
Readiness Proposal

**with the Food and Agriculture Organization of the United Nations (FAO)
for Republic of Chile**

02 December 2019 | Adaptation Planning



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Readiness and Preparatory Support Proposal Template

Programme title:	Update of the National Climate Change Adaptation Plan for the Forestry, Agriculture and Livestock Sector
Country:	Chile
National authority:	designated Ministry of Finance / Office of Agrarian Studies and Policies (ODEPA)
Implementing Institution:	Food and Agriculture Organization of the United Nations
Date of first submission:	5 February 2019
Date of submission number	current version 31 October 2019 V.03



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- Please be concise. If you need to include any additional information, please attach it to the proposal.
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Note: Environmental and Social Safeguards and Gender

Throughout this document, when answering questions and providing details, please make sure to pay special attention to environmental, social and gender issues, particularly to the situation of vulnerable populations, including women and men. Please be specific about proposed actions to address these issues. Consult Annex IV of the Readiness Guidebook for more information.

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1. SUMMARY			
Country submitting the proposal	Country name:	Chile	
	Name of institution representing NDA or Focal Point:	Ministry of Finance	
	Name of contact person:	Mr. Francisco Moreno Guzmán	
	Contact person's position:	Undersecretary	
	Telephone number:	+56 2 28282007 +56 2 28282017	
	Email:	Fmoreno@hacienda.gov.cl	
	Full office address:	Teatinos 120, Santiago, Chile	
Additional email addresses that need to be copied on correspondences:	tlecaros@hacienda.gov.cl jespinoz@odepa.gob.cl		
Date of initial submission	5 February 2019		
Last date of resubmission	31 October 2019	Version number	V.03
Which institution will implement the Readiness and Preparatory Support project?	<input type="checkbox"/> National designated authority <input checked="" type="checkbox"/> Accredited entity <input type="checkbox"/> Delivery partner		
	Name of institution:	Food and Agriculture Organization of the United Nation (FAO)	
	Name of official:	Alexander Jones	
	Position:	Director, Climate and Environment Division	
	Telephone number:	(+39) 06 5705 2331	
	Email:	Alexander.Jones@fao.org	
	Full office address:	Viale delle Terme di Caracalla, 00153 Rome, Italy RM	
Additional email addresses that need to be copied on correspondences:	FAO-CHL@fao.org Leonel.tapia@fao.org Ignacia.Holmes@fao.org Savis.Sadeghian@fao.org		



Title of the Readiness support proposal	Update of the Climate Change Adaptation Plan for the Forestry, Agriculture and Livestock Sector
Type of Readiness support sought	<input type="checkbox"/> I. Country capacity for engagement with GCF <input type="checkbox"/> II. Country programming process <input type="checkbox"/> III. Direct access to climate finance <input type="checkbox"/> IV. Climate finance accessed <input checked="" type="checkbox"/> V. Formulation of national adaptation planning and/or other adaptation planning processes

**Brief summary
of the request**

The Chilean strategy regarding climate change approaches adaptation through one transversal and nine sectoral plans and a series of cross-cutting and inter-sectoral measures, which are defined in the National Adaptation Plan on Climate Change of 2014 and the National Action Plan on Climate Change (PANCC) 2017-2022.

The adaptation plans and actions are in the frame of the country's commitment undertaken through its NDC (2015) which indicates that Chile will have a renewed National Adaptation Plan to Climate Change and 9 sectoral plans by 2021 (Forestry, Agriculture and Livestock, Biodiversity, Fishing and Aquaculture, Health, Infrastructure, Cities, Water Resources, Energy and Tourism sectors).

The Forestry, agriculture and livestock adaptation plan is one of the five sectors for which GCF adaptation planning will be requested because of the high vulnerability of the sector to the climate change and their strategic importance for the sustainable development of the country. The objective of this proposal is to strengthen government capacity to lead the adaptation process in these three sectors through the achievement of five outcomes. The formulation of the NAP will lead a multi-stakeholder engagement process, considering the active involvement of all sectors of society, such as government institutions, key non-governmental parties, private sector, and civil society; at local and regional levels to ensure consensus and cross-cutting actions.

During the period 2013-2017, Ministry of Agriculture (MINAGRI) implemented the NAP for the Forestry, Agricultural and Livestock Sector with 21 measures representing an achievement rate of 72%. This plan has expired and must be updated based on a comprehensive participatory process and a series of sectorial targeted studies that will identify and determine measures and solutions, closing the gaps and addressing the barriers identified during the previous period. According to the findings of the MINAGRI, these include:

- Lack of an investment plan and a specific strategy for the mobilization of resources.
- Lack of goals and achievement indicators.
- Severe weaknesses in stakeholders' participation.

This proposed project will help Chile to achieve the following expected targets:

- Establishment of governance and coordination mechanisms for adaptation planning.
- Strengthened investment in climate vulnerability and adaptation.
- Alignment of the country's overall development policy and strategy.
- Development of an adaptation finance strategy.

	<ul style="list-style-type: none"> Development of a system for monitoring, evaluation and learning capacity. <p>In order to ensure the participation of all sectors, the project includes a gender and Indigenous Peoples (IP) approach as a central axis of the NAP. These two groups confront a number of problems in the country related to inclusion and lack of opportunities, such as wage gaps, discrimination, and low participation in the labor market, all of which are more marked in rural areas. The project will address the inclusion of these groups through various actions and strategies.</p>		
Total requested amount and currency	USD 499,695	Anticipated duration	24 months
Has the country received or is expecting to receive other Readiness and Preparatory Support funding allocations (including adaptation planning) from GCF or other donors?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Currently, Chile has the approval from the Readiness Working Group (RWG) to execute the following proposals: <ol style="list-style-type: none"> Support for NDA: to generate an institutional framework and adequate procedures for the revision and prioritization of national projects¹. Strengthen the project portfolio: support has already been prioritized for four projects in their initial phase in order to continue their financial, legal and feasibility studies². Support for strengthening public-private planning processes at the subnational level for the development of adaptation and mitigation plans in four regions. 		

2. BACKGROUND

Chilean climate change context

¹ https://www.greenclimate.fund/documents/20182/466992/Readiness_proposals_-_Chile_CAF_Strategic_Frameworks.pdf/651cdfab-070a-4b04-9227-912dd2bfad1a

² https://www.greenclimate.fund/documents/20182/466992/Readiness_proposals_-_Chile_CAF_Entity_Support_Strategic_Frameworks.pdf/e4caf7c5-9a5a-4c32-bb43-4cbdc26300f4

Average temperature trends in Chile to 2010 show a cooling pattern along the coast and inland warming (both in the central valley and in the Andes). In the case of precipitation, the projected trends show that 2031-2050 would be drier as compared to the historical mean³.

As a consequence of rainfall decline that is expected to continue throughout the 21st century, most of the country's agricultural regions would experience desertification, with serious impacts on the Forestry, Agriculture and Livestock sector. . Climate change also has a significant impact on the frequency and intensity of hydro-meteorological phenomena, as seen from the "megadrought"⁴) that persisted in 2010-2015 in Chile.

Additional studies indicate a displacement of the current agroclimatic zones further south, particularly fruit crops and forestry⁵. Around 2050, the production potential would expand considerably towards more southern latitudes as compared to the current extension, a displacement explained mostly by temperature increase in these latitudes. In the northern part of the current production zone, decreases of about 10% and 20% in the productive potential are foreseen. Irrigation requirements would decrease between 10% and 30% as a consequence of earlier planting which would allow a greater use of winter rainfall. Regarding crop seasonality, in the central-north zone of the country, the optimal sowing time would advance to winter months due to increased temperatures⁶.

Chile's framework for climate change policy, NAPs and related projects

The main objective of the Chilean Government related to Climate Change is the National Neutrality Target, which seeks greenhouse gas neutrality to be achieved by 2050. This is an ambitious target in line with its Nationally Determined Contribution (NDC) and the Long Term Climate Strategy. For this reason, climate change policy in Chile is evolving rapidly and the country is in the process of public discussion of the first Climate Change Law which aims at a net zero carbon footprint economy by the year 2050. This initiative is complemented with various policies, plans and strategies to address climate change, the National Action Plan on climate change (PANCC 2017-2022) being the main framework in which the different strategies (mitigation, adaptation, capacity building, and technology transfer) are derived. Specifically, the sectoral plans for adaptation to climate change, including Forestry, Agriculture and Livestock, are the government main instrument for addressing adaptation in direct relation to the commitments made in the NDC and the Long-Term Climate Strategy; and they also serve as a bridge to sub-regional action plans. All this framework on climate change is registered on the National Climate Change Action Report, prepared by the Ministry of the Environment and the Inter-ministerial Technical Team to monitor and report the state of progress of climate change management policies, plans, and programs⁷. Figure 1 summarizes this structure.

³ <https://mma.gob.cl/wp-content/uploads/2017/12/TCN-2016b1.pdf>

⁴ <http://www.cr2.cl/informe-a-la-nacion-la-megasequia-2010-2015-una-leccion-para-el-futuro/>

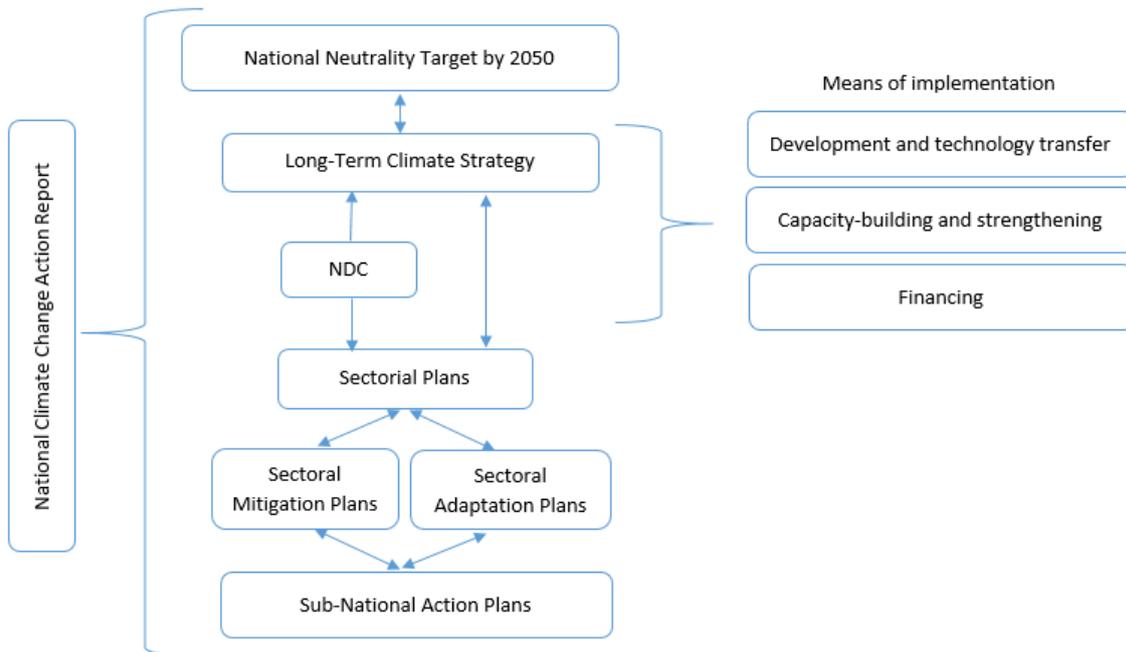
⁵ ftp://dqf.uchile.cl/pub/maisa/SOC28/Capitulo4_Vulnerabilidad_Silvoagropecuaria/IV%20-%20Vulnerabilidad%20-%20Informe%20Final.pdf

