

Annex 14. Compliance with the Adaptation Fund’s Environmental and Social Policy and Gender Policy

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1. Introduction

The Environmental and Social Policy (ESP) of the Adaptation Fund requires that all projects be screened against the 15 principles and in all the components and activities planned. This policy ensures that projects supported by the Fund promote positive environmental and social benefits, and mitigate or avoid adverse environmental and social risks and impacts.

This document, present a detailed risk identification, categorization and Environmental. ESP has been prepared in support of the project titled: *“Reducing climate vulnerability and flood risks in coastal urban and semi urban areas in cities in Latin America”* prepared together with the Governments of Ecuador and Chile and the technical assistance of Development Bank of Latin America (CAF).

The project is located on precise localized places, in specific neighborhoods and cities in both countries, Ecuador and Chile. It consists of 3 components, 14 outputs and 37 activities, all clearly identified. Despite this, there are some unidentified sub projects (USP) consisting in some details of the activities related with the final designs of mitigation works and precise locations. . To cope with this, and following the advice of the AF reviewer, a comprehensive mechanism was developed for those USP activities described above to identify risks during the implementation phase. Implementing Entity would also be following specific final arrangement with the AF to cope and fulfill the environmental and social risk identification process and measures for this USP.

Along with it, implementation arrangements has been plan for the whole project activities and processes. The roles and responsibilities between the implementing entity (EI) and the executing entity (EE), have been accurate develop including the roles of each government and the technical staff of the project. All these aspects materializing the Environmental and Social Management Plan.

The ESMP was developed in a collaborative manner by the implementing entity (IE) and the executing entity (EE), including a systematic monitoring and evaluation arrangement during implementation phase.

The screening and preliminary analysis found that certain project activities could generate a number of limited adverse social and environmental impacts. The screening resulted in an overall social and environmental risk categorization of “Type B”. The ESMP is designed to avoid, and where avoidance is not possible, mitigate and manage these limited potential impacts.

The document is composed of the following sections: 1. Overview of the project including the project activities and 2. Risk identification and categorization.

1. Overview of the Project

The main objective of the project is to reduce vulnerability to climate-related floods, mudflows and landslides in three coastal cities by mainstreaming a risk-based approach to adaptation, building collaboration and networking, and developing a culture of adaptation. The project focuses on the hydro-meteorological hazards of mudflows in Antofagasta and Taltal, and flooding and landslides in Esmeraldas. The expected mid-term impacts are improved enabling conditions to sustain DRR adaptation in the three cities. In the long-term, it is expected that this will result in improved adaptive capacity. It is also envisioned that the lessons of the project are useful to other countries in Latin America and the Caribbean, and other regions of the world.

The project has three components:

Component 1	Priority actions to increase resilience in the three cities
Component 2	Strengthen capacities for adaptation
Component 3	ICTs and partnership between coastal cities in Latin America

Outputs and activities of this components, as shown in the table below.

In the Full Proposal document seven (7) Unidentified Sub-Projects (USP) were presented from thirty-seven (37) activities as presented in Table 1. Expected Outputs and Activities:

1. Project Activities

The proposed project will have the following activities:

Table 1. Expected Outputs and Activities

Expected Outputs	Activity
Project Components : 1. Priority Actions to increase resilience	
1.1. Stormwater management plan for Antofagasta	1. Updated the stormwater management plan for Antofagasta.
1.2. Green infrastructure plan for Esmeraldas	2. Prepare the green-infrastructure plan for Esmeraldas. 3. Update the municipal land use planning regulations in Esmeraldas.
2.1. Mudflow control infrastructure in Antofagasta	4. Update the designs, including climate change considerations in Antofagasta. 5. Antofagasta: Construction of a series of 14 decantation ponds and 36 concrete retaining walls located in Quebrada Bonilla (31 in Bonilla North and 5 in Bonilla South). Note: Activity 5 is considered USP, due to the need to count on the update of the final structural designs with the climate change scenarios. (See the USP mechanism and the implementation arrangements planned to cope with the AF ESP standards)
2.2. Landslide mitigation works in Esmeraldas	6. Construction of (i) profile conformation of slopes, (ii) construction of collection and drainage channels, (iii) construction of retaining walls where necessary, (iv) anchor works were necessary, and (v) vegetation of slopes, in Esmeraldas. 7. Revegetation of 100 ha in Cerro Gatazo in Esmeraldas. 8. Declaration of protected forests by the GADE in collaboration with MAE, with the intention of preventing them of being inhabited in the future in Esmeraldas. Note: Activities 6 and 7 of this output are considered USP, due to the need to count on the final eco-engineering designs. (See the USP mechanism and the implementation arrangements planned to cope with the AF ESP standards).
3.1. Weather radar in Esmeraldas and	9. Identification of the precise location for the radar in Esmeraldas 10. Identification of the precise location for the storm detection system's sensors in Antofagasta.

a storm detection system in Antofagasta	<p>11. Installation of a meteorological doppler radar in Esmeraldas.</p> <p>12. Installation of a storm detection system in Antofagasta .</p> <p>Activities 11 and 12 of this output are considered USP, due to the need to count with the precise locations. (See the USP mechanism and the implementation arrangements planned to cope with the AF ESP standards).</p>
3.2. Increased number of meteorological stations in Antofagasta, Taltal and Esmeraldas	<p>13. Installation of automatic meteorological stations in the watersheds of Antofagasta, Taltal (i.e., Teaone river)</p> <p>14. Installation of automatic meteorological stations in the watersheds of Esmeraldas (i.e., Esmeraldas river).</p> <p>Activities 13 and 14 of this output are considered USP, due to the need to count with the precise locations. (See the USP mechanism and the implementation arrangements planned to cope with the AF ESP standards).</p>
4.1. Enhanced public warning system in Antofagasta and Taltal	<p>15. Installation of sirens (megaphones) in Antofagasta and Taltal.</p> <p>16. Update the mudflow evacuation maps for Antofagasta and Taltal .</p> <p>17. Annual evacuation drills in Antofagasta and Taltal.</p> <p>18. Training of local community leaders from juntas de vecinos and campamento committees on each gorge in Antofagasta and Taltal.</p>
4.2. Pilot flood warning system in Esmeraldas	<p>19. Installation of sirens (megaphones) in Luis Vargas Torres Island in Esmeraldas.</p> <p>20. Pilot evacuation drill implemented by GADE, in close coordination with SGR, the police and relevant entities (e.g., police, fire brigades).</p> <p>21. Training of local leaders to facilitate evacuation of vulnerable groups and take community action to guard the sirens and private property in Esmeraldas.</p>
4.3. Evacuation route maps and signals in Antofagasta, Taltal and Esmeraldas	<p>22. Update the mudflow evacuation maps for Antofagasta and Taltal</p> <p>23. Print in large format (e.g., banners or large posters) the maps and the signals of evacuation routes and shelters for both countries.</p> <p>24. Place in high-transit areas the maps and the signals of evacuation routes and shelters in Taltal, Antofagasta and Esmeraldas.</p> <p>25. Digital maps for both countries.</p> <p>26. Place in strategic websites and social media the maps and disaster risk documentation for access of both countries</p>
Project Components : 2. Strengthen capacities for adaptation.	
5.1. Course on risk-based adaptation in coastal cities	<p>27. Develop and implement regional online course lead by the Protection Academy of Chile (APC). The course will have a blended approach, combining self-paced activities with online group sessions to interact with trainers and other participants. This course is specific for technical staff in both countries.</p> <p>28. Develop a training of trainers for both countries.</p> <p>29. Implement three courses to be open in years 3, 4 and 5. The courses will be open to personnel from the local governments of Antofagasta, Taltal and Esmeraldas, and other cities of the region. This course is specific for technical staff in both countries.</p>
6.1. Public communication and education strategies for	<p>30. Develop information to be placed in the regional electronic platform for both countries.</p>

Antofagasta, Taltal and Esmeraldas.	31. Technical staff from the Municipality of Esmeraldas (GADE) and other local entities will be trained on the use of green infrastructure for DRR, and a situation analysis will be prepared. 32. Socialization of the green infrastructure plan with local stakeholders in Esmeraldas - Ecuador.
6.2. Narrators' initiative initiated	33. Develop the Narrator's initiative for Ecuador (Esmeraldas) 34. Develop the Narrator's initiative for Chile (Antofagasta – Taltal)
Project Components : 3. ICTs and partnership between coastal cities in Latin America	
7.1. Electronic platform to facilitate communication among stakeholders and dissemination of lessons and best practice	35. Established and nurture the communities of practice for both countries. 36. Develop a regional electronic platform for both countries.
7.2. Lessons and best practice documented and disseminated	37. Document and disseminate the lessons and best practice of the project for both countries.

