Organizational structures, CVs of staff and Policies and Procedures for monitoring activities.		
VVB Assessment		**Date: 13/07/2021**
As it is required by the template of the PD, provide at least summaries of the information included in the documents provided separately. **CL still open.**		
Project proponent response		**Date: 22/07/2021**
Summary documents provided		
Documentation provided by Project proponent		
1) Policy and procedure for oversight, accountability and non-conformance handling in implementation of validated monitoring plan 2) Policy and procedure for community development monitoring plan 3) Policy and procedure for biodiversity monitoring plan		
VVB Assessment		**Date: 06/08/2021**
As required by the template, provide the summarized information within the PD. **CL still open.**		
Project proponent response		**Date: 10/08/2021**
Added to the new version of the PD.		
Documentation provided by Project proponent		

New Version of PD.	
VVB Assessment	**Date: 18/08/2021**
The PP has provided the requested information. **CL closed.**	

CCB Corrective action requests (CARs)

CCB CAR ID	**01**	**Date: 28/05/2021**
Description		
As required by the CCB&VCS combined PD template, section 2.1.1 shall be no more than one page.		
Project proponent response		**Date: 29/05/2021**
Section 2.1.1 has been shortened to fit one page.		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 13/07/2021**
The PP has made the adequate corrections. **CAR closed.**		

CCB Clarification requests (CLs)

CCB CL ID	01	Date: 28/05/2021
Description		
Provide the following evidence/documents: *a) GIS files of the project.* *b) Reports of SBIA workshops (section 2.1.8).* *c) Mangrove Stewardship Agreement model.* *d) Agreement between Indus Delta Capital Limited and The Sindh Forest Department, Government of Sindh (section 2.1.14).* *e) Financial model (section 2.1.20).* *f) Anti-discrimination and non-harassement assurance draft document (section 2.3.11).* *g) Grievance Redress SOP (section 2.3.12).* *h) Equal Employment Opportunity Policy (EEOP) (section 2.3.15).* *i) Health and safety plan (section 2.3.17).* *j) Forest Act* *k) Protocol for disputes resolution at the community level (section 2.5.6).* *l) Photo evidence of reforestation activities.*		
Project proponent response		**Date: 17/06/2021**
The evidence/documents as asked for have been provided separately.		
Documentation provided by Project proponent		
The evidence/documents as asked for have been provided separately.		
VVB Assessment		**Date: 13/07/2021**
The document of the d) Agreement between Indus Delta Capital Limited and The Sindh Forest Department, Government of Sindh is protected by password, which has not been provided. **CL still open.**		
Project proponent response		**Date: 22/07/2021**
Password for document provided separately.		
Documentation provided by Project proponent		

VVB Assessment	**Date: 06/08/2021**
Password not provided. **CL still open.**	
Project proponent response	**Date: 10/08/2021**
Password for document provided separately.	
Documentation provided by Project proponent	
VVB Assessment	**Date: 18/08/2021**
The PP has provided access to all requested documents. **CL closed.**	

CCB CL ID	**02**	**Date: 28/05/2021**
Description		
In section 2.1.1 of the PD, as required by the template, provide: • *The project's climate, community and biodiversity objectives.* • *An estimate of annual average and total GHG emission reductions and removals.*		
Project proponent response		**Date: 29/05/2021**
This information has now been added to the said section of the PD.		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**		

CCB CL ID	**03**	**Date: 28/05/2021**
Description		
In section 2.1.6 of the PD, as required by the template, provide information regarding the land ownership in the project area.		
Project proponent response		**Date: 17/06/2021**
The existing heading "Land use and economic activities" in section 2.1.6 in the PD has been modified as "Land ownership, land use and economic activities" and the following text has been added in the new version of PD: *"All lands in the Project Area are Protected Forests and state property. Therefore, their ownership vests in the Government of Sindh."*		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**		