⁶ <https://www.odepa.gob.cl/wp-content/uploads/2018/01/cambioClim12parte.pdf>

⁷ <https://mma.gob.cl/wp-content/uploads/2019/07/Presentacion-Ley-Marco-CC.pdf>

Then, specifically related to adaptation, there is the National Climate Change Adaptation Plan of 2014 with nine sectoral plans and their update every five years. The National Adaptation Plan corresponds to the articulator instrument to define the adaptation public policy to the effects of climate change in the long term. This plan provides the conceptual framework and guidelines for adaptation in Chile, and it articulates with the nine sectoral adaptation plans defined as priority: Agriculture, Livestock and Forestry, Biodiversity, Fisheries and Aquaculture, Health, Infrastructure Services, Cities, Energy, Tourism and Water Resources. This Plan provides the institutional structure through which coordination and coherence is turned to actions from different sectors, localities and regions, considering that adaptation can be carried out at the level of a specific sector, at a multisectorial, regional or cross-nationally. Among the sectoral plans, the Climate Change Adaptation Plan for the Forestry, Agriculture, and Livestock Sector for the period 2013-2017, contained 21 measures focusing mainly on water management, research, information and capacity building, risk management, agricultural insurance, and forest management; and requires an update to renew the plan and strengthen specific measures that were not totally accomplished in the previous plan, such as: agriculture insurance, planting schedule, plant breeding, forestry water requirements, and information systems.

Figure 1: Chilean framework of climate change policy



Within the framework of the NDC, Chile is committed to strengthen its adaptation planning in nine sectors. It is part of a comprehensive approach (see PNACC or higher level strategic document) to address the various challenges of climate change adaptation affecting the country. In order to advance in the climate change adaptation process a set of proposals are being developed, between the NDA and FAO, to request for GCF readiness programme resources to address the gaps in ongoing NAP processes. This includes: Elaborate the Tourism and Water resources plans before 2021, Update the Forestry, Agriculture and Livestock plan and

the Biodiversity plan; and Update the National Climate Change Adaptation Plan of 2014 before 2021. Reinforcing the cross-cutting vision for adaptation in the country, the proposed project considers lessons learned during the first period of the NAP, proposed to address existing gaps and needs, and enhances the country's capacities to develop strong adaptation strategies. The indicated projects will allow the country to be prepared to face the impacts of climate change and to comply with its international commitments to the Paris Agreement. And being the first one, the update of the Climate Change Adaptation Plan for the Forestry, Agriculture, and Livestock Sector will cover a key sector of the national economy and help to provide information and prepare the other adaptation plans and targets for Chile's second NDC.

Chile through its Nationally Determined Contribution (NDC) in 2015⁸ considers a comprehensive approach to address the various dimensions of climate change, and since then is working to accomplish the commitments; being part of the NDC Partnership.

Adaptation to climate change is structured around two different cycles: the first one is to be completed in 2021, and the second one in 2030. In order to have the necessary tools to face the impacts of Climate Change by 2021, Chile proposes:

- Implementing specific actions aimed at increasing resilience in the country, under the National Climate Change Adaptation Plan and the sectorial plans, with a decentralized perspective and seeking to integrate efforts among the different decision-making levels (national, regional, and municipal).
- Identifying sources of financing to implement plans, based on the considerations set forth in the financing section of this contribution.
- Building synergies with the planned mitigation initiatives, and maximizing the benefits that stem from the development and capacity-building pillars, as well as technology creation and transfer included in this contribution.
- Strengthening the institutional background of the adaptation in Chile.
- Preparation of metrics and measurement tools of the sectorial plans.

As of 2021, Chile has set the following aims:

- Initiating a second cycle of sectorial plans for Climate Change adaptation, based on the experience gained so far.
- Having an updated National Adaptation Plan.
- Developing a national assessment practice by 2026, through vulnerability indicators and methodologies aimed at determining the increase of the capacity of adaptation of the individuals, communities and systems impacted by Climate Change.

Updating the NAP for the Forestry, Agriculture and Livestock Sector⁹ is the main value-added of this proposal, through the financing and also the engagement of all the relevant stakeholders (government, private sector, civil society, academia, with emphasis in vulnerable sectors). This

⁸ <https://www4.unfccc.int/sites/submissions/INDC/Published%20Documents/Chile/1/Chile%20INDC%20FINAL.pdf>

⁹ <https://mma.gob.cl/cambio-climatico/plan-nacional-de-adaptacion-al-cambio-climatico-y-planee-sectoriales/>

NAP supports a vital sector to the Chilean economy¹⁰, which represents around 3% of the GDP. However, if we consider that the sector makes possible a series of related activities (all of them included in the GDP), this figure extends to 7,31% of the GDP. In terms of employment, the sector represents 9,2% of the economically active labor force. Another precedent to consider are the rates at which agricultural exports have grown during the past two decades, going from USD 2,626 million in 1996 to USD 5,427 million in 2006, reaching USD 10,408 million in 2016¹¹. These indicators highlight Chile's vulnerability to climate change since it complies with seven of the nine vulnerability characteristics as defined by the UNFCCC; and the Forestry, Agriculture and Livestock sector is stated as one of the most vulnerable sectors of the country to the Climate Change¹².

Chile has received other international funding to implement projects that have relation to adaptation; these are: Design and implement the SIPAN network (partly financed by GEF) and "Enhancing Resilience to Climate Change of the Small Agriculture in the Chilean Region of O'Higgins" (financed by the Adaptation Fund) both projects are focused on specific areas of the country and both are good examples of local initiatives that help communities in adaptation to climate change and can be potentially escalated to other regions of the country, complementing the Forestry, Agriculture and Livestock NAP. In addition, there are other initiatives, from different sectors, that are worth highlighting for their close linkage with the Forestry; Agriculture and Livestock Adaptation Plan, which are detailed in table 1.

Table 1. Projects targeting the Forestry, Agriculture, and Livestock Sector

Project	Main Funding	Detail	Relation with NAP
Regional climate simulations and vulnerability assessment framework ¹³	National	Developed by the Center for Climate Science and Resilience (CR2) to generate high resolution climate projections for Chile through regional climate modeling for the vulnerability assessment.	Gives valuable baseline and projected information through high-resolution climate scenarios for Chile to assess the country's vulnerability to climate change as well as the social, environmental and economic risks.
Mediterranean Environmental Sustainable Development Program ("Sustainable MED") ¹⁴	GEF	Executed by UNEP to generate local capacities that allows the financing of sustainable productive activities with public and private co-financing.	Develops and promotes sustainable practices for Mediterranean environments related to forestry and agricultural activities to ensure an adapted sector to climate change.
National Strategy on Climate Change and Vegetation Resources (ENCCRV) ¹⁵	World Bank	Executed by MINAGRI, through the National Forestry Corporation (CONAF) to strengthens Chile's capacity to establish new vegetational resources, helping to adapt to	Develops and promotes sustainable practices in the whole country forestry activities to ensure an adapted sector to climate change Also, is considered the main tool of the land use, land-use change, and

¹⁰ <https://www.gob.cl/noticias/ministro-de-agricultura-destaca-el-crecimiento-nacional-del-sector/>

¹¹ <https://www.odepa.gob.cl/wp-content/uploads/2018/01/economia4parte.pdf>

¹² <https://mma.gob.cl/cambio-climatico/plan-de-adaptacion-al-cambio-climatico-para-el-sector-silvoagropecuario/>

¹³ <http://simulaciones.cr2.cl/>

¹⁴ <https://www.thegef.org/project/med-mediterranean-environmental-sustainable-development-program-sustainable-med>

¹⁵ <https://www.enccrv.cl/>

		climate change, while supporting smallholders in the sustainable use of these resources.	forestry sector (LULUCF) to ensure compliance with Chile's NDC.
Integrated National Monitoring and Assessment System on Forest Ecosystems (SIMEF) ¹⁶	GEF	Executed by the MINAGRI agencies: Forestry Institute (INFOR), National Forestry Corporation (CONAF) and the Natural Resources Information Center (CIREN) to support Policies, Regulations and SFM Practices Incorporating REDD+ and Biodiversity Conservation in Forest Ecosystems.	Develops and promotes sustainable practices in the whole country forestry activities to ensure an adapted sector to climate change. Also establish policies and regulatory frameworks for adaptation to climate change in forestry sector. And establish a monitoring system of the country's forest and non-forest lands.
Strengthening the Adaptive Capacity to Climate Change in the Fisheries and Aquaculture Sector ¹⁷	GEF	Executed by the Undersecretary of Fisheries and the Ministry of Environment to reduce vulnerability to climate change in fisheries and aquaculture in Chile and increase its capacity of adaptation to climate change	Develops and promotes sustainable practices for specific regions fishery and aquaculture activities to ensure adaptation to climate change. Also reinforce the governance to achieve adaptation. This is especially important because this sector is highly related with forestry, agricultural and livestock sector and generating positive or negative externalities depending on the type of practices.
Strengthening and Development of Instruments for the Management, Prevention and Control of Beaver (Castor Canadensis), an Invasive Alien Species in the Chilean Patagonia ¹⁸	GEF	Executed by the SAG, the National Forestry Corporation (CONAF) and the -NGO Wildlife Conservation Society (WCS) to effectively control, prevent and manage an invasive alien species in highly valuable ecosystems for biodiversity in the Region of Magallanes.	Promotes sustainable practices for a specific region in the agricultural and livestock activities to ensure an adapted sector to climate change. Also reinforce the governance to achieve adaptation
Mainstreaming conservation and valuation of critically endangered species and ecosystems in development-frontier production landscapes in the regions of Arica y Parinacota and Biobío ¹⁹	GEF	Executed by Ministry of Environment, CONAF and SAG to integrate conservation criteria of four critically endangered species (Darwin's fox, Chilean huemul, keule and Chilean woodstar) into the management of main "development border" territories in Arica y Parinacota and Biobio regions	Develops and promotes sustainable practices for specific regions forestry, agricultural and livestock activities to ensure an adapted sector to climate change. Also reinforce the governance to achieve adaptation.