2. Risk identification and categorization

Using Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy; the Social and Environmental Risks Screening Checklist and the Identification and preliminary Management of Social and Environmental Risks were developed.

The process of risk screening for the current project activities developed followed the 15 principles of the ESP. Including Principles 1 (Compliance with the law), 4 (Human rights) and 6 (Core labor rights) which always apply, the other 12 principles were screened in relation to the project outcomes, outputs and activities were screened. Establishing relevance between these principles and project elements was one of the outcomes of the risk identification process.

1.1. ESP Risks Identification

Based on the checklist of the AF ESMS procedures, environmental and social risks were identified using the following checklist (Table 1).

The risk identification is developed taking into account the AF's ESP Guidance document for Implementing Entities on compliance with the Adaptation Fund Environmental and Social Policy and the steps presented in the Manual of Basic Environmental and Social Management System procedures and functions at National Implementing Entities for the compliance of each principle.

Table 2. Evidence Base Identification will assess all of the components of the project; Component 1: Reducing climate vulnerability and flood risk in coastal urban and semi urban areas in cities in Latin America; Component 2: Strengthen capacities for adaptation and Component 3: ICTs (Information and communications technology) and partnership between coastal cities in Latin America. Table 1 has three columns, column 1 refers to the **Checklist of E&S Principles**, and column 2 refers to the **Questions**,

which will help to guides if with different type of actions or documentations to assess if the principle has a risk of no compliance. Column 3 refers to the answer presented by each country differentiated. The answers YES or NO mean if the action, activity, analysis, documentation, etc. was done for the identification of the risk. Column 4, describes which evidence in the Full Proposal document supports the answers of YES or NO of column 3.

After having the Base Identification, Table 3. shows the risk Identification per AF E&SP allowing to determine which principle is vulnerable of not being complied.

Table 2. Evidence Base Risk Identification

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
1. Compliance with the law	1.1. Has the project identified all the specific, applicable domestic and international laws, regulations, standards, procedures and permits that apply to any of its activities?	Chi – YES Ecu - YES	The project in Annex 18 “Applicable domestic and international laws that apply” identifies the different domestic and international laws, regulations, standards, procedures and permits that apply to the project.
	1.2. Does the Project demonstrate any non-compliance with any applicable national law?	Chi – NO Ecu – NO	<p>The project does not show any non-compliance with applicable national law.</p> <p>However, an update of the designs presented in Annex 11 and Annex 12 is needed with climate change scenarios of Chile and Ecuador.</p> <p>For the above, in Ecuador the output related to “Landslide mitigation infrastructure in Cerro Gatazo – Esmeraldas” have follow the rules to obtain the SUIA Environmental Registry in accordance with the Environmental Management Law (Law 37 of 1999, coded in 2004).</p> <p>Related with the Chile output “Mudflow control infrastructure in Quebrada Bonilla”, the project have follow the rules to obtain the Environmental Impact Declaration (DIA) in accordance with the Environmental Law (Law 19,300) amended by Law 20,417 of 2010 , and Supreme Decree 40/2012 of 2012 (regulation for the environmental impact assessment system). Article 10 of Law 19,300.</p>
	1.3. Has the project identified activities that may require prior permission (such as planning permission, environmental permits, construction permits, permits for water extraction, emissions, and use or production or storage of harmful substances)	Chi – YES Ecu - YES	<p>As it has been specified above, the project after approval has to actualize the designs with the climate change scenarios of Chile and Ecuador. After this, the Environmental Registry and the Environmental Impact Declaration DIA have to be obtained.</p> <p>In general terms, identified activities may require prior permission. The update of the final structural designs with the climate change scenarios are listed as USP. (See the USP mechanism and the implementation arrangements planned to cope with the AF ESP standards.</p>

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
	1.4. Has the project identified environmental and social safeguarding requirements, other than those of the AF (e.g. national or of co-financing entities).	Chi – NO Ecu - NO	CAFs IAS (Environmental and Social Inform) and UNDP Risk identification has not identified other or additional safeguarding requirements.
2. <i>Access and Equity</i>	2.1. Has the project identified benefits and its geographical area of effect?	Chi – YES Ecu - YES	<p>The beneficiaries were identified during the Stakeholder Analysis and the different workshops developed in Antofagasta, Esmeraldas and Taltal.</p> <p>See Annex 08. Stakeholder analysis in Antofagasta and Taltal (Chile) and Annex 09. Stakeholder analysis in Esmeraldas (Ecuador) and Annex 04. Memoirs of inception and validation workshops.</p> <p>Different social organizations participated and in group decided which area to be attended was priority.</p> <p>In Annex 04 in Esmeraldas workshops in the pages 27, 28, 63, 80, 81, 89 can be viewed that the community decided where and which type of adaptation measure was preferable.</p> <p>In Annex 04 in Antofagasta and Taltal workshops, in page 9, 102, 109, 116.</p>
	2.2. Has the project identified any marginalized or vulnerable groups among potential project beneficiaries?	Chi – YES Ecu - YES	<p>The vulnerable groups were identified during the Stakeholder Analysis and the different workshops developed in Antofagasta, Esmeraldas and Taltal.</p> <p>See Annex 08. Stakeholder analysis in Antofagasta and Taltal (Chile) and Annex 09. Stakeholder analysis in Esmeraldas (Ecuador) and Annex 04. Memoirs of inception and validation workshops.</p> <p>Also in the Full Proposal Document in section “Vulnerable Groups and Gender Situation” it is described.</p> <p>In the Full Proposal Document in sections “National and Local Situation in Chile and Ecuador” is described specifically the location of the project and the neighborhoods where the project will take action.</p>

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
			<p>Specific women beneficiaries in Antofagasta where identified and where subject for the workshops of 6 and 7 of July 2017. For this, the workshops were established during the hours they could assist.</p> <p>In Esmeraldas the location of the project has identified that the Neighborhood 20 de Noviembre has very poor people who has settled in an informal manner at the hillside of Cerro Gatazo.</p>
	2.3. Has the project identified the existing risk to access to the essential services and rights indicated in the principle?	Chi – NO Ecu - YES	<p>Ecuador: The project activities for green and gray infrastructure in Cerro Gatazo in Esmeraldas will take place especially near human settlements in neighborhood 20 of Noviembre (see Figure 17. Location of the largest landslide of January 2016 (Image google earth 2017), which may hamper the access to basic and essential services. This may be caused because of the truck traffic increment. Services like mobility, clean air, energy, housing, may be affected.</p> <p>Chile: The gray infrastructure will take place far away from the neighbor that will be benefit (see in Figure 12. Location of Mudflow Control Infrastructure in Antofagasta of the Full proposal). There is no risk of obstructing the access to basic and essential services.</p>
	2.4. Has the project described the mechanism of allocating and distributing project benefits, and how this process ensures fair and impartial access to benefits?	Chi – NO Ecu - NO	<p>The project will not have differentiated benefits to develop a mechanism of allocating and distributing project benefits as it is not an agricultural project but a risk reduction project.</p> <p>The process for the grey and green infrastructure has to promote the local work and for component 2 and 3 invitations for the community with the social organizations will have to be done.</p>
	2.5. Has the project developed stakeholder and local authorities' consultations?	Chi – YES Ecu - YES	Yes, this can be viewed in Annex 04. Memoirs of inception and validation workshops ver. 2018 01
	2.6. Has the project presented a mechanism to ensure participation of communities,	Chi – NO Ecu - NO	The project should prepare in the ESMP a mechanism to ensure participation of communities, marginalized, vulnerable groups, stakeholder and local authorities'.