CCB CL ID	**04**	**Date: 28/05/2021**
Description		
Section 2.1.14 of the PD states that the project start date is 19-February-2015. According to VCS Standard v4.1 section 3.7.3, AFOLU projects shall complete validation within five years of the project start date. Provide justification for the stated project start, for which the five-year period has expired.		
Project proponent response		**Date: 29/05/2021**
We have confirmation from Verra that the listing process was initiated in January 2020. *Requirement 3.7.6 applies, as we are using an activity method/ positive list:* *Standardised Methods* *3.7.6. Notwithstanding the requirements set out in Sections 3.7.1 – 3.7.5 above, projects applying a standardised method for determining additionality shall initiate the project pipeline listing process set out in the VCS Program document Registration and Issuance Process within the project validation timelines set out above. Validation may be completed any time thereafter.*		
Documentation provided by Project proponent		
Email from Verra.		
VVB Assessment		**Date: 13/07/2021**
The PP has provided adequate clarification and supporting evidence. **CL closed.**		

CCB CL ID	05	Date: 28/05/2021
Description		
In section 2.1.19 of the PD, as required by the template, describe the measures needed and designed to maintain and enhance the climate, community, and biodiversity benefits beyond the project lifetime.		
Project proponent response		**Date: 17/06/2021**

The following text has been added to section 2.1.19 in the new version of PD.

"The following measures have specifically been designed and are being implemented to maintain and enhance the climate, community, and biodiversity benefits beyond the project lifetime and to address any non-permanence related risks:

Institutionalisation of main Project interventions into regular functioning of Sindh Forest, Wildlife, Fisheries and other relevant Departments

The various Project interventions such as protection and sustainable management of restored mangrove forests, coastal and marine biodiversity conservation, and various supportive socio-economic development activities will be fully institutionalised into regular and everyday functioning of relevant departments, which will continually remain engaged with the local communities.

Capacitating and engaging community organisations

The various awareness raising, training, capacity building and continued engagement of local communities in an organised manner would have increased their knowledge and skills and improved attitudinal orientation for responsible and sustainable management of various coastal and marine resources including mangroves, fisheries, biodiversity and other resources.

Putting in place well-established and functional linkages with other partner organisations

Over the course of Project implementation during the sixty-year period, community will develop well-established and functional linkages with other partner organisations in the government sector, private sector, NGO sector and civil society. These symbiotic relationships will contribute to maintain and enhance the climate, community and biodiversity benefits of the Project beyond Project period.

Sustainable management of restored ecosystems and stable and increased availability of various ecosystem services

Since the various coastal and marine resources are now restored and brought under sustainable management regimes to the benefits of all segments of society. Therefore, there will be increased and stable availability of various ecosystem services (provisioning, regulating, supporting, cultural and information) and their benefits even beyond the Project period.

Diversification and increase in incomes of local communities

The various Project interventions will contribute to and result in sustained, diversified and increased incomes for the various socio-economic groups in the Project Zone, which will keep accruing beyond the Project period.

Employment and business opportunities Generation

Because of socio-economic development, environmental rehabilitation and social capital development in the form of knowledgeable and capacitated communities there will be available vast and varied

employment and business opportunities in the Project Zone. The restored economy, ecology and society will constitute an upward trend.

Decrease in cost of living

Due to addressing the various issues that were responsible for increased cost of living in the Project Zone, the cost of living will be brought down and hence the local communities will not be forced to resort to unsustainable resource use.

More efficient and effective allocation and utilisation of various coastal and marine as well as financial resources at the community level

Greater awareness raising and capacity building of local communities will lead to more efficient and effective allocation and utilisation of various coastal and marine as well as financial resources, thereby avoiding overexploitation and wastage and leading to resource conservation.

Increase in adaptive capacity and resilience to deal with various types of shocks

Communities over the Project's lifetime will develop the needed resources, skills, institutions, processes and strategies that will increase their adaptive capacity and resilience thereby enabling them to deal with all types of shocks and trends (economic, climate and other natural disasters).

Reducing threats to mangrove lands, biodiversity and institutionalizing biodiversity conservation and sustainable fishing through various institutional arrangements with local communities

Local communities have been made stewards of mangroves and biodiversity conservation and sustainable fishing through making them partners in their restoration, conservation, and sustainable management through the mechanism of Mangrove Stewardship Agreements, Biodiversity Stewardship Agreements and Fish and Sustainable Fishing Stewardship Agreements.

Project longevity

It is a sixty-year project with the option of extending up to 100 years. This generational longevity of the Project will ensure that the various Project benefits with respect to climate, community and biodiversity are now fully engrained into the working of society and therefore their sustained availability has now become part and parcel of their life."