Climate Change Adaptation Plan for the Forestry, Agriculture, and Livestock Sector

This proposal complements a continuous process of national capacity building, starting with the NDA and the prioritization of intervention areas, strengthening of criteria for project prioritization, together

¹⁶ <https://www.thegef.org/project/integrated-national-monitoring-and-assessment-system-forest-ecosystems-simef-support>

¹⁷ <https://www.thegef.org/project/strengthening-adaptive-capacity-climate-change-fisheries-and-aquaculture-sector>

¹⁸ <https://www.thegef.org/project/strengthening-and-development-instruments-management-prevention-and-control-beaver-castor>

¹⁹ <https://www.thegef.org/project/mainstreaming-conservation-and-valuation-critically-endangered-species-and-ecosystems>

with the development of methodology for climate change adaptation planning at sub-national level (table 2 summarizes this).

Table 2. Readiness Supports and Outcomes

Readiness Support	Outcomes
RS-001	<ul style="list-style-type: none"> • Building national capacity of the NDA to anchor longer-term planning. • Strengthening NDA capacity to define priority areas.
RS-002/RS-003	<ul style="list-style-type: none"> • Strengthened national capacity for the design of financial structuring for prioritized projects.
RS-004	<ul style="list-style-type: none"> • Planning methodology developed at sub-national level to allow for the elaboration of National Adaptation Plans.

GCF support for the formulation of adaptation planning processes in the Forestry, Agriculture and Livestock Sector is helping Chile strengthen decision-making based on best available science and meaningful stakeholder engagement. GCF Readiness support began with RS-001 by building national capacity of the NDA to anchor longer-term planning and decision making at the central and subnational levels. Of particularly relevance is activity 2.3.1 which aimed at developing the strong capacity of the NDA to define priority areas as well as activities for private sector funding. This support was followed by RS-002/003 that strengthened national capacity for the design of financial structuring for prioritized projects, as well as for developing Social & Environmental Safeguards (SES) applicable to Chile against international standards (i.e. IFC). These outputs evolved (RS-004) into the national capacity for development of a coherent framework that allows for the elaboration of National Adaptation Plans. Thus, this NAP builds upon results of previous GCF Readiness (RS-001, RS-002/003 and RS-004). It is one of the final outputs of an ongoing readiness process initiated in 2016.

During the first phase of the Climate Change Adaptation Plan for the Forestry, Agriculture, and Livestock Sector from the total number of measures in the plan (21), ten are either completed or more than 90% complete. The average level of progress of the plan is 72%; however, it is estimated that the actual percentage of compliance is higher since, for some measures under implementation, there was no updated information as of the date of this report. MINAGRI is currently planning to update the plan, in compliance with the provisions of the PNACC and with Chile's commitments to the United Nations Framework Convention on Climate Change (UNFCCC) indicated in Chile's National Contribution (NDC), in which the second cycle of sectoral adaptation plans, mentioned before, is proposed for the medium term, being the main goal of this project²⁰.

This GCF Project will provide continuity to adaptation actions in the forestry, agriculture and livestock sector supporting the development of subnational institutions and closing gaps detected in the implementation and measurement of the adaptation actions of the Climate

²⁰ Segundo Reporte Plan Nacional de Adaptación al Cambio Climático (PNACC). 2017.

Change Adaptation Plan for the Forestry, Agriculture and Livestock Sector (2013-2017), described below.

The implementation agency of the adaptation plan will be the Food and Agriculture Organization (FAO), which will be responsible for monitoring and providing technical advice in coordination with ODEPA (MINAGRI). The structure and roles of all the relevant partners at the national and sub-national levels whose involvement are critical to maximizing adaptation outputs are described in detail in section 4; however, it is important to emphasize the National Steering Committee (NSC) that will oversee the effectiveness and accomplishment of the targets.

The Ministry and the Undersecretariat of Agriculture are organized in a broad network of dependent institutions and in Regional Ministerial Secretariats²¹. This institutional structure makes it possible for MINAGRI to effectively carry out its mandate to promote, guide and coordinate the country's agroforestry activity. One of the relevant institutions for the Forestry, Agriculture and Livestock NAP is ODEPA, which has the task of developing regional, national and international information so that the different agents involved in the agroforestry activity can make decisions. Other relevant institutions from MINAGRI for the NAP are the ones with sub-regional representation:

-The Regional Ministerial Secretaries (SEREMIS) are the representatives of the MINAGRI in each of the regions of Chile. They play a fundamental role in the implementation of MINAGRI policies in the regions, provinces and communes of the country, and are mandated to implement and apply the necessary measures to promote the development and welfare of forestry and livestock.

-The Agricultural Development Institute (INDAP) promotes the economic, social and technological development of small agricultural producers and peasants. In this way, it seeks to contribute to raising their entrepreneurial, organizational and commercial capacity, their integration into the rural development process and at the same time optimize the use of productive resources.

-The National Forestry Corporation (CONAF) carries out actions to promote and sustain the Chilean forestry sector and the protection of biodiversity, both through the administration of the National System of State Protected Wildlife Areas (SNASPE), as well as through the implementation of the Forest Fire Prevention and Control Program.

In relation with sub-national capacity, this process builds upon results of previous readiness projects, particularly GCF Readiness RS-004 which strengthened the subnational capacity to engage in meaningful climate change planning. It has contributed to the mainstreaming of adaptation and mitigation measures at the subnational level through Regional Climate Change Committees (CORECC in its Spanish acronym). Having developed a coherent planning methodology at subnational level allowed Chile to advance in its NDC's commitment related to

²¹ <https://www.minagri.gob.cl/acerca-de-minagri-estructura-y-organigrama/>

adaptation planning in nine sectors; including the Forestry, Agriculture and Livestock Sector, giving priority on: water management; research, information and capacity building; risk management and agricultural insurance; and forest management.

MINAGRI, through the intra-ministerial technical committee on climate change (CTICC), completed a qualitative internal assessment of the Climate Change Adaptation Plan for the Forestry, Agriculture, and Livestock Sector (2013-2017) identifying the barriers/gaps to adaptation planning in this sector.. Some of these issues are documented in public documents²², and others are still in process of documentation.

The main barrier to the development of the Forestry, Agriculture and Livestock Sectorial Plan was initially financing, despite the mobilization of funds for specific actions on climate change²³. In addition, the gaps detected in the Climate Change Adaptation Plan for the Forestry, Agriculture and Livestock Sector (2013-2017) include:

- i) The lack of definition of goals and indicators in terms of measurement, monitoring, verification and reporting; at the moment there are no clear national methodologies that describes who, when and how outputs or results of the implementation Plan should be reported on, including the success of the measures to increase the adaptation capacity of the sector and the future impact expected by the implementation of the Plan.
- ii) Weakness in the participation of relevant actors in the development of the Plan and relevant planning processes. Given the lack of expertise in participatory processes during the development of the initial Plan, it was shared with a reduced number of experts and professionals from institutions without the involvement of a wide range of stakeholders.
- iii) The lack of institutional arrangements at the sub-national level (based on the existing 16 formal administrative regions in Chile) within the MINAGRI and within the other Public Services that impede the Ministry of Agriculture`s ability to implement the plan (solving this problem at the sub-national level would also allow a territorial and cross-cutting implementation of the plan).

Considering these gaps, past implementation challenges and MINAGRI guidelines²⁴, it is necessary to update the NAPs. The NAPs will be updated through studies and a participatory process that will determine new measures to increase the adaptation capacity and resilience of this sector, while considering the opinions and needs of the actors involved²⁵. This will ensure

²² http://catalogador.mma.gob.cl:8080/geonetwork/srv/spa/resources.get?uuiid=f80946b2-71aa-4c09-ad76-342711f7e9aa&fname=Segundo%20Reporte%20PNACC_2017.pdf&access=public
<https://mma.gob.cl/wp-content/uploads/2018/12/3rd-BUR-Chile-SPanish.pdf>
<http://www.cr2.cl/wp-content/uploads/2015/09/Evaluacion-PANCC-2008-2012.pdf>

²³ Some funding sources come from NAMA, GEF, FCPF, ONUREDD, FACC and bilateral cooperation, among others.

²⁴ Includes the promotion of rural development, modernization of agriculture, innovation, research and technology transfer and sustainable agricultural production, among others.

²⁵ Academics, representatives of the private and public sectors, indigenous peoples, students, small and medium-sized business owners, among others.

Chile's ability to overcome sector and national implementation barriers, improve governance by reducing vulnerability, and improve adaptation to climate change in the agriculture, forestry and livestock sector. With the support of the Public Services that comprise the MINAGRI (and by working with other relevant Ministries), and by integrating the initiatives and lessons learned during the implementation of the initial Plan, the new Plan will strengthen capacities and generate coherence between policies, programs and new activities in the forestry, agriculture and livestock sector.

This project will help Chile achieve the following expected results:

- Result 1: Creation of a specific organizational framework for climate change adaptation and planning coordination within the Forestry, Agriculture, and Livestock Sector in the MINAGRI; with a focus on strengthening institutional capacities to address climate change inside the Ministry and the development of mandates that allow implementing with the active involvement of the authorities of the MINAGRI in the sub-national administration. The activities related to the results will be planned jointly between MINAGRI and FAO Gender Unit to ensure the women and men are equally involved.
- Result 2: Development of a specific strategic planning framework for climate change adaptation within the Forestry, Agriculture, and Livestock Sector; to be achieved through a multi-stakeholder process across national and sub-national units, including workshops, focus groups and an independent mediator to study the existing situation and promote discussion through guiding questions; also complemented with a costs analysis framework and the develop of a mechanism for regularly reviewing and updating adaptation plan. Representatives belonging to the Forestry, Agriculture, and Livestock Sector from the private sector and civil society will be involved in the process ensuring their participation and representation, including representatives of indigenous peoples and taking into account gender considerations, which should have a minimum participation of 30% in each workshop²⁶ and will form a specific focus group. The measures defined in the participatory preparation phase will be estimated in relation to their implementation costs, prioritized and validated by the citizens.
- Result 3: Alignment and coordination of the Climate Change Adaptation Plan for the Forestry, Agriculture, and Livestock Sector and the MINAGRI climate change structure and governance with the country's general development policy and strategy for climate change; this would ensure that adaptation measures will be integrated into national, sectoral or sub-national plans, programs and policies, through the identification of synergies and possible co-benefits between them.
- Result 4: Improved adaptation finance action plan focused on the engagement of the private sector related with Forestry, Agriculture, and Livestock Sector; this plan would

²⁶ The minimum benchmark participation of 30% was defined after the successful experience of the National Strategy on Climate Change and Vegetational Resources (ENCCRV) that had an effective participation of stakeholders, particularly indigenous peoples, women and local communities, in the planning, design, implementation and monitoring of the Strategy.

include the identification and design of mechanisms to attract and involve potential sources of financing to the sector, as well as the development of a portfolio of projects and possible livelihood diversification.