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
	marginalized, vulnerable groups, stakeholder and local authorities'?		For the above a Local Social Specialist will be part of the project team.
3. <i>Marginalized and Vulnerable Groups</i>	3.1. In the influence area of the project has there been identified the presence of marginalized or vulnerable groups, including but not limited to children, women and girls, the elderly, indigenous people, tribal groups, displaced people, refugees, people living with disabilities and people living with HIV/AIDS?	Chi – YES Ecu - YES	<p>In Annex 08. Stakeholder analysis in Antofagasta and Taltal (Chile) and Annex 09. Stakeholder analysis in Esmeraldas (Ecuador) present the presence of vulnerable groups.</p> <p>Ecuador: Presence of indigenous people and afro-ecuadorians communities as described in the full proposal in paragraphs 41 and 42 in Esmeraldas have been identified.</p> <p>Chile: In Antofagasta and Taltal is has been identified marginalized people living in campamentos as described in paragraphs 24 – 28 in the full proposal and figure 7 and 8.</p> <p>In the full proposal it is described the finding in the section of Vulnerable groups and gender situation y page 23.</p>
	3.2. Has the project described the characteristics of any marginalized or vulnerable groups, identifying their particular vulnerabilities that would or could make them disproportionately vulnerable to negative environmental or social impacts caused by the implementation of the activities of the project?	Chi – NO Ecu - NO	<p>The project has identified marginalized and vulnerable groups both in Chile and Ecuador as stated in the previous question.</p> <p>For the above, it is observed that the project has intended to promote the integration of the marginalized groups specially in Component 2. Strengthen capacities for adaptation in Outcome 6. Local population and government personnel with increased awareness of climate-related risks (floods, landslides, mudflows) with the Public communication and education strategies and the Narrators' initiative.</p>
4. <i>Human Rights</i>	4.1. Has the host countries been cited in any Human Rights Council Special Procedures, being on the list of thematic or country mandates?	Chi – NO Ecu - NO	<p>None of the countries has been cited in any Human Rights Council Special Procedures. This is presented in Annex 18. Applicable domestic and international laws that apply</p> <p>This were reviewed for each country.</p> <ul style="list-style-type: none"> • Human Rights Council Special Procedures thematic mandates • Human Rights Council Special Procedures country mandates

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
			<ul style="list-style-type: none"> ILO Declaration of Fundamental Principles and Rights at Work
	4.2. Is there a risk that rights-holders do not have the capacity to claim their rights?	Chi – NO Ecu - NO	There is a grievance mechanism presented in the ESMP Annex 15.
	4.3. Has the project covered human rights issues during stakeholder consultations during project formulation?	Chi – YES Ecu - YES	Human rights issues were addressed with recognition during the consultation meetings with local populations in the design process. Concerns on the marginalized and vulnerable groups were communicated and considerations on women, the elderly, children and people with disability were raised in the development of evacuation protocols.
	4.4. Has the project included the findings of the consultations on human rights issues in the project document?	Chi – YES Ecu - YES	The findings on human right issues during the consultations contributed to designing a human right-based project and details of the consultations are presented in Annex 04, Annex 08 and Annex 09. This applies the major principles inherent in the Articles of the Declaration of Human Rights, in regards to impartiality without distinction of race, color, sex, language, national or social origin, property, social status, and the universal right of human being to life, liberty and the security of person.
5. <i>Gender Equity and Women's Empowerment</i>	5.1. Has the project identified activities that are known to exclude or hamper a gender group based on legal, regulatory or customary grounds?	Chi – NO Ecu - NO	<p>Neither in Chile nor in Ecuador any of the activities of grey, green infrastructure, early warning system related to the project could harm any gender group in a discriminatory way based on legal, regulatory or customary grounds.</p> <p>National Legislation</p> <p>For Ecuador the precise: Institutional gender policy (2016 – 2019). In the Ecuadorian constitution: Article 11 numeral 2, establishes: "The exercise of the rights will be governed by the following principles ... 2. All people are equal and enjoy the same rights, duties and opportunities. No one shall be discriminated against on grounds of [...] sex, gender identity ...; Nor by any other distinction, personal or collective, temporary or permanent, whose object or result is to impair or nullify the recognition, enjoyment or exercise of rights".</p>

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
			For Chile it exists the The Ministry of Women and Gender Equity - Law Nº 20.820
	5.2. Has the project conduct or consult a gender analysis of the supported area, describing the current situation of the allocation of roles and responsibilities in the area?	Chi – NO Ecu - NO	It is not necessary to do a gender analysis describing the current situation or allocation of roles; taking into account that this is a reduction disaster risk project placed in urban areas where men and women responsibilities are the same.
	5.3. Has the project identified elements that maintain or exacerbate gender inequality or the consequences of gender inequality?	Chi – NO Ecu - NO	The project has identified that there is the same risk for women and men taking into account that both may be harmed in case of disaster.
	5.4. Has the project identified particular vulnerabilities of men and women that would or could make them disproportionately vulnerable to negative environmental or social impacts caused by the outputs / activities of the project?	Chi – NO Ecu - NO	The project has identified that there is the same risk for women and men taking into account that both may be harmed in case of disaster.
6. <i>Core Labour Rights</i>	6.1. Has the project determined if the host country has ratified the eight ILO core conventions	Chi – YES Ecu - YES	Both countries have International Labour Organization (ILO). See annex 18.
	6.2. Has the project reviewed the latest ILO assessments of application of the standards in the country?	Chi – YES Ecu - YES	Both countries have ratified International Labour Organization (ILO). See annex 18. Ecuador: http://www.ilo.org/gateway/faces/home/ctryHome?locale=ES&countryCode=ECU&_adf.ctrl-state=iob1b2x2q_21 http://www.ilo.org/gateway/faces/home/ctryHome?locale=en&countryCode=ECU&_adf.ctrl-state=iob1b2x2q_58 Chile: http://www.ilo.org/gateway/faces/home/ctryHome?locale=EN&countryCode=CHL&_adf.ctrl-state=iob1b2x2q_113

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
			http://www.ilo.org/dyn/normlex/en/f?p=1000:11110:0::NO:11110:P11110_ISO_CODE:CHL
	6.3. Has the project identified how the ILO core labour standards are incorporated in the design and the implementation of the outputs / activities' project?	Chi – YES Ecu - YES	The project mainstream core labour rights in all the actions and at different levels. Ecuador and Chile have mechanisms and laws related with labour rights. (Organic Law for the defense of labour rights - Ecuador. Organic Law for the defense of labour rights – Chile). Both countries have ratified the eight core labour conventions, and in general face similar challenges like child labour and discrimination in respect to employment and occupation. All the procurement process will follow the EE - UNDP Financial Regulations and Rules (2012) as well as a sustainable procurement process including core labour rights. UNDP follow four key principles related with procurement practices: 1. Best value for money; 2. Fairness, integrity and transparency; 3. Effective international competition and 4. The interest of UNDP.
	6.4. Has the project describe the common labour arrangements in the sector(s) in which the project will operate, with particular attention to all forms of child labour and forced labour.	Chi – YES Ecu - YES	As a management measure to assure the alignment of all the activities of the project with the compliance of core labour rights, the Implementing and Executing entities for the project obey to the ILO labour Standards and national labour laws. All the procurement process will follow the EE - UNDP Financial Regulations and Rules (2012) as well as a sustainable procurement process including core labour rights. UNDP follow four key principles related with procurement practices: 1. Best value for money; 2. Fairness, integrity and transparency; 3. Effective international competition and 4. The interest of UNDP.
7. <i>Indigenous Peoples</i>	7.1. Has the project identified if indigenous peoples are present in the area of influence?	Chi – NO Ecu - YES	Ecuador: In the full proposal in paragraph 62 the project has identified Chachis. Chachis are an indigenous group that live in the tropical forests of the Esmeraldas province, where they reside in family-related communities (called centros Chachi). The national population is about 8000 people, located in 46 centros. Their territory is aprox. 105.000 hectares and is included into three national protected areas. The Chachi families in Luis Vargas Torres island are settlers that came to the city of