Documentation provided by Project proponent	
New version of PD.	
VVB Assessment	**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**	

CCB CL ID	**06**	**Date: 28/05/2021**
Description		
In section 2.2.1 of the PD, as required by the template, describe the range of potential land use scenarios and the associated drivers of land use changes most likely to occur within the project zone in the absence of the project.		
Project proponent response		**Date: 29/05/2021**
An abbreviated version of the descriptions in section 3.1.4 have been added to section 2.2.1		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**		

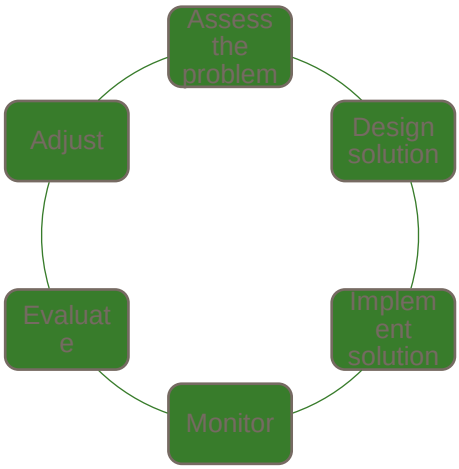
CCB CL ID	**07**	**Date: 28/05/2021**
Description		
In section 2.2.3 of the PD, as required by the template, demonstrate that project activities would not have been implemented under the without-project scenario due to significant financial, technological, institutional or capacity barriers.		
Project proponent response		**Date: 29/06/2021**
Project additionality has been demonstrated in Section 3.1.5 of the PD. Additionality is based on an activity method with positive list, which deems the Project additional without requiring the analyses referred to in the template and this clarification request. When combining VCS and CCB, the additionality analysis apparently comes back into play, which we regard as an inconsistency. However, based upon guidance from Verra#, we have added a reference to section 3.1.5, which gives the method used for demonstrating additionality. We believe that the already provided language in section 2.2.3 meets the guidance by Verra. #) The activity method of additionality determination does not apply to the CCB portion of the Project, and there is no specific method required to demonstrate community and biodiversity additionality. This requirement intends to show that the baseline scenario would continue for the community and biodiversity in the Project Area (in addition to the climate scenario) without Project intervention. Therefore, a demonstration of the baseline scenario of community and biodiversity in the Project Area and a demonstration of the Project activities is sufficient to demonstrate community and biodiversity additionality. For example, if the Project provides alternative sources of income for the community members, a demonstration that that source of income would not exist without the Project would be acceptable.		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 13/07/2021**
The PP has provided adequate clarification. **CL closed.**		

CCB CL ID	**08**	**Date: 28/05/2021**
Description		
In section 2.3.2 of the PD, as required by the template, describe how summary project documentation, including information required for G1.1-9, has been actively disseminated to communities.		
Project proponent response		**Date: 17/06/2021**
The following text has been added to section 2.3.2 in the new version of PD: *"Summary Project documentation, including information required for G1.1-9, has been actively disseminated to communities in a number of ways. The English language version of the summary Project documentation has been translated in Urdu (national language) and Sindhi (local language). Copies of these translated documents have been kept in and are available in the two regional Project offices (Keti Bandar and Shah Bandar) and the main Project office at Karachi. These documents have also been shared, discussed and fully explained to communities in various meetings and workshops. Further, these are uploaded to the Project website and are available in the virtual room.* *The Project is also working on developing a communication and information dissemination strategy to share all the needed information in a proactive and fruitful manner to the various stakeholder groups including the local communities. As part of this communication strategy, the Project is already sharing Project documents and all relevant information for awareness raising, getting feedback and capacity building.* *Summary information on monitoring results will also be actively disseminated to communities in line with the Project communication and information sharing strategy and plan."*		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**		

CCB CL ID	**09**	**Date: 28/05/2021**
Description		
In section 2.3.8 of the PD, provide more detail on the processes the project will use throughout its life to consider this input and adapt management accordingly.		
Project proponent response		**Date: 17/06/2021**

The following text has been added to the new version of PD in section 2.3.8:

"Project proponents recognise and acknowledge the fact that mangroves and other coastal and marine ecosystems restored under the Project are in a constant state of flux due to a number of climatic, ecological, and anthropogenic phenomena. Therefore, uncertainties abound in these systems as well as the effectiveness and outcomes of the various decisions taken regarding their management. To cater to these, Project proponents have developed an information collection, communication and consultation plan about the implementation of various Project interventions. Using this plan, a number of approaches and processes will be followed to regularly collect information about the outcomes of implemented decisions through surveys, focus group discussions, workshops, thematic studies, etc. Using the collected information, any potential problems and barriers hampering the achievement of objectives will be identified and assessed in Climate, Social and Biodiversity Impact Assessment Workshops. Using these workshops and in consultation with communities and other stakeholders, solutions to those problems will be designed. These solutions would then be implemented, monitored and evaluated. Any further adjustments will be made again, if there is need for such adjustments. This adaptive management process will be implemented in cyclic, systematic and iterative manner as diagrammatically depicted below:



Documentation provided by Project proponent	
New version of PD.	
VVB Assessment	**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**	

CCB CL ID	**10**	**Date: 28/05/2021**
Description		
In section 2.3.15 of the PD, as required by the template, explain how workers are selected for positions.		
Project proponent response		**Date: 17/06/2021**
The following text has been added at the end of existing text in section 2.3.15 in the new version of PD: *"From the above, it can be seen that people from the communities are and will be given an equal opportunity to fill all worker positions (including management) if the job requirements are met. The Project follows a well-laid out worker selection process as explained and given in its Policy and Procedure for workers selection for different positions. This Policy and SOPs document also explains that where relevant and needed, different measures are designed to ensure community members, including women and vulnerable and/or marginalized people, are given a fair chance to fill positions for which they can be trained."*		
Documentation provided by Project proponent		
New version of PD. Equal Employment Opportunity Policy and SOPs.		
VVB Assessment		**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**		

CCB CL ID	**11**	**Date: 28/05/2021**
Description		
In section 2.4.1 of the PD, provide further detail on the specific roles and responsibilities of the Sindh Forest Department and Indus Delta Capital Limited and their competencies and attributions.		
Project proponent response		**Date: 17/06/2021**

The following text has been added in the new version of PD in section 2.4.1:

"Based on their competencies and attributions, following are the specific roles and responsibilities of Sindh Forest Department and Indus Delta Capital:

Sindh Forest Department

- *Communication and liaison with different tiers of Government, including Federal Government, Provincial Government and Local Government*
- *Obtaining approvals and No Objection Certificates where applicable*
- *Liaison with sectoral departments such as Fisheries, Agriculture, Livestock, Environment, Local Government, etc.*
- *Liaison with policy makers and political leaders*
- *Law enforcement and prosecution of offenders*
- *Relevant policies and plans implementation*
- *Design, planning, implementation, monitoring and evaluation of mangrove restoration and coastal and marine biodiversity conservation activities*
- *Facilitation and liaison with local communities*
- *Obtaining of Free, Prior and Informed Consent of local communities*
- *Social organisation of local communities*
- *Execute Mangrove Stewardship Agreements (MSAs) with local communities*
- *Execute Fisheries Stewardship Agreements (FSAs) with local communities through Fisheries Department*
- *Execute Biodiversity Conservation Agreements (BSAs) with local communities through Wildlife Department*
- *Provision of satellite imageries and maps*
- *Facilitation in implementation of climate monitoring plan*
- *Facilitation in implementation of community monitoring plan*
- *Facilitation in implementation of biodiversity monitoring plan*
- *Any other function as per public-private partnership agreement between Government of Sindh and Indus Delta Capital Limited*

Indus Delta Capital Limited

- *Collect information for the preparation of Project Description (PD) Document*
- *Conduct baseline studies such as biodiversity study, socio-economic study, etc.*
- *Procure and engage experts*
- *Select relevant methodologies for preparation of PD Document*
- *Prepare PD Document*
- *Engage validators for PD validation*
- *Arrange funds for implementation of various Project interventions as per agreement executed with the Government of Sindh*
- *Implement the climate monitoring plan*