- Result 5: A specific system for monitoring, evaluation and learning capacity established for the Forestry, Agriculture, and Livestock Sector; this includes the definition of measures, indicators, and methods for monitoring the Climate Change Adaptation Plan for the Forestry, Agriculture, and Livestock Sector and the MINAGRI, and options for systematically gathering lessons learned and integrating them into future iterations of the identified adaptation planning process and with the National Climate Change Adaptation Plan and the other sectoral plans.

It is relevant to notice that the adaptation planning process will continue beyond the project because there is a strong commitment for climate change actions in the Chilean government to implement the NDC through long term strategies, like the National Neutrality Target and the Long-Term Climate Strategy; and other elements like the new Climate Change Law. Moreover, in Outcome 1, the proposal considers establishing a simple and effective structure for the governance of the NAP: 16 Regional Technical Focal Points (RTFP) based on one of the MINAGRI's Institutions with sub-national representation (INDAP, CONAF or others), also related at the subnational level with the Regional Climate Change Committees (CORECC), and will response directly to the SEREMIs of Agriculture of each Region. Also, the RTFP will lead a multi-stakeholder engagement process, considering the active involvement of all sectors of society, including local governmental institutions, private sector and civil society.). Finally, it is important to mention that one of the goals of the project is to ensure continuity at national and sub-national level, and that is explicit in the main outcomes, especially outcome 5.

The engagement of the private sector is especially important for this NAP in order to ensure financial sustainability. This will be possible because the private sector is involved throughout stakeholder engagement process at the national and subnational level. There is private sector advisory group at the national level while at the subnational level the private sector participants validate the NAP outcomes, contributing to the development of a financial plan to implement the prioritized adaptation measures.

Gender and Indigenous People (IP) approach:

Over the last years, Chile has made good strides in promoting gender equality. According to the ranking of the Global Gender Gap of the World Economic Forum for the year 2018, Chile has an index core of 0,717, ranking it 54 out of 149 countries²⁷. Some of those actions have meant progress in the situation or status of women, while others have revealed the persistence of discrimination and of obstacles to full equality of opportunity between men and women in the

²⁷ http://www3.weforum.org/docs/WEF_GGGR_2018.pdf

country. Also is important to notice that in relation to IP Chile recognizes nine indigenous ethnic groups and according to the National Socioeconomic Characterization Survey²⁸, have an estimated population of 1.56 million people across the country and represents 9.1% of the total population. The largest ethnic groups correspond to Mapuche (84.4% of the total indigenous population) and Aimara (7.7% of the total indigenous).

A successful NAP for the sector requires significant participation throughout the process of IP and the explicit inclusion of gender consideration. The review of the previous NAP did not detect any gaps in terms of gender and IP consideration, except for a general observation about the weaknesses of the stakeholders' participation. However, the updating of the Forestry, Agriculture, and Livestock NAP will pay close attention to identify the gaps areas impacting gender and IP considerations to make sure they are aligned with the Paris Agreement approaches and goals of gender equality and empowerment of women. A gender responsive NAP process involves three issues²⁹: i) Recognition of gender differences in adaptation needs, opportunities and capacities; ii) Equitable participation and influence by women and men in adaptation decision-making processes; and iii) Equitable access to financial resources and other benefits resulting from investments in adaptation between women and men.

The project considers a horizontal component specifically with regards to gender and IP as a central axis of the NAP in all its phases and integrating the methodological perspective based on interculturality principles proposed by the UN "Guide for the Evaluation of Programs and Projects with a Gender Perspective, Human Rights and Interculturality". The objective of this approach is to address the necessary broad and equal inclusion interests, needs and proposals of women, as well as IP, thus assuring that benefits arising from the implementation of the NAP are equitable between men and women, and among Indigenous Peoples. Also, there will be special attention to identifying the necessary quantity of women representatives/IP at the subnational level as part of key stakeholders, facilitating their participation. Also the mainstreaming of the gender approach will be also evaluated through specific indicators included in the Logical Framework

The NAP process will include the government officials in charge for gender and IP inside the MINAGRI institutions related with the Sectorial NAP (ODEPA, SEREMIS, INDAP and CONAF). This will include the representations in all the 16 Chilean regions through the 16 Agricultural SEREMIS and the INDAP and CONAF regional offices (for more details see section 4).

The design of the NAP will follow the United Nations Declaration on the Rights of Indigenous Peoples, recognizing their rights and making specific mention of Free, Prior and Informed Consent (FPIC) as a pre-requisite for any activity that affects their ancestral lands, territories and natural resources. Also, it will follow the principles from Chilean Law 19.300 / 1994 and its regulation³⁰.

²⁸ http://observatorio.ministeriodesarrollosocial.gob.cl/casen-multidimensional/casen/casen_2013.php

²⁹ <https://www.iisd.org/reader/napgn-en-2018-towards-gender-responsive-nap-processes/5-gender-responsive-nap-processes-an-overview>

³⁰ <https://www.leychile.cl/Navegar?idNorma=30667>



<p>Outcome 3: Alignment with country's overall development policy and strategy</p>	<p>Sub-outcome 3.1: Climate change adaptation measures integrated into national sectorial plans, programs and policies for the Forestry, Agriculture and Livestock sector.</p>	<p>1 The National Irrigation Plan, incentives for recovering degrading lands, and incentives to implement sustainable forest management have a consideration on climate change, but the adaptation measures are not fully integrated into these incentives or other plans, programs and policies.</p>	<p>2 Harmonise climate change adaptation measures with all the plans, programs and policies in MINAGRI, and as far as possible with other sectors.</p>	<p>Activity 3.1.1: Identification of synergies and possible co-benefits between adaptation measures (identified in activity 2.1.1) and promotion of existing instruments, policies and strategies</p> <p>Deliverable 3.1.1: Recommendation for harmonization of relevant national programmes, plans, instruments, strategies and policies, including identified synergies and co-benefits.</p>																									
	<p>Sub-outcome 3.2: The production, validation and publishing of the sectorial climate change adaptation plan for the Forestry, Agriculture and Livestock Sector.</p>	<p>1 A Adaptation Plan for the Forestry, Agriculture and Livestock Sector was produced, validated and published, for the period 2013-2017, but has not been reviewed or updated due to the lack of capacity in the Ministry.</p>	<p>2 An updated climate change adaptation plan for the Forestry, Agriculture and Livestock Sector.</p>	<p>Activity 3.2.1: Organize a public consultation (ensuring the participation of key non-institutional parties, private sector and civil society) to validate the first draft of the sectorial climate change adaptation plan, including i) 3 rounds of review and consultation based on the voluntary contribution of partnership between government and universities, considering gender and indigenous people experts; ii) 1 public consultation (online, organized by the government) promoting gender participation, and iii) 10 indigenous dialogues (1 in each region) for the Free, Prior and Informed Consent of the Adaptation Plan.</p> <p>The inclusion of the gender and IP approach is vital in this activity to improve the governance, coordination, inclusiveness and relevance of the activities with women and IP, ensuring more robust results.</p>																									

4. ADDITIONAL INFORMATION (ONLY FOR ADAPTATION PLANNING SUPPORT)

General Framework of the Adaptation Processes in Chile

I. Vulnerability of the country to climate change

Chile is vulnerable to climate change, since it complies with seven of the nine vulnerability characteristics as defined by the UNFCCC. Climate change projections generated in Chile for the term 2031- 2050 (RCP2.6, RCP8.5, CMIP3-SRES A1B and the regional simulation PRECIS-ECHAM5 for the A1B emissions scenario), shows a warming pattern similar in all cases: greater warming at the high plateau level and lower at the southern region. The regional model, given its greater space resolution, projects a greater warming in the Andean zone. In the case of rainfall, the trends show that the term 2031- 2050 would be dryer as compared to the historical mean and a decrease between 5% and 15% is foreseen for the zone between 27°S and 45°S latitude, which will intensify for the second half of the 21st century³³.

Extreme weather events - and disasters, as a consequence of those- are expected to increase due to the combination of climate change effects and the natural variability, which is influenced strongly by three climate drivers: El Niño Southern Oscillation (ENSO), PDO and the Antarctic Oscillation (AAO). In central Chile, during El Niño phase the possibility of rainfall is higher than normal³⁴. On the contrary, a decreasing trend has been noted in the rainfall amounts every time a significant decrease of the sea superficial temperature is recorded, during La Niña phase³⁵. Climate forcing has a significant impact on the frequency and intensity of hydro meteorological phenomena, such as the so called “mega-drought”³⁶ that lasted from 2010 to 2015.

Regarding the cryosphere, recent studies indicate that climate variability factors (ENSO, PDO) affect considerably snow accumulation and mountain flow regimes. Historical changes in temperatures have altered the flow of lower elevation rivers, which suggests a possible development of a future threshold effect which could burst if the temperature increase noted during the last decades continues³⁷. Other large components of cryosphere are glaciers. Recent evidence shows a backwards trend in most of glaciers in Chile.

The sea level relative variation (Nivel Medio del Mar: NMM) as compared to the marine soil is conditioned by the seismic activity in the subduction zone between the Nazca plate and the South American plate. An analysis from the records of up to sixty years of the national network of mareographs, belonging to the Oceanographic and Hydrological Service of the Chilean Army (SHOA)³⁸ indicates that the place with the greatest increase in NMM is Easter Island, with 3.2 mm/year. Forecasts of one of the climate change conservative scenarios for 2100 show NMM increases between 0.2 and 0.3 m for different latitudes in Chile, values

³³ http://snichile.mma.gob.cl/sites/default/files/documentos/2016_es3nc_chile.pdf

³⁴ <http://www.redalyc.org/articulo.oa?id=12627325>

³⁵ <https://journals.ametsoc.org/doi/pdf/10.1175/1520-0442%282002%29015%3C1118%3AEWENOA%3E2.0.CO%3B2>

³⁶ <http://www.cr2.cl/informe-a-la-nacion-la-megasequia-2010-2015-una-leccion-para-el-futuro/>

³⁷ https://link.springer.com/chapter/10.1007/978-3-642-39103-3_2

³⁸

https://www.researchgate.net/publication/235106366_Implicancias_de_la_variacion_del_nivel_medio_del_mar_por_cambio_climatico_en_obras_de_ingenieria_costera_de_Chile

which coincide with the increase rates estimated by CEPAL³⁹ and the IPCC report⁴⁰. Using numerical models, Albrecht and Shaffer (2016)⁴¹ project NMM increases at the Chile coast of 34 to 52 cm for the RCP4.5 scenario, and of 46 to 74 cm for the RCP8.5 scenario at the end of the 21st century. On the other hand, the increase of atmospheric CO₂ emissions is inducing changes to the chemistry of sea water, decreasing its pH, lowering the availability of carbonate ions and reducing the calcium carbonate status. This phenomenon occurs at a faster pace at the polar and sub-polar regions, such as Antarctica. The average pH of the surface water has been reduced by approximately 0.1 units since the industrial revolution and future reductions are expected of up to 0.3 units for year 2100⁴².