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
			Esmeraldas to study and work (Bonilla, 2014); they have been affected by former floods (Bonilla, 2016c).
	7.2. Has the project quantify the groups identified of indigenous peoples?	Chi – NO Ecu - YES	No. This was not possible because as it is an urban project they do not present themselves as indigenous people but as Esmeraldas citizens. It is recommended that during the implementation of the project there is a special call of workshop for them to encourage their participation in the project. In Chile in Antofagasta and Taltal there are no indigenous people differentiation.
	7.3. Has the project determined if there are provisions for a realistic and effective Free, Prior, Informed Consent process, giving a community the right to give or withhold its consent to proposed projects that may affect the lands they customarily own, occupy or otherwise use?	Chi – NO Ecu - NO	This aspect is not relevant for the project taking into account that are urban areas and not rural ones and it is not needed consent to proposed activities. The project where the Chachis are located will intervene with the installation of sirens, megaphones, maps, signs that are part of the early warning system.
	7.4. Has the project provided a summary of any reports, specific cases, or complaints that have been made with respect to the rights of indigenous peoples by the Special Rapporteur on the rights of indigenous peoples and that are relevant to the project?	Chi – NO Ecu - NO	The entire community and social leaders of the Luis Vargas Torres Island were invited to the different workshops developed in Esmeraldas it was not possible to identify them separately. However, it is recommended that the Grievance mechanism is in Chachi Language and that the community participate in the project.
8. <i>Involuntary Resettlement</i>	8.1. Has the project determined if it is voluntary or involuntary resettlement?	Chi – NO Ecu - YES	For Chile in Antofagasta there is no risk of voluntary or involuntary resettlement, because as it was mentioned the activities of the gray infrastructure will take place far from the human settlements. In Ecuador, there is a risk of probable temporary resettlement based on the characteristic that the gray and green infrastructure activities will take place near human informal settlements, which may be affected by the increment of traffic for the works.

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
			Economic displacement may be caused if local informal stores in the garages of the houses have to close. However, also economic opportunities can appear, such as working for the activities in the implementation of gray and green infrastructure.
	8.2. Has the project identified stakeholders whose livelihoods may be affected, directly or indirectly?	Chi – NO Ecu - YES	<p>For Chile in Antofagasta there is no risk that livelihoods may be affected, because as it was mentioned the activities of the gray infrastructure will take place far from the human settlements.</p> <p>In Ecuador, there is a risk of probable temporary livelihoods affectation based on the characteristic that the gray and green infrastructure activities will take place near human settlements, caused by the increment of traffic for the works.</p> <p>Livelihoods may be affected caused if local informal stores in the garages of the houses have to close. However, also economic opportunities can come for locals if working in the construction of the infrastructures.</p>
	8.3. Has the project identified stakeholders whose assets or access to assets may be affected, directly or indirectly, and if this may lead to resettlement and its consequences including indemnification, compensation, etc.	Chi – NO Ecu – NO	<p>For Chile in Antofagasta there is no risk of affecting assets, because as it was mentioned the activities of the gray infrastructure will take place far from the human settlements.</p> <p>In Ecuador, there is no risk that the stakeholders assets will be affected taking into account as shown in Annex 07 in the Photographs in Esmeraldas, they houses have been already semi destroyed because of the mudflow in Cerro Gatazo.</p> <p>As presented previously, there is a risk of affecting basic services as mobility, clean air, energy, housing, may be affected.</p> <p>It is important that the project provide well-informed rights, consultation, and offered technically, economically, and socially feasible temporary relocations alternatives or fair and adequate compensation.</p>
9. <i>Protection of Natural Habitats</i>	9.1. Has the project identified all the critical natural habitats in the region that may be affected? The area considered should be large enough to be credible and be chosen in function of the	Chi – NO Ecu - NO	In Ecuador, Output 2.2. Landslide mitigation works in Esmeraldas will be developed in the urban area of Esmeraldas and Cerro Gatazo is not considered as in protected areas or high value conservation areas.

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
	<p>impact generating agent (e.g. noise) and an appreciation of its propagating ability. The habitats to be considered include all those recognized as critical in any way, be it legally (through protection), scientifically or socially.</p>		<p>In Chile, Output 2.1. Mudflow control infrastructure in Antofagasta will not intervene in protected areas or high value conservation areas. The exact localization is presented in the Proposal in the Quebrada Bonilla.</p> <p>In both countries that Output 3.1. Weather radar in Esmeraldas and a storm detection system in Antofagasta will be developed the installation of them will not involve protected areas or high value conservation areas.</p> <p>Finally Output 3.2. Increased number of meteorological stations in Antofagasta, Taltal and Esmeraldas also will not take place in protected areas or high value conservation areas.</p> <p>However, as the localization of the radars, meteorological stations, storm detection system are not precisely defined now. This Unidentified Sub Project will need to undergo detailed screening, an additional consultation process, the development of mitigation measures and a strict approval method developed.</p> <p>The project will not intervene in any Natural Habitat taking into account that is developed in urban areas.</p> <p>The above is described in the full proposal in paragraphs 46 – 51.</p>
	<p>9.2. Has the project identified for each critical natural habitat, the mechanism by which it is particularly vulnerable?</p>	<p>Chi – NO Ecu – NO</p>	<p>This does not apply taking into account the above already mentioned.</p>
	<p>9.3. Has the project considered all the activities to identify actual risks for each of the natural habitats identified taking into account the specific characteristics of the activity (location, dimension, duration etc.) and the vulnerability mechanism(s) of each habitat identified.</p>	<p>Chi – NO Ecu – NO</p>	<p>This does not apply taking into account the above already mentioned.</p>
<p>10. Conservation of Biological Diversity.</p>	<p>10.1. Has the project identified all the elements of biodiversity interest in the region that may be affected?</p>	<p>Chi – NO Ecu - YES</p>	<p>The project implementation in Chile does not represent any risk to reduction or loss of biological diversity or the introduction of known invasive species.</p>

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
	The area considered should be large enough to be credible and be chosen in function of the impact generating agent and an appreciation of its propagating ability. It is important in the identification of the elements of biodiversity interests not to limit this to the species level but to include all elements of biodiversity interest, including landscapes, ecosystem processes, habitats, and hydrological cycles, processes of erosion and sedimentation and interactions between taxa. Include all elements enjoying local or international protection		In Ecuador in Component 1. Priority actions to increase resilience; Outcome 1. Enhanced plans and green infrastructure reduces vulnerability to floods, landslides and mudflows in three coastal cities; Output 1.2. Green infrastructure plan for Esmeraldas. And in Outcome 2. Reduced vulnerability to floods, landslides and mudflows in two coastal cities; Output 2.2. Landslide mitigation works in Esmeraldas. Specially in in Paragraphs 50, 51, 84, 163 and 164 it is describes the possibility of introduction of non-endemic species for the stabilization of Cerro Gatazo in Esmeraldas may pose a risk for the project. However, the project avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species.
	10.2. For each identified biodiversity element, has the project identified the mechanism by which it is particularly vulnerable? (Changes in flow regime or water quality for a seasonal wetland or disruption of migration routes).	Chi – NO Ecu - YES	Taking into account the previous as the decision of which species will be used, this Unidentified Sub Project will need to undergo detailed screening, a consultation process, the development of safeguard measures and a strict approval method developed. This is described in Section III.C and in should be presented in the ESMP.
	10.3. Has the project identified the potential of introducing – intentionally or accidentally – known invasive species?	Chi – NO Ecu - YES	The introduction of non-endemic species for the stabilization of Cerro Gatazo in Esmeraldas may pose a risk for the project. (such decision will come when USP intervention are completely developed) The project avoids any significant or unjustified reduction or loss of biological diversity or the introduction of known invasive species. The project implementation in Chile does not represent any risk to reduction or loss of biological diversity or the introduction of known invasive species. Though, the project for slope stabilization in Cerro Gatazo may have a risk of introduction of non-endemic species, as it can be the use of vetiver as an option of non-native grass widely used worldwide for slope stabilization in Ecuador. As the decision of which species will be used, this Unidentified Sub Project will need to undergo detailed screening, a consultation process, the development of safeguard measures and a strict approval method developed.