▪ *Implement the community monitoring plan* ▪ *Implement the biodiversity monitoring plan* ▪ *Prepare the MRV report* ▪ *Engage verifiers for verifying the MRV report* ▪ *Market the carbon credits* ▪ *Distribute the government share of carbon revenue to Government of Sindh* ▪ *Any other function as per public-private partnership agreement between Government of Sindh and Indus Delta Capital Limited."*	
Documentation provided by Project proponent	
New version of PD.	
VVB Assessment	**13/07/2021**
The PP has provided the requested information. **CL closed.**	

CCB CL ID	**12**	**Date: 28/05/2021**
Description		
In section 2.4.6, as required by the template, provide assurance that the project proponent and any other entities involved in the project design and implementation are not involved in, or complicit in, any form of corruption such as bribery, embezzlement, fraud, favoritism, cronyism, nepotism, extortion, and collusion.		
Project proponent response		**Date: 17/06/2021**
The following text has been added in the new version of PD in section 2.4.6: *"The Project has developed and is implementing an Anti-corruption Policy and SOPs which provide assurance that the Project proponent and any other entities involved in the Project design and implementation are not involved in, or complicit in, any form of corruption such as bribery, embezzlement, fraud, favouritism, cronyism, nepotism, extortion, and collusion.* *This Policy and SOPs is being implemented through relevant organs in the company and is being monitored at the highest level by the CEO."*		
Documentation provided by Project proponent		
New version of PD. Anti-Corruption Policy and SOPs.		
VVB Assessment		**13/07/2021**
The PP has provided the requested information. **CL closed.**		

CCB CL ID	**13**	**Date: 28/05/2021**
Description		
In section 2.4.7 of the PD, as required by the template, briefly describe the items to which the excluded information pertains.		
Project proponent response		**Date: 17/06/2021**
The following text has been added to the new version of PD in section 2.4.7: *"Commercially sensitive information that the Government of Sindh is required by law to keep confidential [section 10. (1) of Sindh Act No.XV of 2017 relating to Right to Information] has been excluded from the public version of the PD. It will be shared with VVB on need basis. This information as per requirements of VCS and/or CCB will be supplied freely to the VVB as appendices to this PD. Some of this information, however, will not be included in the public version.* *All information related to the determination of the baseline scenario, demonstration of additionality, and estimation and monitoring of GHG emission reductions and removals (including operational and capital expenditures) are not considered to be commercially sensitive and therefore have been provided in the public versions of the Project documents."*		
Documentation provided by Project proponent		
New version of PD. Sindh Act No. XV of 2017.		
VVB Assessment		**13/07/2021**
The PP has provided the requested information. **CL closed.**		

CCB CL ID	**14**	**Date: 28/05/2021**
Description		
In section 3.4.1 of the PD, as required by the template, identify potential changes in the local land use scenario due to these climate change scenarios in the absence of the project.		
Project proponent response		**Date: 17/06/2021**
The following text has been added in the new version of PD in section 3.4.1: *"Based on various studies conducted by relevant and competent bodies, likely regional or sub-national climate change and climate variability scenarios and impacts and potential changes in the local land use scenario due to these climate change scenarios in the absence of the Project are given below.* ▪ *Increased temperatures* ▪ *Erratic rainfall patterns* ▪ *Prolonged droughts* ▪ *Stronger winds* ▪ *Increased intensity and frequency of extreme weather events* *Potential changes in the local land use scenario due to these climate change scenarios in the absence of the Project include:* ▪ *Greater shoreline erosion due to strong wind currents and sea level rise* ▪ *Increased salinisation of terrestrial landscapes and loss of agricultural lands* ▪ *Saltwater intrusion into freshwater bodies* ▪ *Greater salinisation of underground aquifers* ▪ *Greater landward progression of inter-tidal zone* *These local land use scenarios will have impacts for local communities, their livelihoods as well as biodiversity."*		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**13/07/2021**
The PP has provided the requested information. **CL closed.**		

CCB CL ID	**15**	**Date: 28/05/2021**
Description		
In section 3.4.2 of the PD, as required by the template, describe how current or anticipated climate changes are having or are likely to have an impact on biodiversity conservation status in the project zone and surrounding regions.		
Project proponent response		**Date: 17/06/2021**

The following text has been added in the new version of PD in section 3.4.2:

"Current or anticipated climate changes are having or are likely to have an impact on the following in the Project Zone and surrounding regions:

Community well-being Impacts

Community well-being will be reduced due to loss of human lives and greater injuries, morbidity and diseases due to higher temperatures, extreme weather events, and greater occurrence of floods, droughts, disease pathogens, insects, pests and bites by dangerous and poisonous animals; loss of productive assets like crop lands; loss of crops and livestock due to greater floods damages, droughts, diseases, etc.; loss of income and livelihoods earning opportunities; loss of infrastructure and access to various services; increased cost of living due to greater cost involved in access to various services and inflation; displacements and migration necessitated by floods, droughts, etc.