Most vulnerable sectors for adaptation to climate change

From a vulnerability perspective, it is expected that the country is significantly impacted by climate change associated phenomena. The most relevant sectors in Chile that are vulnerable to climate change are: water resources; biodiversity; forestry, agriculture and livestock; fisheries and aquaculture; energy; cities; health; infrastructure and tourism. A brief explanation of the impacts of climate change in each of these sectors is shown below.

1. - Water Resources: the impacts for water sector are expected to affect the availability of the resource due to 1) the reduction of water supply for different productive uses, to sustain valuable means of life or ecosystems and 2) the increase of negative effects as a consequence of detriment of water quality or occurrence of extreme events such as disasters of hydro meteorological origin. Water resources are directly connected to a series of sectors and systems; therefore this is the most relevant sector for the country to be addressed in its climate adaptation policies. Significant progress has been made in Chile in the analysis of indirect impacts mediated by changes in hydrological conditions. Currently there are 37 basins or sub-basins under analysis from a hydrological perspective, applying simulation models. In spite of all the progress related to information of the effects on climate by the observed and projected changes, more accurate information should be generated, including subjects that need further assessment such as the effects of temperature increase on snow sublimation in the northern and central zones of the country; the understanding of the influence of rocky glaciers on the rivers runoff regime; the dynamics and impacts of climate change on glaciers in the Austral Region of the Country and Antarctica; the impacts and dynamics of underground water, among others. On the other hand, the sector of water resources is highly complex in terms of governance, consequently a multi-stakeholder participatory process is needed in order to develop an adaptation plan.

2. - Biodiversity: the main results of the studies carried out show a longitudinal variation of desert formations towards Andean vegetation and a latitudinal advance towards the south of the desert scrub formations and mediterranean sclerophyllous forests. The highest space variability is concentrated in the Mediterranean zone of central Chile and the interior North zone of the high-temperature area (Araucanía Regions, de Los Ríos y Los Lagos), which

³⁹ https://repositorio.cepal.org/bitstream/handle/11362/4003/1/S2012065_es.pdf

⁴⁰ https://www.ipcc.ch/site/assets/uploads/2018/02/WGIAR5-Chap27_FINAL.pdf

⁴¹ <https://www.jcronline.org/doi/abs/10.2112/JCOASTRES-D-15-00192.1>

⁴² https://www.ipcc.ch/site/assets/uploads/2018/03/WG1AR5_SummaryVolume_FINAL.pdf

corresponds to areas dominated by scrub and sclerophyllous forests, thorn forests and deciduous forests. A study developed by Santibáñez et al. (2013)⁴³ shows a trend to an amplified vulnerability towards the central zone both due to an increase of the anthropic presence as well as the expected results of bioclimate stress. The study also concludes that faced to the new climate scenarios, vegetation floors tend to reduce and fragment around their present area instead of displacing. Further assessment should be made regarding: terrestrial ecosystems; continental aquatic ecosystems; marine ecosystems and invasive alien species, based on the most recent and up-to-date climatic simulations for the country.

3. - Forestry, Agriculture and Livestock: most of the country's agricultural regions (Atacama to Los Lagos) would experience aridization as a consequence of rainfall decline which will continue during the 21st century⁴⁴. A displacement of the current agroclimate zones to the south of the country is expected, particularly referring to fruit crops and forestry⁴⁴. Impacts on agricultural productivity projections have been updated for some crops, taking into account the new RCP climate scenarios. Around 2050 the production potential would considerably expand towards southerner latitudes as compared to the current extension, a displacement mainly explained by temperature increase in such latitudes. Notwithstanding, in the northern part of the current production zone, the productive potential is expected to decrease.

4. - Fisheries and aquaculture: the potential impact of climate change on Chilean fishing and aquaculture are mainly focused on the effects of inter-annual variability associated to ENSO and PDO events. The importance of such variability is related to different space-temporary scales with effect on abundance, survival to the first stages of life, recruiting and changes in species distribution. In Chile at least 11 fish and mollusk resources show different levels of vulnerability to climate change: anchovy (*Engraulis ringens*), common sardine (*Strangomera bentincki*), horse mackerel (*Trachurus murphyi*), hake (*Merluccius gayi*), and species of sand eel conger eel, crabs, Juan Fernández lobster (*Jasus frontalis*), clam (*Mesodesma donacium*), large oyster (*Argopecten purpuratus*), abalone (*Concholepas concholepas*) and sea urchin (*Loxechinus albus*). Studies on the impact of future changes in the sea mean surface temperature (TSM) project an increase in the anchovy catches in the north of Chile in case TSM decreases by 0.02 °C a year, and remarkable decreases if TSM increases by 0.034 °C a year or by 0.025 °C a year⁴⁵.

5. - Energy: in terms of energy supply, a series of connections with climate conditions may be found, particularly in the case of renewable generation sources. The most evident is the case of hydroelectric generation, which directly depends on the availability of hydric resources. In Chile, a little less than 50% the electricity supply of the Central Interconnected System (from Taltal to the South) comes from hydroelectric generation and, in general, the growth plans of such offer consider this source as a significant strategic axis. The latter

⁴³ http://www.agrimed.cl/informaciones_detalle.asp?Solicitud=8&Tipo_Contenido=Proyectos%20en%20ejecuci%F3n

⁴⁴ ftp://dgf.uchile.cl/pub/maisa/SOC28/Capitulo4_Vulnerabilidad_Silvoagropecuaria/IV%20-%20Vulnerabilidad%20-%20Informe%20Final.pdf

⁴⁵ https://link.springer.com/chapter/10.1007/978-94-017-8962-2_16

coincides with recent studies⁴⁶ which show there is still a significant generation potential for the basins in the south of Chile (basins at the south of river Maipo).

6. - Infrastructure: the vulnerability of this sector to climate change has started being characterized by means of studies describing the potential impacts on hydric resources (as a resource and as a threat) and implications of such impacts. Impacts associated to climate change would affect drainage, fluvial works, bridges, ports infrastructure as well as coastal infrastructure. The Ministry of Social Development has recently started to develop methodologies for the Identification and assessment of disaster hazards in public investment projects, effort that requires a better description of the physical processes and vulnerability, and of exposure conditions that trigger a disaster.

7. - Cities: the study "Urban Adaptation to climate change"⁴⁷ identified five main threats for the urban areas, of a total of fourteen: floods, mudslides and downpours, landslips, droughts and temperature increase. The limitations of national institutions in deploying climate change agendas at their national territories and the lack of involvement by local governments, increases vulnerability conditions in some cities along the national territory. In an analysis (2016) carried out within the framework of the elaboration of the Adaptation Plan for Cities⁴⁸, an impact hazard index of climate events was estimated per regional capital according to the climate origin threats and an evaluation of the social vulnerability based on poverty.

8. - Health: the relationship between climate change impacts and their effects on human health is complex and multidimensional, hence it is difficult to isolate particular causes so as it is necessary to learn their interactions to identify where to concentrate efforts. According to the study "Identification of impacts, vulnerability assessment of the health sector to climate change and adaptation proposals"⁴⁹, the main impacts on health in the country are: impacts expected as a consequence of extreme hydro-meteorological events, which may cause an increase of infectious and diarrhea diseases; diseases associated to water consumption and contaminated food; morbidity variation as a result of temperature changes, as well as damages and death for the direct effect of such phenomena.

9.- Tourism: among Chile's main touristic attractions are its wide coast and sea, river and lake shores; the Andes mountains, with their ski stations, their hills and volcanoes; islands and islets, among them Easter Island and Chiloé; as well as other natural sceneries integrated by natural reserves, nature sanctuaries, national parks, natural monuments, RAMSAR sites and biosphere reserves. In spite of all these possible connections between climate change and the tourism sector, to date there are no studies at a national level that

⁴⁶ <http://antecedentes.goredelosrios.cl/wp-content/uploads/2017/02/Base-para-la-Planificaci%C3%B3n-Territorial-en-el-Desarrollo-Hidroel%C3%A9ctrico-Futuro-Ministerio-de-Energ%C3%ADa.pdf>

⁴⁷ https://cambioglobal.uc.cl/images/proyectos/Documento_041_Proyecto-Adaptacin-Ciudades-Final-MMA_CCG-CEDEUS-ADAPTChile.pdf

⁴⁸ https://mma.gob.cl/wp-content/uploads/2018/06/Plan-CC-para-Ciudades_aprobado-CMS-ene2018-1.pdf

⁴⁹ https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=2ahUKewikg-Gh-u7iAhWqMewKHs7AfcQFjABeqQIABAC&url=http%3A%2F%2Fmetadatos.mma.gob.cl%2Fservicios%2Fmetadata%2Frecursos%2FdownloadRecurso%2F323942%2F2012_Vulnerabilidad%2520Sector%2520Salud%2520Cambio%2520Clim%25C3%25A1tico%2520y%2520Propuestas%2520Adaptaci%25C3%25B3n.pdf&usq=AOvVaw1Jixu0HWAUiv8oY_ruQGDl

explicitly evaluate the potential impacts or tourism vulnerability to climate change phenomenon.

II. General framework for adaptation in Chile: NAP and sectoral plans

Based on the commitments adopted in Nationally Determined Contribution (NDC) of the Paris Agreement, Chile has advanced with various policies, plans and strategies to address climate change.

The most general ones, which include climate change within their themes, correspond to ministerial strategies such as: The Ministry of Public Works' 30/30 Agenda, the Ministry of Agriculture's National Strategy of Climate Change and Vegetational Resources (ENCCRV), the Ministry of Energy's 2050 Energy Policy, and the Strategic Plan for Disaster Risk Management of ONEMI and the Ministry of the Interior and Public Security.

Subsequently going to the specific plans and policies for climate change Chile has the National Action Plan on climate change (PANCC 2017-2022) which is an instrument of public policy that integrates and guides the actions to take as a country in relation to the subject of climate change; with a transversal and integrated vision, in adaptation, mitigation of impacts, capacity building, and management of climate change at the regional and community levels, orienting the measures adopted towards a low carbon economy.

Within the PANCC there is the National Adaptation Plan to Climate Change that corresponds to the articulator instrument to define the adaptation public policy to the effects of climate change in the long term. This plan provides the conceptual framework and guidelines for adaptation in Chile, and it articulates with the sectoral adaptation plans, for the sectors defined as priority: Agriculture, Livestock and Forestry, Biodiversity, Fisheries and Aquaculture, Health, Infrastructure Services, Cities, Energy, Tourism and Water Resources. The National Adaptation Plan to Climate Change provides the institutional structure through which coordination and coherence is turned to actions from different sectors, localities and regions, considering that adaptation can be carried out at the level of a specific sector, at a multisectorial, regional or cross-nationally.