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
	10.4. Has the project identified the use of living modified organisms resulting from modern biotechnology?	Chi – NO Ecu - NO	This question does not apply to the project because it will not intend to use of living modified organisms resulting from modern biotechnology.
11. <i>Climate Change</i>	11.1. Has the project determined if it belongs to a sector mentioned in the Guidance document for which a greenhouse gasses emission calculation is required? <ul style="list-style-type: none"> Energy, transport, heavy industry, building materials, large-scale agriculture, large-scale forest products, and waste management. 	Chi – YES Ecu – YES	Two activities are referred to gray infrastructure implementation in the construction sector. There is one activity that presents 100.000 ha for reforestation (not forest products). The rest of the activities, none of them are part of the list mentioned in the Guidance document.
	11.2. Has the project carry out a qualitative risk identification for each of the following drivers of climate change: <ul style="list-style-type: none"> Emission of carbon dioxide gas from the use of fossil fuel and from changes in land use methane and nitrous oxide emissions from agriculture emission of hydrofluorocarbons perfluorocarbons sulphur hexafluoride other halocarbons, aerosols, and ozone. 	Chi – NO Ecu - NO	Taking into account the above and the previous mentioned that both gray infrastructure designs have to be actualized with climate change scenarios, the calculations of the emissions where not presented in the project. For this, in the Full Proposal document in the section Measures for environmental and social risk management, in line with the Adaptation Fund’s Environmental and Social Policy in paragraph 292 it says: “Verification of documentation which demonstrate compliance with the AF’s ESP Carbon footprint of the Activity / USPs for the Cerro Gatazo grey infrastructure and Quebrada Bonilla development.”
	11.3. Has the project carry out a qualitative risk identification of any impact on carbon capture and sequestration capacity.	Chi – NO Ecu - NO	No, however on the contrary, the project in Esmeraldas in Outputs 1.2. Green infrastructure plan for Esmeraldas and 2.2. Landslide mitigation works in Esmeraldas the use of green infrastructure is the main objective.

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
12. <i>Pollution Prevention and Resource Efficiency</i>	12.1. Has the project identified activities with preventable waste or pollution production?	Chi – YES Ecu - YES	<p>The activities that have preventable waste or pollution production are the construction works for the green and gray infrastructure in Esmeraldas and Antofagasta.</p> <p>Antofagasta: Construction of a series of 14 decantation ponds and 36 concrete retaining walls located in Quebrada Bonilla (31 in Bonilla North and 5 in Bonilla South).</p> <p>Esmeraldas: Construction of (i) profile conformation of slopes, (ii) construction of collection and drainage channels, (iii) construction of retaining walls where necessary, (iv) anchor works were necessary, and (v) vegetation of slopes.</p> <p>Esmeraldas: Revegetation of 100 ha in Cerro Gatazo in Esmeraldas.</p> <p>In the project, there is mention of the preventable waste production in section Measures to avoid / mitigate negative impacts in paragraphs 161 – 167.</p> <p>It is important that the Environmental and Social Management Plan establish how this will be taken into account in the implementation of the educational training, workshops, etc to avoid the waste produced in this process.</p>
	12.2. Has the project determined the nature and quantity of the waste, as well as those of possible pollutants that may be produced?	Chi – NO Ecu - NO	<p>In the project, there is mention of nature waste production but it has not quantified the waste production taking into account that for the moment definitive designs are subject to the incorporation of climate change scenarios.</p> <p>The above is specified in section Measures to avoid / mitigate negative impacts in paragraphs 161 – 167.</p> <p>The Environmental and Social Management Plan should specify how this will be taken into account in the implementation of the gray and green infrastructure implementation taking into account this type of activities always generate waste.</p>
	12.3. Has the project determined if the concept of minimization of waste and pollution production has been applied in the design	Chi – YES Ecu - YES	The project has internalized at all moment that this is an adaptation project and has to comply with the environmental AF ESP.

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
	phase and if this will be effective during implementation?		It is important that the Environmental and Social Management Plan specify how waste and pollution production minimization will be taken into account in the implementation of all the activities of the project.
13. <i>Public Health</i>	13.1. Has the project identified using an appropriate health impact screening tool (check list) potentially significant negative impacts on public health generated?	Chi – NO Ecu - NO	No evidence of this aspect. The project has to implement a Health Impact Assessment of the activities related to: Antofagasta: Construction of a series of 14 decantation ponds and 36 concrete retaining walls located in Quebrada Bonilla (31 in Bonilla North and 5 in Bonilla South). Esmeraldas: Construction of (i) profile conformation of slopes, (ii) construction of collection and drainage channels, (iii) construction of retaining walls where necessary, (iv) anchor works were necessary, and (v) vegetation of slopes. Esmeraldas: Revegetation of 100 ha in Cerro Gatazo.
14. <i>Physical and Cultural Heritage</i>	14.1. Has the project determined if the host country has ratified the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage?	Chi – YES Ecu - YES	Ecuador: Convention concerning the Protection of the World Cultural and Natural Heritage. Paris, 16 November 1972. 16 June 1975 – Acceptance. https://en.unesco.org/countries/Ecuador/conventions Chile: Convention concerning the Protection of the World Cultural and Natural Heritage. Paris, 16 November 1972. 20 February 1980 – Ratification. https://en.unesco.org/countries/chile/conventions
	14.2. Has the project identified the national and local legal and regulatory framework for recognition and protection of physical and cultural heritage?	Chi – YES Ecu - YES	The project in annex 18 “Applicable domestic and international laws that apply” presents the local legal and regulatory framework for recognition and protection of physical and cultural heritage • Ministry of Culture, Arts and Heritage. www.cultura.gob.cl/

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
			<ul style="list-style-type: none"> Ministry of culture and heritage. www.culturaypatrimonio.gob.ec
	<p>14.3. Has the project described in the influence zone all the elements of the cultural heritage, their location and their vulnerabilities?</p> <p>The area considered should be large enough to be credible and be chosen in function of the impact generating agent (e.g. vibrations, landscape elements) and an appreciation of its propagating ability. Include all elements enjoying local or international protection.</p>	<p>Chi – YES Ecu - YES</p>	<p>There is no finding that the project could cause any alteration, damage, or removal of physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level.</p> <p>Projects will not interfere with existing access and use of such physical and cultural resources.</p> <p>The Project will not be implemented in areas with unique natural values recognized at the community, national or international level, heritage recognized by 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage.</p>
	<p>14.4. Has the project determined if any of the heritage elements included in the List of World Heritage in Danger is in the influence zone?</p>	<p>Chi – NO Ecu – NO</p>	<p>The Project will not result in interventions that would potentially adversely affect sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture. On the contrary the narrators' initiative will build on traditions (e.g., marimba, tales) to potentiate cultural memory of climate-related disasters</p>
	<p>14.5. Has the project considered all the activities to identify actual risks for each of the heritage elements identified taking into account the specific characteristics of the activity (location, dimension, duration etc.) and the vulnerability mechanism(s) of each heritage element identified?</p>	<p>Chi – YES Ecu - YES</p>	<p>The Project will not result in interventions that would potentially adversely affect sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture. On the contrary the narrators' initiative will build on traditions (e.g., marimba, tales) to potentiate cultural memory of climate-related disasters</p>
<p>15. <i>Lands and Soil Conservation</i></p>	<p>15.1. Has the project identified the presence of fragile soils within the influence area?</p>	<p>Chi – YES Ecu - YES</p>	<p>The areas where the project will be implemented are no productive lands nor high value conservation sites.</p> <p>The objective of the project is to avoid the increment of land erosion causing landslides in Esmeraldas and mudflows in Antofagasta.</p>

Evidence Base Risk Identification			
Checklist of E&S Principles	Questions	Yes / No	Evidence Base Identification
	15.2. Has the project identified activities that could result in the loss of otherwise non-fragile soil?	Chi – NO Ecu - NO	The project is designed and shall be implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.
	15.3. Has the project identified productive lands and/or lands that provide valuable ecosystem services within the influence area?	Chi – NO Ecu - NO	The project is designed and shall be implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.
	15.4. Has the project identified activities that may lead to land degradation?	Chi – NO Ecu - NO	The project is designed and shall be implemented in a way that promotes soil conservation and avoids degradation or conversion of productive lands or land that provides valuable ecosystem services.