Biodiversity Impacts

Biodiversity conservation status in the Project Zone and surrounding regions will be negatively affected as explained below:

- *Loss and fragmentation of coastal and marine habitats, including loss of food and shelter sources, due to sea level rise, loss of vegetation, shoreline erosion, increased salinity, greater temperatures on the surface of land and ocean and ocean acidification, etc.*
- *Loss of species and genetic diversity, particularly of endemic, rare and sensitive species which are not adapted to the new climatic situation and its greater variability*
- *Increased chances of poaching due to wildlife getting exposed and people capturing wildlife to meet their income and livelihoods needs*
- *Greater prevalence of diseases and pathogens and onslaught of invasive and exotic species*

Diversion of funds to cater to damages caused by climate change events instead of investing in wildlife and biodiversity conservation."

Documentation provided by Project proponent	
New version of PD.	
VVB Assessment	**13/07/2021**
The PP has provided the requested information. **CL closed.**	

CCB CL ID	**16**	**Date: 28/05/2021**
Description		
As required by the template for projects that intend to meet the Gold Level for climate change adaptation benefits (GL1), the community monitoring plan must also include indicators for adaptation benefits for communities.		
Project proponent response		**Date: 17/06/2021**
Following indicators for assessing and measuring adaptation benefits for communities have been included in the community monitoring plan in the new version of PD in Appendix 15: *"**Activity area-Adaptation benefits for communities*** *Key Result: Increase in adaptation benefits for communities* *SMART Objective: By 2027, 100 % of community members are reporting increased adaptation benefits* *Code: SIA074 Indicator: Number of fishermen reporting increased and stable fisheries catch per unit of fishing effort* *Code: SIA075 Indicator: Number of community members reporting reduction in number of hectares of shoreline eroded* *Code: SIA076 Indicator: Number of community members reporting reduction in hectares of landscape damaged by flood or tidal water* *Code: SIA077 Indicator: Number of community members reporting reduction in number of hectares of croplands affected by salt water intrusion* *Code: SIA078 Indicator: Number of community members reporting reduction in number of people who are forced to migrate due to climate change impacts."*		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 13/07/2021**
The PP has made the adequate changes. **CL closed.**		

CCB CL ID	**17**	**Date: 28/05/2021**
Description		
In section 4.5.3 of the PD, as required by the template, demonstrate that any barriers or risks that might prevent benefits going to marginalised and/or vulnerable smallholder/community members have been identified and addressed in row "Benefit Access" of the tables.		
Project proponent response		**Date: 17/06/2021**

The following text has been added in the new version of PD in section 4.5.3 for the Community Group 6 (Landless poor and other marginal groups) in the row Benefit Access so that any barriers or risks that might prevent benefits going to them:

"To ensure that marginalized and/or vulnerable smallholder/community members have access to project benefits, the following measures are being and will be taken:

Addressing the problem of elite capture of benefits

The whole communities will be informed of the various Project benefits and information related to various Project benefits will be shared in community meetings which will be held in open sessions.

Dealing with the problem of exclusion

The representation of small holders and marginal groups in various village level bodies such as village development committees, women organisations, MSAs, FSAs, etc. will be ensured.

Dedicated Project interventions for smallholders and marginal groups

A number of Project interventions have been specifically designed for poverty reduction and well-being improvement of small holders and marginal groups. These among others include specific Project activities (such as provision of solar system to small and poor communities living inside creeks), inclusion in MSAs, inclusion in FSAs, business support and facilitation to marginal groups and women, provision of loans and access to other financial resources, networking, etc.