According to the country's commitments undertaken through its NDC (2015), in 2021 Chile shall have adaptation plans for the 9 sectors and as of 2021, Chile has set the aims of initiating a second cycle of sectorial plans for climate change adaptation, based on the experience gained so far; having an updated NAP and developing a national assessment practice by 2026, through vulnerability indicators and methodologies aimed at determining the increase of the capacity of adaptation of the individuals, communities and systems impacted by climate change.

Currently 7 of the 9 sectoral plans are under implementation:

Forestry, Agriculture and Livestock (2013) is closing its implementation cycle and must be updated soon to comply with the Chilean NDC.

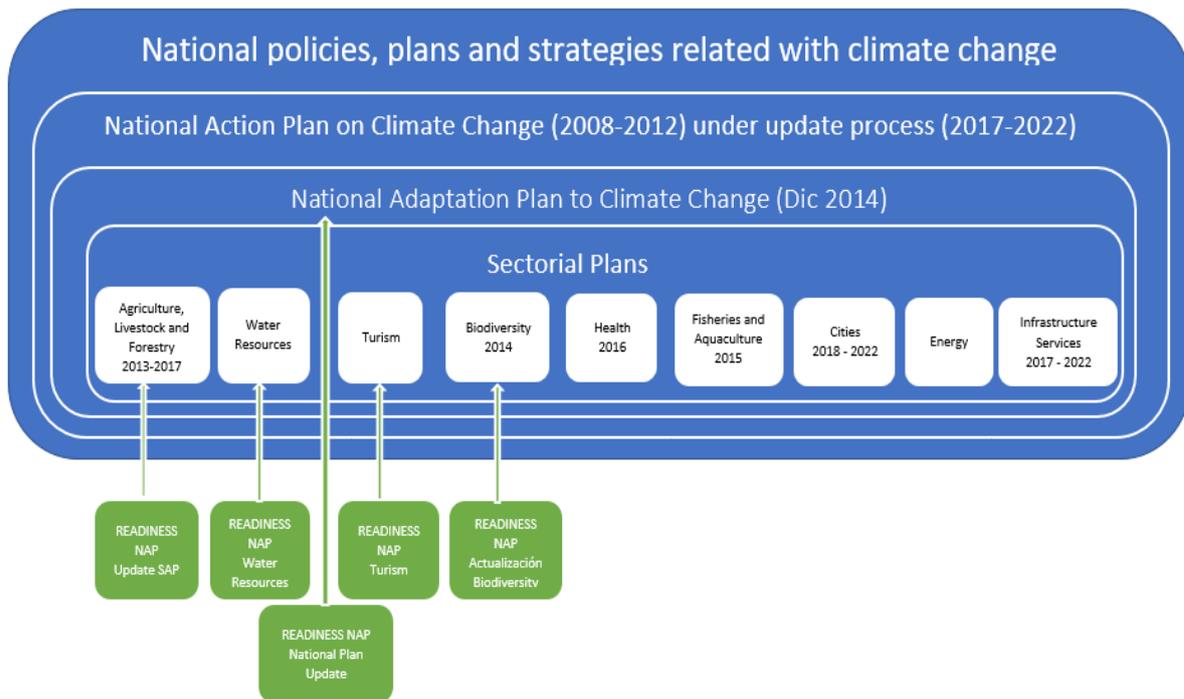
Biodiversity (2014) currently at the second half of its implementation period shall be updated soon to comply with the Chilean NDC.

Fisheries and aquaculture (2015); Health (2016); Infrastructure (2017); Cities (2018) and Energy (2018) are currently under different stages of implementation.

Regarding the Tourism and Water resources sectors, vulnerability studies have been carried out in previous years (mostly for the water resources sector, as it was stated in the previous section) and steps have been taken to establish a governance to develop these sectoral plans. Due to lack of both human and economic resources these plans have not been elaborated yet.

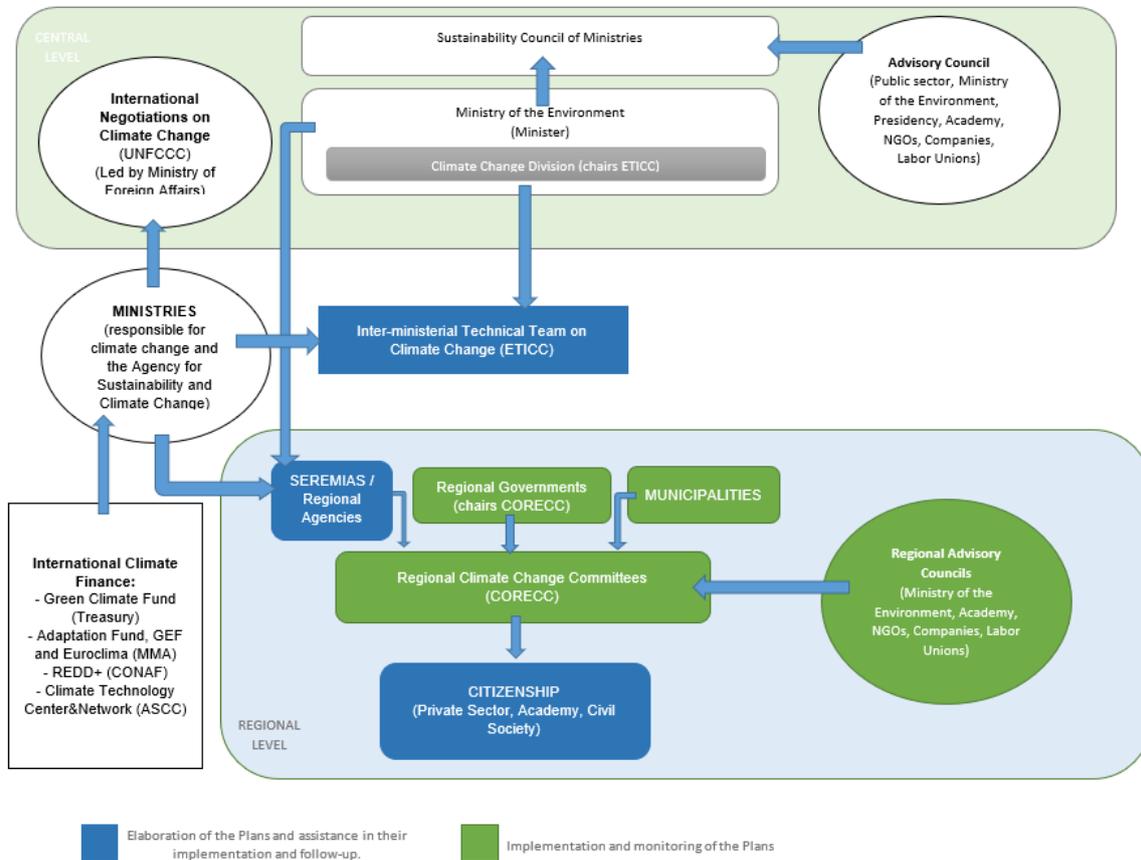
Finally, the NAP (2014) is currently in the last stage of its implementation period and shall be updated. As it was indicated before, the NAP defines the guidelines for adaptation in the country and provides an operational structure for its coordination and implementation, both with sectorial and cross-sectional approaches, in different administrative territorial levels. The Chilean policies on climate change are summarized in the figure 2.

Figure 2. Chilean Policies on Climate Change



To implement and supervise the development and coordination of these initiatives, Chile has a governance structure at the national level and also, more recently, at the sub-national inter-sectorial level, representing the organizational structure for the implementation of national policies on climate change, as shown in figure 3.

Figure 3. Organizational structure for the implementation of the national policy on climate change



The MINAGRI has also developed the institutional framework required for the implementation of climate actions at the national level, which explained ahead. However, there are still some gaps including the lack of an institutional framework at the sub-national level, which is addressed by the updated NAPs.

III. Proposal to the GCF

In order to advance in the adaptation strategy, the country needs resources to fulfill the gaps and necessities indicated before, to be able to comply with both the NDC commitments and the goals of the national policies. Hereby, a proposal has been developed to have access to the GCF readiness programme resources for NAPs processes.

Considering the current needs of the country, the following actions shall be taken to move forward:

- Elaborate the Tourism and Water Resources plans before 2021.

- Update the Forestry, Agriculture and Livestock plan and the Biodiversity plan, which are reaching the end of their implementation periods and shall be updated every 5 years.
- Update the NAP before 2021, reinforcing the cross-cutting vision for adaptation in the country, considering lessons learned during the first period of the NAP, filling the gaps and needs and driving adaptation strategies to a higher level of understanding and development.

The new plans will include the economic assessments of measures, indicators of progress and establishing mechanisms for the implementation at the local level.

The new plans will also consider the relationship between adaptation processes and mitigation actions within the framework of the Chilean NDC. So far there has not been a deeper analysis in the subject, so the synergies between mitigation and adaptation will be one of the important points to address in the development of the new NAP and sectoral plans.

With that scope in mind, a whole of 5 projects will be submitted to the GCF by the country. The specific plans, amounts and development status of those projects are shown in table 3.

Table 3. List of proposal to be submitted to the GCF

Plan	Total amount to request USD	Expected date of submission	Implementing Entity
Forestry, Agriculture and Livestock	500,000	Dec 2019	FAO
Biodiversity	400,000	4 th quarter 2019	FAO
NAP	300,000	4 th quarter 2019	FAO
Tourism	300,000	1 st quarter 2020	FAO
Water resources	1,500,000	1 st quarter 2020	FAO
Sum	3,000,000		

The indicated projects will incorporate assessments of previous processes, when appropriate, their outcomes and lessons learned; identification of gaps and needs; different participatory processes and other components, with the aim of obtaining an articulated and strengthened policy in adaptation, which permits the country to be prepared to face the impacts of climate change and also to comply with its international commitments for the Paris Agreement. As being the first of the five projects; the Forestry, Agricultural and Livestock Sector NAP will be the most useful one, providing lessons learned, information about the implementation gaps, participatory process and other relevant topics for the other four NAPs

The timing of the proposal to update de NAP is being coordinated with Minister of Environment and the NDA to secure a complementary approach on three sectors (Biodiversity, Tourism, and Water Resources). There are different technical teams working the three proposals.

Forestry, Agriculture and Livestock Adaptation Plan

The forestry, agriculture and livestock sectors are important generators for employment in Chile and represent a significant share of the country's gross domestic product. Chile's Third National Communication presented a detailed analysis of the potential impacts of climate change on agriculture. Most of the agricultural regions of the country (from the Atacama Region in the north to the Los Lagos Region in the south) will suffer from increased aridity as a result of declining rainfall and there will also be a shift of agroclimatic zones to the south, especially in terms of fruit growing and forestry^{Error! Bookmark not defined.}. According to this analysis, it is estimated that the forestry, agriculture and livestock sector is one of the most vulnerable to the phenomena of climate change.