After the previous information and analysis presented in Table 1, in Table 2 Risks Identification per E&S Principles, each AF E&S Principle describes if there is or not a risk associated.

Table 3. Risks Identification per E&S Principles

Risks Identification per E&S Principles		
Checklist of E&S Principles	Risk Associated	Risks Associated
<i>1. Compliance with the law</i>	Chi – YES Ecu - YES	There is a risk that the project in Component 1 could not comply with applicable domestic and international law if one or both USPs referred to the grey and green infrastructure implementation could not get the Environmental Registry or the Environmental Impact Declaration – DIA for Chile. Component 1.
<i>2. Access and Equity</i>	Chi – YES Ecu - YES	There is a risk that the beneficiary might have no access to project benefits because of inexistent mechanism to ensure participation of communities, marginalized, vulnerable groups, and stakeholder and local authorities’, this referred to in Component 1, Component 2 and Component 3.

Risks Identification per E&S Principles		
Checklist of E&S Principles	Risk Associated	Risks Associated
3. <i>Marginalized and Vulnerable Groups</i>	Chi – YES Ecu - YES	<p>There is a risk that the project might impede an access to basic services such as clean air, energy and housing, safe may be affected. This referred to in Component 1.</p> <p>There is a risk that the project may impose adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, displaced people, refugees or people living with disabilities taking into account possible mobility restriction presented during the implementation of the gray and green infrastructure in Esmeraldas. This referred to in Component 1.</p>
4. <i>Human Rights</i>	Chi – NO Ecu - NO	There is no risk that the project will or could not promote and respect international human rights. The core of the project is to reduce the risk of disaster of human beings, therefore the project intention is to protect in all cases life and quality conditions of human being.
5. <i>Gender Equity and Women's Empowerment</i>	Chi – YES Ecu - YES	There is a risk that either women or men has unequal opportunities to participate taking into account their working schedules or lifestyles, this referred to in Component 1, Component 2 and Component 3.
6. <i>Core Labour Rights</i>	Chi – NO Ecu - NO	<p>The project will be executed by UNDP's standards, which apply all core labour standards as identified by the International Labour Organization (ILO).</p> <p>There is a risk of collapse during the period of construction in case of heavy rains or earthquakes.</p>
7. <i>Indigenous Peoples</i>	Chi – NO Ecu - YES	There is a risk that Indigenous Peoples have unequal opportunities to participate taking into account their working schedules, lifestyles, or languages. This referred to in Component 2.
8. <i>Involuntary Resettlement</i>	Chi – NO Ecu - YES	There is a risk of not minimizing or avoiding the need for temporary relocations / resettlement. This referred to in Component 1.
	Chi – NO Ecu - YES	There is a risk of not producing well-informed rights, consultation, and offered technically, economically, and socially feasible temporary relocations / resettlement alternatives or fair and adequate compensation. This referred to in Component 1.

Risks Identification per E&S Principles		
Checklist of E&S Principles	Risk Associated	Risks Associated
<i>9. Protection of Natural Habitats</i>	Chi – NO Ecu - NO	<p>The project will not intervene in any Natural Habitat taking into account that is be developed in urban areas.</p> <p>The above is described in the full proposal in paragraphs 46 – 51.</p> <p>There is no risk associated of involving unjustified conversion or degradation of critical natural habitats, including those that are (a) legally protected; (b) officially proposed for protection; (c) recognized by authoritative sources for their high conservation value, including as critical habitat; or (d) recognized as protected by traditional or indigenous local communities.</p> <p>This referred to in Component 1.</p>
<i>10. Conservation of Biological Diversity</i>	Chi – NO Ecu - YES	<p>As the decision of which species will be used, this Unidentified Sub Project will need to undergo detailed screening, a consultation process, the development of safeguard measures and a strict approval method developed.</p> <p>For the above there is a risk of not avoiding any significant or unjustified reduction or loss of biological diversity or the introduction of unknown invasive species</p> <p>This referred to in Component 1.</p>
<i>11. Climate Change</i>	Chi – NO Ecu - NO	<p>There is no a risk of significant or unjustified increase in greenhouse gas emissions, taking into account that the project preliminary won't produce more than 1 MM ton /CO2eq during its lifespan . However, for the sake of the project and the compliance of the E&SP this will be attended with a Carbon Footprint recognized tool. This will be classified as risk.</p>
<i>12. Pollution Prevention and Resource Efficiency</i>	Chi – YES Ecu - YES	<p>There is a risk that the project is implemented in a way that does not meet applicable standards for minimizing material resource use, the production of wastes, and the release of pollutants.</p> <p>This referred to in Component 1 and Component 2.</p>
<i>13. Public Health</i>	Chi – YES Ecu - YES	<p>There is a risk that the project designed and implemented in a way that produces potentially significant negative impacts on public health.</p> <p>This referred to in Component 1.</p>

Risks Identification per E&S Principles		
Checklist of E&S Principles	Risk Associated	Risks Associated
14. <i>Physical and Cultural Heritage</i>	Chi – NO Ecu - NO	There is no finding that the project could cause any alteration, damage, or removal of physical cultural resources, cultural sites, and sites with unique natural values recognized as such at the community, national or international level. Projects will not interfere with existing access and use of such physical and cultural resources. The Project will not be implemented in areas with unique natural values recognized at the community, national or international level, heritage recognized by 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage.
15. <i>Land and Soil Conservation</i>	Chi – NO Ecu - NO	The areas where the project will be implemented are no productive lands nor high value conservation sites. The objective of the project is to avoid the increment of land erosion causing landslides in Esmeraldas and mudflows in Antofagasta.

Taking into account Table 1. Expected Outputs and Activities, Table 2. Evidence Base Risk Identification and Table 3. Risks Identification per E&S Principles it was analyzed which E&S Impacts were related to the activities of the proposal. As a more detailed analysis an identification of risks and impacts per activity was developed. See Table 4. Activity Identified risks in accordance to AF's E&SP and Potential E&S Impacts.

Table 4. Activity Identified risks in accordance to AF's E&SP and Potential E&S Impacts

Activity Identified risks in accordance to AF's E&SP and Impact		
Activity	Identified risks in accordance with AF's E&SP	Potential E&S Impacts if risks materialize
1. Update the stormwater management plan for Antofagasta	E&SP 2. There is a risk that not all the community is aware of the stormwater management plan update for Antofagasta.	If the community is not properly communicated and involved in the process of updating the plan, their local knowledge in their surrounding area such as "Campamentos" or in the ravine routes will not be taken into account.

Activity Identified risks in accordance to AF's E&SP and Impact		
Activity	Identified risks in accordance with AF's E&SP	Potential E&S Impacts if risks materialize
2. Prepare the green-infrastructure plan for Esmeraldas.	E&SP 2. There is a risk that not all the community is aware of the green-infrastructure plan for Esmeraldas.	If the community does not participate in the process of preparing the green-infrastructure plan for Esmeraldas, the community will not be informed of risks of residing on hill and will repeat and conceive it as a possible settlement place.
	E&SP 10. There is a risk that the project for slope stabilization in Cerro Gatazo may introduce non-endemic species.	Introducing non-endemic species could damage the natural biodiversity, even though it is an area already intervened.
3. Update the municipal land use planning regulations in Esmeraldas.	E&SP 10. There is a risk that the green-infrastructure plan for Esmeraldas in Cerro Gatazo promotes the use of non-endemic species.	Introducing non-endemic species could damage the natural biodiversity, even though it is an area already intervened.
4. Update the designs, including climate change considerations in Antofagasta.	E&SP 2. There is a risk that not all the community is aware of the update of the designs for Antofagasta.	If the community is not properly communicated and involved in the process of updating the designs of the infrastructure, their local knowledge in their surrounding area such as "Campamentos" or in the ravine routes will not be taken into account.
8. Declaration of protected forests by the GADE in collaboration with MAE, with the intention of preventing them of being inhabited in the future in Esmeraldas.	E&SP 2. Population against the Declaration.	Do not exist conditions to approve the declaration and preserve the area.
9. Identification of the precise location for the radar in Esmeraldas	E&SP 2. Community not clearly inform about the purpose of the radar.	Impossibility to install the radar in the best location reached.
	Best location found are inaccessible by car or truck. Lack of technical staff to operate the radar and do a proper maintenance.	Radar without maintenance could not operate properly or not lasting the expected lifetime. Community members could harm or steal the instrument.
10. Identification of the precise location for the storm detection system's sensors in Antofagasta	Best location found are inaccessible by car or truck.	Impossibility to install the radar in the best location reached.
	Lack of technical staff to operate the radar and do a proper maintenance.	Radar without maintenance could not operate properly or not lasting the expected lifetime. Community members could harm or steal the monitor instrument.