Lack of access to information and knowledge and skills

Special modules and programs have been designed for awareness raising, training and capacity building of small holders and marginal groups as well as women.

Dealing with problem of exploitation

To deal with the problem of exploitation by lenders, purchasers, middlemen, employers and other agents, the following measures will be taken:

- *Linking to institutional credit providers such as Akhuwat*
- *Provision of direct credit through the Project mechanism*
- *Facilitation in provision of cold storage facilities for small scale fishers*
- *Facilitation in market access*
- *Engagement in various Project activities*
- *Skills and capacity building to negotiate with middlemen and employer for fair return and wages"*

Documentation provided by Project proponent
New version of PD.

VVB Assessment	**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**	

CCB CL ID	**18**	**Date: 28/05/2021**
Description		
In section 4.5.5 of the PD, as required by the template, demonstrate that women participate in or influence decision making.		
Project proponent response		**Date: 17/06/2021**

The following text has been added in the new version of PD in section 4.5.5:

"To ensure that the Project generates net positive impacts on the well-being of women and that women participate in or influence decision making, the Project is already taking and will further scale up the following measures:

Addressing the problem of men capture of benefits

Exclusive information meetings will be held with women whereby they will be informed of the various Project benefits.

Dealing with the problem of exclusion

To address the problem of women exclusion, women organisations have been and will be established throughout the Project Zone and women will be given representation in various forums established under the Project.

Dedicated Project interventions for smallholders and marginal groups

A number of Project interventions have been specifically designed for poverty reduction and well-being improvement of women. These among others include women health related interventions, focus on girls' education and adult literacy programs for women, special bursary schemes for girls, special business employment and opportunities for women in poultry farming, livestock rearing, kitchen gardening, Sindhi handicrafts making, crab farming, etc., provision of loans and access to other financial resources, networking, etc.

Lack of access to information and knowledge and skills

Special modules and programs have been designed for awareness raising, training and capacity building of women.

Dealing with problem of exploitation

To deal with the problem of exploitation by lenders, purchasers, middlemen, employers and other agents, the following measures will be taken:

- *Linking to institutional credit providers such as Akhuwat specifically for women*
- *Provision of direct credit through the Project mechanism targeted for women*
- *Facilitation in provision of facilities for business by women*
- *Facilitation in market access such as Design Houses in larger markets*
- *Engagement in various Project activities*
- *Skills and capacity building to negotiate with middlemen and employer for fair return and wages"*

Documentation provided by Project proponent
New version of PD.

VVB Assessment	**Date: 13/07/2021**
The PP has provided the requested information. **CL closed.**	

CCB CL ID	**19**	**Date: 28/05/2021**
Description		
As required by the template for project that intend to meet the Gold Level for climate change adaptation benefits (GL1), the biodiversity monitoring plan must also include indicators for adaptation benefits for biodiversity.		
Project proponent response		**Date: 17/06/2021**
Following indicators for assessing and measuring adaptation benefits for biodiversity have been included in the biodiversity monitoring plan in the new version of PD in Appendix 16: *"**Activity Area-Adaptation benefits for biodiversity*** *Key Result: Increase in adaptation benefits for biodiversity* *SMART Objective: By 2027, 100 % of community members are reporting presence of or increased biodiversity adaptation benefits* *Code: BIA047 Indicator: Number of community members in the Project Zone reporting presence or increased number of endemic, rare, vulnerable, threatened and endangered species* *Code: BIA048 Indicator: Number of community members in the Project Zone reporting presence or increased extent of landscape level ecosystems and mosaics that are characteristic of wetlands landscapes* *Code: BIA049 Indicator: Number of community members in the Project Zone reporting presence or increased extent of rare, threatened or endangered ecosystems, habitats or refugia* *Code: BIA050 Indicator: Number of community members in the Project Zone reporting presence or increased extent of at least one dimension of Key Biodiversity Areas such as increased ecological integrity, biological processes or irreversibility dimension, etc.* *Code: BIA051 Indicator: Number of community members in the Project Zone reporting presence or increased extent of trigger species, threatened or geographically restricted biodiversity or reduced threat status"*		
Documentation provided by Project proponent		
New version of PD.		
VVB Assessment		**Date: 13/07/2021**
The PP has made the adequate changes. **CL closed.**		