In December 2017, Chile's Agroclimatic Atlas⁵⁰ was published as a continuation of previous studies that will be included in the updated NAPs. This Atlas provides scientific answers to questions such as: How much has the climate changed in recent years? How much could it change in the coming decades? What could be the impacts of new climate behaviours on crops and natural ecosystems? The study integrates climate scenarios, modeling techniques and spatial analysis to identify the most vulnerable sectors of the national territory and reinforces the conclusions presented in the Third National Communication.

Also, as part of efforts to assess vulnerability and integrate the impacts of climate change into national planning, Chile used its own resources to develop the project "Regional climate simulations and vulnerability assessment framework", which was developed by the Center for Climate Science and Resilience.

In addition to these adaptation efforts that have received international support, Chile has implemented a series of projects, including the following:

The "Sustainable Mediterranean Communities Project (CMS)" aims to generate local capacities to face environmental threats, empowering communities and local organizations through a territorial management model that allows the financing of sustainable productive activities and public and private co-financing.

The GCF recognizes that countries are adopting approaches for national adaptation planning. In this regard, Chile's MINAGRI, commissioned the Office of Agricultural Studies and Policies (ODEPA) and INDAP to design and implement the national SIPAN network, involving the creation of a team at the national and regional level, which has received technical support from FAO and is partly financed by GEF. These institutions are responsible for developing a model to facilitate coordination between actors at the local and regional level; generate new capacities and social capital in various areas; develop actions to generate

and systematize local knowledge with the support of public and private institutions; strengthen sustainable production systems and safeguard biodiversity through local technical assistance and investments; and strengthen and preserve local agricultural and cultural heritage.

Another project related to the implementation of adaptation plans in the agricultural sector is called "Enhancing Resilience to Climate Change of the Small Agriculture in the Chilean Region of O'Higgins", financed by the Adaptation Fund. It seeks to support MINAGRI by improving water use and management, and increasing the resilience of rural agricultural communities in the eight communities of the O'Higgins Region that are most vulnerable to climate change.

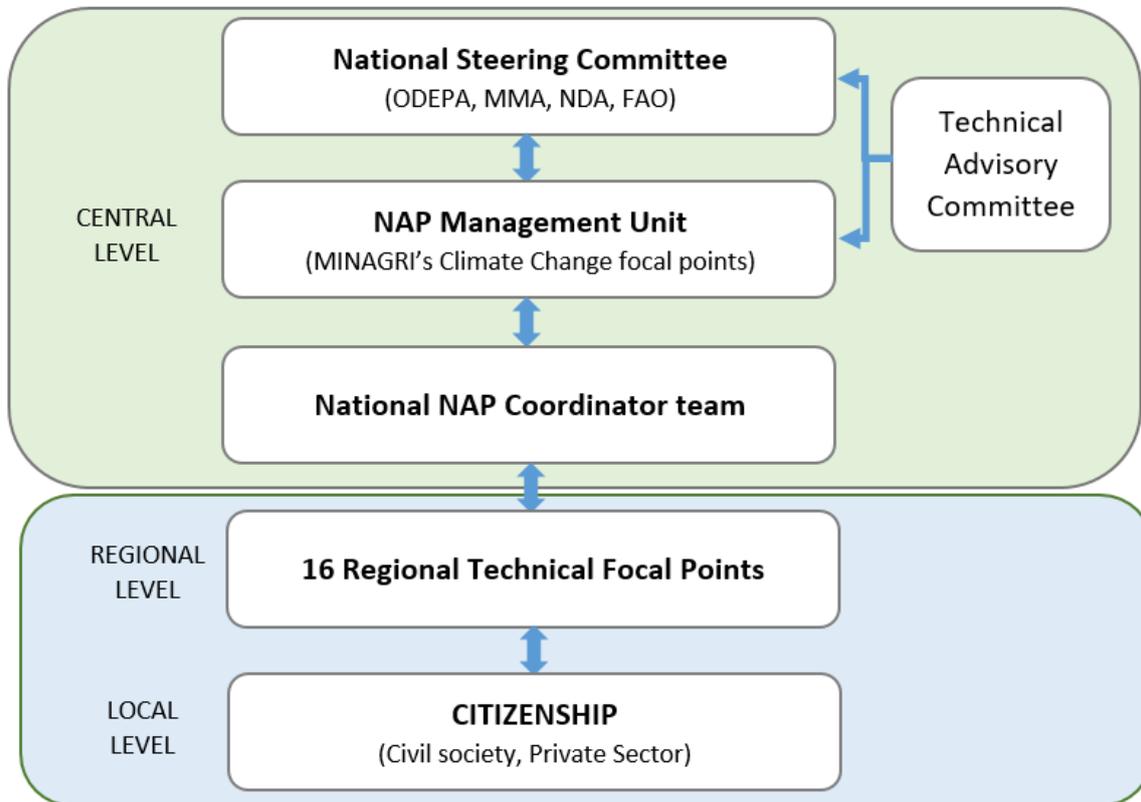
In addition, MINAGRI, through the National Forestry Corporation (CONAF), has developed the National Strategy on Climate Change and Vegetation Resources (ENCCRV), which is considered the main tool of the land use, land-use change and forestry sector (LULUCF) to ensure compliance with Chile's NDC. The Strategy considers a series of actions focused on reducing the social, environmental and economic vulnerability generated by climate change, desertification, land degradation and drought.

One of ENCCRV's areas of work is through the "Sustainable Land Management project (MST)", which has developed a series of links between State services focused on the implementation of concrete actions for sustainable land management through instruments that promote forestry and agriculture. This includes long-term planning at the scale of the family farm, soil conservation practices and erosion control, practices for the protection of watercourses and sustainable water management, plant protection, good agricultural practices and sustainable management of livestock.

Organizational structure for the implementation of the institutional framework on climate change in the forestry, agriculture and livestock sector

The Food and Agriculture Organization (FAO) will be the implementing agency responsible for monitoring and providing technical advice during the adaptation planning. Technical advice will be carried out in coordination with ODEPA (MINAGRI). The structure and roles of all the relevant partners at the national and sub-national level whose involvement are critical to maximize the adaptation outputs are described below and summarize in figure 4.

Figure 4. Organizational structure for the implementation of the institutional framework on climate change in the forestry, agriculture and livestock sector



The National Steering Committee (NSC) will be established for the strategic decisions of the NAP, which will be composed of the National Directors of ODEPA, FAO Representative in Chile (as implementing agency), the GCF Focal Point in Chile (Ministry of Finance), and the the Ministry of Environment. Its function is to guide the implementation of the project, to verify and approve the annual operational plan, to approve the financial and technical reports, and to provide strategic guidance for the overall conduct of the project.

A NAP Management Unit (NMU) composed of the Climate Change focal points of MINAGRI led by ODEPA, represented in the Intra-ministerial Technical Committee on Climate Change (CTICC), includes representatives from the different institutions of MINAGRI (ODEPA, CNR, SAG, INDAP, CIREN, CONAF, INFOR, DGIR, AgroSeguros, and FIA). Its function is operational coordination of the NAP process and outcomes, in addition of monitoring and evaluation of the process and inter-institutional articulation.

The National/Subnacional Coordination Team (NSCT) funded by GCF will be established. The main role is to ensure coordination and implementation of the NAP through the effective implementation of the work plan. It will be composed of National NAP Coordinator (NNC), one sub-national Coordinator, one Full-time Technical-Administrative Assistant. The NNC will be in charge of the day-to-day management of the project and technical supervision, including: (i) coordinating and closely supervising the execution of project activities in conjunction with the ODEPA and FAO; (ii) the correct execution of activities relevant to the

development of the NAP; (iii) day-to-day management, (iv) coordination with other related initiatives; (v) ensure a high level of collaboration between participating institutions and organizations at national and subnational levels (regional and local); (vi) monitor progress project and will ensure timely delivery of inputs and outputs; (vii) implement and manage the project monitoring plan and its communication program; (viii) organize multi-stakeholder engagement process and to monitor project progress; (vii) present relevant information to the National Steering Committee and NAP Management Unit; (ix) act as representative before de GCF Focal Point.

The 16 Regional Technical Focal Points (RTFP) will be based on one of the MINAGRI's Institutions with sub-national representation and will response directly to the SEREMIs of Agriculture of each Region. Also, they will lead a multi-stakeholder engagement process, considering the active involvement of all sectors of society, including local governmental institutions, private sector and civil society.

ODEPA will exercise the role of NAP Implementation Coordination, including responsibility for: operational coordination of the NAP process and outcomes design-work program and of the agreements reached in the CNDP and the CGP that have an operational implication; articulation and operationalization of the GEF Project Work Program in the regions and territories, in coordination with the SEREMI of Agriculture and the Project Team; coordination and support to the implementation of support initiatives of other intra or extra MINAGRI institutions in the regions and territories involved; collaboration to develop an adequate working climate in the implementation of activities in the territories, by various institutions.

The NDA will designate an ODEPA official as National Director of the NAP. The DNP will have the responsibilities of representing the Government in the instances related to the Project; relationship with FAO as Implementing Agency; convene and coordinate the CDNP and the CGP; ensure the correct implementation of the strategies and objectives defined by the CDNP; to ensure the correct technical and administrative execution of the project, through the monitoring and evaluation of its work programs, in close relation with the National Coordinator of the GEF Project; communicate to the SEREMI of Agriculture the decisions and agreements adopted by both the CDNP and the CGP. It will be responsible for requesting the timely disbursement of GEF resources, which will allow the execution of the project activities, in strict accordance with the budget and the Annual Work and Budget Plan (APPA) approved for the current year of the project.

Table 4 below identifies the NAP main stakeholders and their respective roles in its implementation.

Table 4. Forestry, Agriculture and Livestock Sectorial NAP main stakeholders and their roles.

Stakeholders	Role in implementation of NAP
Ministry of Finance	GCF Focal Point/NDA. Ensure implementation of the GCF NAP grant

Ministry of Agriculture (MINAGRI)	Overall coordination of project implementation
FAO	Delivery Partner, responsible for the technical operational and financial management
ODEPA (under MINAGRI)	Design and implementation of the NAP and coordinator of the Intra-ministerial Technical Committee on Climate Change
National Steering Committee	Guide the strategic decisions of the NAP
Technical Committee on Climate Change (CTICC)	Project management in the NAP Management Unit
National NAP Coordinator	Project management undertaking the day-to-day activities
Technical Advisory Committee (academic, private sector, NGOs, women organizations and indigenous people)	Technical working Group to advise the National Steering Committee and NAP Management Unit
16 Regional Technical Focal Points	Lead a multi-stakeholder engagement process at the subnational level
Civil society organizations, private sector	Subnational for adaptation planning

The updated Adaptation Plan for Climate Change in the Forestry, Agriculture and Livestock Sector calls for the development of a participatory process that will seek to include all actors⁵¹ in decisions related to the NAP's activities. This will be achieved through workshops to be held in all regions, which will include focus groups and an independent mediator to study the existing situation and promote discussion through guiding questions. Representatives of civil society will be asked to participate, including representatives of indigenous peoples and women, which should have a minimum participation of 30% in each workshop.