Activity Identified risks in accordance to AF's E&SP and Impact		
Activity	Identified risks in accordance with AF's E&SP	Potential E&S Impacts if risks materialize
	Community not clearly inform about the purpose of the radar.	
15. Installation of sirens (megaphones) in Antofagasta and Taltal.	E&SP 2. There is a risk that not all the community is aware of the proposed location for the sirens presented by the study Community not clearly inform about the purpose of the sirens	Impossibility to install the sirens in the best location reached. Sirens without maintenance could not operate properly or not lasting the expected lifetime. Community members could harm or steal the sirens or early warning system instruments.
16. Update the mudflow evacuation maps for Antofagasta and Taltal.	E&SP 2. Lack of involvement of the community and local authorities in the actualization of the mudflow evacuation maps.	If the community does not participate or comment the evacuation maps and procedures for Antofagasta and Taltal, they will not help with their local knowledge and own situation. Also, it is important that they are aware of all the ideas and must agree with the plan. If not, human lives could be in danger.
17. Annual evacuation drills in Antofagasta and Taltal.	E&SP 2. Lack of involvement of the community and local authorities in the annual evacuation drills.	If the community does not participate annual evacuation drills in Antofagasta and Taltal, they will not help with their local knowledge and own situation. Also, it is important that they are aware of all the possible situations, and also it is important to distinguish the difference between a siren for tsunami or for mud slope. If not, human lives could be in danger.
18. Training of local community leaders from juntas de vecinos and campamento committees on each gorge in Antofagasta and Taltal.	E&SP 2. Lack of involvement of the local community leaders from juntas de vecinos and campamento committees in the trainings.	If the local community leaders from juntas de vecinos and campamento committees does not participate in Antofagasta's and Taltal's trainings, they will not help their community in an emergency situation. Also, it is important local leaders can guide their community if an emergency occurs. If not, human lives could be in danger.

Activity Identified risks in accordance to AF's E&SP and Impact		
Activity	Identified risks in accordance with AF's E&SP	Potential E&S Impacts if risks materialize
19. Installation of sirens (megaphones) in Luis Vargas Torres Island in Esmeraldas.	E&SP 2. There is a risk that not all the community is aware of the proposed location for the sirens presented by the study Community not clearly inform about the purpose of the sirens	Impossibility to install the sirens in the best location reached. Sirens without maintenance could not operate properly or not lasting the expected lifetime. Community members could harm or steal the sirens or early warning system instruments.
20. Pilot evacuation drill implemented by GADE, in close coordination with SGR, the police and relevant entities (e.g., police, fire brigades) – Esmeraldas.	E&SP 2. Lack of involvement of the community and local authorities in the evacuation drills.	If the community does not participate in the evacuation drills in Esmeraldas, they will not help with their local knowledge and own situation. If not, human lives could be in danger.
21. Training of local leaders to facilitate evacuation of vulnerable groups and take community action to guard the sirens and private property in Esmeraldas.	E&SP 2. Lack of involvement of the local leaders of vulnerable groups in Esmeraldas.	If the local community leaders from vulnerable groups in Esmeraldas does not participate the trainings, they will not help their community in an emergency situation. Also, it is important local leaders can guide their community if an emergency occurs. If not, human lives could be in danger.
22. Update the mudflow evacuation maps for Antofagasta and Taltal	E&SP 2. Lack of involvement of the community and local authorities in the actualization of the mudflow evacuation maps.	If the community does not participate or comment the evacuation maps and procedures for Antofagasta and Taltal, they will not help with their local knowledge and own situation. Also, it is important that they are aware of all the ideas and must agree with the plan. If not, human lives could be in danger.
23. Print in large format (e.g., banners or large posters) the maps and the signals of evacuation routes and shelters for both countries.	E&SP 2. Lack of understanding of the evacuation maps by the population of the communities.	Lack of sustainability of the action and population still in danger.
24. Place in high-transit areas the maps and the signals of evacuation routes and shelters in Taltal, Antofagasta and Esmeraldas.	E&SP 2. There is a risk that not all the community is aware of the proposed location for the maps in Esmeraldas, Taltal and Antofagasta. Vandalism and mischief to the maps and signals placed could cause quickly loosening	If the community is not able to participate in localization of the banners they may be unused increasing the possibility of accidentally.

Activity Identified risks in accordance to AF's E&SP and Impact		
Activity	Identified risks in accordance with AF's E&SP	Potential E&S Impacts if risks materialize
25. Digital maps for both countries.	E&SP 2. Lack of understanding of the evacuation maps by the population of the communities.	Lack of sustainability of the action and population still in danger.
26. Place in strategic websites and social media the maps and disaster risk documentation for access of both countries.	E&SP 2. There is a risk that not all the community is aware of the proposed regional electronic platform.	The use of the electronic platform may be limited if the community or community - social leaders does not empower themselves to use it.
27. Develop and implement regional online course lead by the Protection Academy of Chile (APC). The course will have a blended approach, combining self-paced activities with online group sessions to interact with trainers and other participants. This course is specific for technical staff in both countries.	E&SP 2. Lack of involvement and real interest in the courses by the technical staff of the project.	. Technical Staff with lack of knowledge would cause misunderstanding of the disaster risk reduction and adaptation subject and create some difficulties on the implementation phase.
28. Develop a training of trainers for both countries	E&SP 2. Lack of real involvement of local trainers. Trainers not aware of the importance to implement adaptation measures in a participatory manner and with the real involvement of the population of the communities.	Trainers without real capacities to manage disaster risk reduction and adaptation issues in their daily working.
29. Implement three courses to be open in years 3, 4 and 5. The courses will be open to personnel from the local governments of Antofagasta, Taltal and Esmeraldas, and other cities of the region. This course is specific for technical staff in both countries.	E&SP 2. Lack of real involvement of the local governments and personnel, due to the overloaded work and other issues. Personnel from the local government not aware of the importance to implement adaptation measures in a participatory manner and with the real involvement of the population of the communities.	Technical staff from the local government without real capacities to manage disaster risk reduction and adaptation issues in their daily working.
30. Develop information to be placed in the regional electronic platform for both countries	E&SP 7. There is a risk that the information developed is usable or of interest of local leaders, technical staff, etc.	Not use of the information developed.
31. Technical staff from the Municipality of Esmeraldas (GADE) and other local entities will be trained on the use of green infrastructure for DRR, and a situation analysis will be prepared.	E&SP 2. Lack of real involvement of the local government and personnel, due to the overloaded work and other issues. Personnel from the local government not aware of the importance to implement green infrastructure for DRR.	Technical staff of Esmeraldas local government without proper knowledge about green infrastructure or eco-engineering measures to cope with adaptation measures in the future.
32. Socialization of the green infrastructure plan with local stakeholders in Esmeraldas - Ecuador.	E&SP 2. Local stakeholders without interest to know about green infrastructure.	Local stakeholders no deeply into green infrastructure or eco engineering would cause lack of sustainability of the actions.

Activity Identified risks in accordance to AF's E&SP and Impact		
Activity	Identified risks in accordance with AF's E&SP	Potential E&S Impacts if risks materialize
33. Develop the Narrator's initiative for Ecuador (Esmeraldas)	E&SP 5. There is a risk that either women or men has unequal opportunities to participate taking into account their working schedules or lifestyles.	Only one gender could assist to the course. The gender perspective could be lost, is women cannot assist, children assistance also could be put in risk.
	E&SP 7. There is a risk that Indigenous Peoples have unequal opportunities to participate taking into account their working schedules, lifestyles, or languages.	Not participation of the indigenous community in the Narrator's initiative. The heterogeneity perspective could be lost, is the indigenous community cannot assist.
34. Develop the Narrator's initiative for Chile (Antofagasta – Taltal)	E&SP 5. There is a risk that either women or men has unequal opportunities to participate taking into account their working schedules or lifestyles.	Only one gender could assist to the course. The gender perspective could be lost, is women cannot assist, children assistance also could be put in risk.
35. Established and nurture the communities of practice	E&SP 2. There is a risk that not all the community is aware of the community in practice in Esmeraldas, Taltal and Antofagasta.	Not participation of the social community in the communities of practice. The heterogeneity could be lost.
	E&SP 5. There is a risk that either women or men has unequal opportunities to participate taking into account their working schedules or lifestyles.	Only one gender could assist to the communities of practice. The gender perspective could be lost, if women cannot participate.
	E&SP 7. There is a risk that Indigenous Peoples have unequal opportunities to participate taking into account their working schedules, lifestyles, or languages.	Not participation of the indigenous community in the communities of practice. The heterogeneity could be lost perspective could be lost, is the indigenous community cannot assist.
36. Develop a regional electronic platform for access of both countries.	E&SP 2. There is a risk that not all the community is aware of the proposed regional electronic platform.	The use of the electronic platform may be limited if the community or community - social leaders does not empower themselves to use it.
37. Document and disseminate the lessons and best practice of the project for both countries.	E&SP 2. There is a risk that not all the community is aware of the lessons and best practice of the project for both countries.	Not awareness of the community in general of the lessons and best practices of the project.
	E&SP 7. There is a risk that Indigenous Peoples are not aware of the lessons and best practice of the project for both countries if their language was not taken into account.	Not awareness of the indigenous community of the lessons and best practices of the project.

Considering the risks identified above in Table 4. Activity Identified risks in accordance to AF's E&SP and Potential E&S Impacts, Table 5 presents the general categorization of the project:

2.1. General Categorization

Table 5. Categorization definition

Questions	Component Answer YES / NO		
	1	2	3
Does the Project Outputs / Activities have significant adverse environmental or social impacts that are diverse?	NO	NO	NO
Does the Project Outputs / Activities have significant adverse environmental or social impacts that are widespread?	NO	NO	NO
Does the Project Outputs / Activities have significant adverse environmental or social impacts that are irreversible?	NO	NO	NO
Does the Project Outputs / Activities have few adverse environmental or social impacts?	YES	NO	NO
Does the Project Outputs / Activities have in small scale / low widespread adverse environmental or social impacts?	YES	NO	NO
Does the Project Outputs / Activities have reversible or easily mitigated adverse environmental or social impacts?	YES	NO	NO
Does the Project Outputs / Activities have no adverse environmental or social impacts?	NO	YES	YES
Categorization	B	C	C

The results of the Component Categorization showed that the Component 2 and Component 3 are categorized as low risk (Category C) because of their nature of capacity building (Risk-based adaptation course, communication and education strategies, narrators' initiatives, electronic platform to facilitate communication, lessons and best practices dissemination) which is not expected to generate any significant environmental and social impacts.

Component 1 is categorized as medium risk (Category B) in Outcome 2 (Reduced vulnerability to floods, landslides and mudflows in two coastal cities) and Outcome 3 (Improved climate monitoring and means to alert the local population).

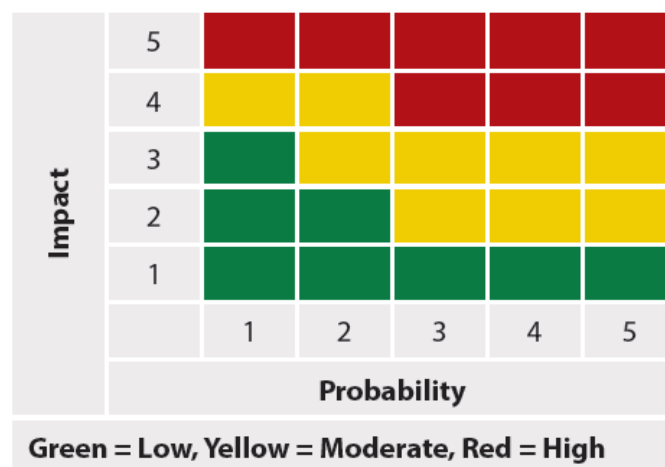


Figure 1. Significance of the risk A.

Table 6. Significance of the Risk.

Significance of the Risk			
Checklist of E&S Principles	Risks Identified per E&S Principles	Impact and Probability (1-5)	Significance Low, Moderate, High
<i>1. Compliance with the law</i>	There is a risk that the project in Component 1 could not comply with applicable domestic and international law if one or both USPs referred to the grey and green infrastructure implementation could not get the Environmental Registry or the Environmental Impact Declaration DIA for Chile.	5 / 1	High
<i>2. Access and Equity</i>	There is a risk that the beneficiary might have no access to project benefits because of inadequate implementation of measures to ensure participation of communities, marginalized, vulnerable groups, and stakeholder and local authorities', this referred to in Component 1, Component 2 and Component 3.	2 / 2	Low
<i>3. Marginalized and Vulnerable Groups</i>	There is a risk that the project might impede an access to basic services such as clean air, energy and housing, safe may be affected. This referred to in Component 1.	4 / 2	Moderate
	There is a risk that the project may impose adverse impacts on marginalized and vulnerable groups including children, women and girls, the elderly, indigenous people, displaced people, refugees or people living with disabilities taking into account possible mobility restriction presented during the implementation of the gray and green infrastructure in Esmeraldas. This referred to in Component 1.	4 / 3	High
<i>5. Gender Equity and Women's Empowerment</i>	There is a risk that either women or men has unequal opportunities to participate, failing to take into account their livelihood, social and economic conditions. This referred to in Component 1, Component 2 and Component 3.	4 / 1	Moderate

Significance of the Risk			
Checklist of E&S Principles	Risks Identified per E&S Principles	Impact and Probability (1-5)	Significance Low, Moderate, High
6. Core Labour Rights	The project will be executed by UNDP's standards, which apply all core labour standards as identified by the International Labour Organization (ILO).	3 / 1	Low
7. Indigenous Peoples	There is a risk that Indigenous Peoples might have unequal opportunities to participate, failing to take into account their livelihood, social and economic conditions and languages. This is referred to in Component 2.	3 / 2	Moderate
8. Involuntary Resettlement	There is a risk of not minimizing or avoiding the need for temporary relocations / resettlement. This referred to in Component 1.	3 / 3	Moderate
	There is a risk of not producing well-informed rights, consultation, and failing to offer technically, economically, and socially feasible temporary relocations / resettlement alternatives or fair and adequate compensation. This is referred to in Component 1.	4 / 1	Moderate
10. Conservation of Biological Diversity	As the decision of which species will be used, this Unidentified Sub Project will need to undergo detailed screening, a consultation process, the development of safeguard measures and a strict approval method developed. For the above there is a risk of not avoiding significant or unjustified reduction or loss of biological diversity or the introduction of unknown invasive species. This is referred to in Component 1.	3 / 3	Moderate
11. Climate Change	There is a risk of increase in greenhouse gas emissions. This referred to in Component 1.	1 / 3	Low
12. Pollution Prevention and Resource Efficiency	There is a risk that the project is implemented in a way that does not meet applicable standards for minimizing material resource use, the production of wastes, and the release of pollutants. This referred to in Component 1 and Component 2.	3 / 1	Moderate
13. Public Health	There is a risk that the implemented activities may produce potentially significant negative impacts on public health.	2 / 2	Low

With the risks identification per E&S Principles, the proposed project is categorized as B according to the categories established in the ESP. Category B corresponds to projects with potential adverse impacts with few numbers of risks, small in scale, less widespread, reversible or easily mitigated.

With the previous results, an Environmental and Social Management Plan, Grievance Mechanism and Monitoring, Evaluation and Oversight Program is presented in Annex 15.