The updated Adaptation Plan for the Forestry, Agriculture and Livestock Sector aims to reduce vulnerability to climate change impacts through the implementation of inclusive sub-national and national actions. With the support of other Chilean institutions, and by integrating the initiatives and lessons learned during the implementation of the initial Plan, the new Plan seeks to strengthen capacities and generate coherence between policies, programs and new activities in the forestry, agriculture and livestock sector.

This Readiness project offers the opportunity to meet the needs of the climate change adaptation planning process for the forestry, agriculture and livestock sector in terms of: i) creating technical and institutional capacities; ii) promoting knowledge management, communication and dissemination; iii) improving sub-national coordination for adaptation; and, iv) encouraging the participation of the private sector and indigenous peoples from a gender perspective. A detailed explanation of how the project will address the country's

⁵¹ Academics, representatives of the private and public sectors, women organizations, indigenous peoples, students, small and medium-sized business owners, among others.

needs is provided in the subsection: Theory of Change. Other ministries, such as the Ministries of Finance, Environment and Foreign Affairs, will also support this Project.

This proposal focuses mainly on the forestry, agriculture and livestock sector, since this is the sector most affected by climate change and is a priority for Chile in its National Action Plan. However, the project will also work with the Office of Climate Change under the Ministry of the Environment, and will seek synergies with other activities related to the adaptation of other sectors through periodic consultations.

In particular, this project will help Chile achieve the following expected results:

- Result 1: Creation of an organizational framework for climate change adaptation and planning coordination
- Result 2: Development of a strategic planning framework for climate change adaptation.
- Result 3: Coordination with the country's general development policy and strategy.
- Result 4: Improved adaptation finance action plan.
- Result 5: Development of a system for monitoring, evaluation and learning capacity

Gender and Indigenous Peoples (IP) approach:

Chile recognizes nine indigenous ethnic groups and according to the National Socioeconomic Characterization Survey²⁸, have an estimated population of 1.56 million people across the country and represents 9.1% of the total population. The largest ethnic groups correspond to Mapuche (84.4% of the total indigenous population) and Aimara (7.7% of the total indigenous).

Over the last years, Chile has made good strides in promoting gender equality. According to the ranking of the Global Gender Gap of the World Economic Forum for the year 2018, Chile has an index score of 0,717, ranking it 54 out of 149 countries²⁷. Some of those actions have meant progress in the situation or status of women, while others have revealed the persistence of discrimination and of obstacles to full equality of opportunity between men and women in the country. Additionally, the progress achieved often hides geographic differences in different dimensions of gender equality. For example, the access to education becomes more difficult for women living in rural areas and belonging to indigenous communities, since they must face language and cultural gaps, in addition to the geographical barriers (14.9% of indigenous women manage to complete secondary education, compared to 18.6% of nonindigenous women).

The review of the previous NAP did not detect any gaps in terms of gender and IP consideration, except for a general observation about the weaknesses of the stakeholders' participation. The updating of the Forestry, Agriculture, and Livestock NAP will pay close attention to identify the gaps areas impacting gender and IP through incorporation of the gender perspective in the participatory process, including actions to gather the opinions, visions and needs expressed by women associated with the forest and agricultural sectors

(representatives of women's organizations, indigenous women, small and medium-sized landowners, for example), as well as IP.

The institution responsible for addressing gender is the Ministry of Women and Gender Equity, which is related directly with MINAGRI through its different institutions' Gender Units. Moreover, the ministry participates in the Inter-ministerial Committee for Equal Rights and Gender Equity; which is an organization whose function is to collaborate in the implementation of policies, plans, and programmes aimed at equal rights between women and men, incorporating the gender perspective into State action. Additionally, MINAGRI has the Agricultural Development Institute (INDAP) that works directly with rural women. On the other side, CONADI is the institution from the Ministry of Social Development that works with the IP, and from MINAGRI, it is also INDAP that works with IP. During the process of the NAP will be an involvement of the official institutions that care for gender and IP, though their counterparts inside the different institutions of MINAGRI and especially from INDAP. Also, these have representations in all the 16 Chilean regions through the 16 Agricultural SEREMIS and the 16 INDAP regional offices.

Specifically, with regards to gender and Indigenous Peoples (IP) a central axis of the NAP is mainstreaming the gender and IP approach in all its phases: preparation, implementation and evaluation. The objective of this approach is to address the necessary broad and equal inclusion interests, needs and proposals of women, as well as IP, thus assuring that benefits arising from implementation of the NAP are equitable between men and women, and among Indigenous Peoples. Additionally, the gender/IP mainstreaming strategy of the NAP integrates a methodological perspective based on interculturality principles proposed by the UN "Guide for the Evaluation of Programs and Projects with a Gender Perspective, Human Rights and Interculturality", which contains guidelines to evaluate this process in the different phases of the NAP.

The design of the NAP will follow the United Nations Declaration on the Rights of Indigenous Peoples, recognizing their rights and making specific mention of Free, Prior and Informed Consent (FPIC) as a pre-requisite for any activity that affects their ancestral lands, territories and natural resources. Also, will include a citizen participation and consultation with stakeholders and vulnerable communities (indigenous, youth, women people), according to the Chilean Law 19.300 / 1994 and its regulation.

The minimum benchmark participation of 30% was defined after the successful experience of the National Strategy on Climate Change and Vegetational Resources (ENCCRV) that had an effective participation of stakeholders, particularly indigenous peoples, women and local communities, in the planning, design, implementation and monitoring of the Strategy. This benchmark will secure the adequate representation and participation of all Indigenous Peoples throughout the country in all stages of the process during the process of formulation and validation of the NAP. The updating of the NAP will include the identification of the gaps and needs of the IP through a cultural appropriateness process (a well carried FPIC), helping

guarantee everyone's right to self-determination, allowing them to participate in decisions that could affect their lives.

There will be special attention to identify the necessary quantity of women representatives/IP at the subnational level as part of key stakeholders. In order to facilitate women participation, logistic measures will be taken, such as allowing and facilitating assistance for women caring for minors; having female facilitators for the focus groups, and when necessary, incorporating intercultural interpreters.

During the implementation, a gender analysis will be conducted, and a Gender Mainstreaming Strategy will be developed to systematically embed in the institutional arrangements at different level. The gender issue is considered an important dimension of the adaptation plan, on a preliminary basis it is believed that it can be expressed through, among others, the following actions/ strategies:

- Determination of principles and criteria for the integration of the gender perspective in the entire process of project execution; -
- Inclusion and incorporation of the gender perspective in the participatory process, through actions to gather the opinions, visions and needs expressed by women associated with the forest and agricultural sectors (representatives of women's organizations, indigenous women, small and medium-sized landowners, for example), and their inclusion in the decision making and associated actions;
- Design and implementation of a gender-responsive methodology for the development of local capacities for adaptation planning;
- Inclusion of social and gender aspects as part of the co-benefits. In particular, the NAP will seek to recognize actions that promote gender equality as co-benefits, for example, actions that recognize and empower women as agents of forest and agricultural development that allow for scaling up of the contributions that these women are making;
- The logical framework of the project will include indicators disaggregated by gender, including the number of beneficiaries, among others. Financial and human resources will be allocated to monitor the effectiveness of gender mainstreaming during planning process and implementation of the NAP.

A successful NAP for the sector requires significant participation throughout the process of IP and the explicit inclusion of gender consideration. The participatory process will include specific actions to gather the opinions, visions and needs expressed by women associated with the forest and agricultural sectors (representatives of women's organizations, indigenous women, small and medium-sized landowners, for example), as well as IP, particularly at the decision-making levels and their associated actions

International approaches employed for assessing climate impact and prioritizing adaptation solutions in the Forestry, Agriculture, and Livestock Sector ⁵²

1. International Wocat database on climate adaptation practices

The World Overview of Conservation Approaches and Technologies (WOCAT) is an initiative built through a network of sustainable land management (MST) specialists. Its objective is to prevent and reduce land degradation through approaches and technologies aimed at sustainable land and water management. In this way, it supports innovation and decision-making processes in sustainable land management, especially in relation to soil and water conservation (CSA).

2. Economic evaluation of adaptation measures

The common element of this initiative is to try to quantify the costs and benefits of the practices through case studies. There are three important terms of the Economics of Adaptation to Climate Change: Inaction Costs, Residual Impacts, and Adaptation Costs. The usual cost-benefit analysis approach compares a projected baseline with the future impacts of climate change with and without adaptation. The difference between adaptive and non-adaptive scenarios makes it possible to estimate the "gross" benefits of adaptation to climate change.

3. Climate and RRD check

"Climate and RRD Check" has been developed by SDC to support development cooperation. It is an approach to integrate climate change mitigation and adaptation, and Disaster Risk Reduction (DRR) into existing and planned strategies, programmes and projects; the Check takes into account both gradual climate changes and extreme natural events (whether hydro-meteorological or not) (SDC, s/a). The SDC works with two lines of action: climate change and disaster risk reduction, and the integration of these two themes have been identified from the projects and field activities, and for this reason, the need arises to establish these guidelines for their incorporation in the analysis of topical development cooperation projects. It has a modular layout that allows it to be applied flexibly, with adjustable depth to the problems (risks) and needs.

4. aQuacroP Program

Climate change has many edges that can be studied: economic, social, environmental, and productive, to name a few. The adaptation of agriculture to this change is only one of these edges. One must think under conditions of temperature increase in many areas, but also in important modifications of precipitation. With this, crop patterns may change, something that is already happening in all the countries of the Region, where the range of current crops in certain sectors is different from that cultivated 10 years ago. Irrigation systems have to respond to new climatic conditions, both for traditional - or old - crops and for new crops.

⁵² <http://www.fao.org/3/a-i3003s.pdf>

FAO has developed AQUACROP software to assess crop productivity under a given climatic condition and has begun to implement, within the model, a climate change analysis.

Theory of Change

The Theory of Change for the NAP (Figure 5) shows how the outcomes of the project will address identified barriers to adaptation. It allows a shift from the valid NAP for the period 2013-2018, which has weaknesses associated to the M&E, financial needs, governance at the sub-national level in terms of the lack of coordination with national government policies, to one which is characterized by the establishment of governance and coordination mechanisms, strengthened investment in climate vulnerability, alignment of the country's development policy, enhanced financing and M&E and knowledge management capacity to adapt effectively to the effects of climate change.

The proposed adaptation planning process will address priorities identified in the NDC and build from previous GCF Readiness support to contribute to strengthening institutional capacities to implementation adaptation planning programmes and projects.

The aim of the Project is to update the Adaptation Plan for Climate Change in the Forestry, Agriculture and Livestock Sector by addressing systematically the gaps identified in the previous sections:

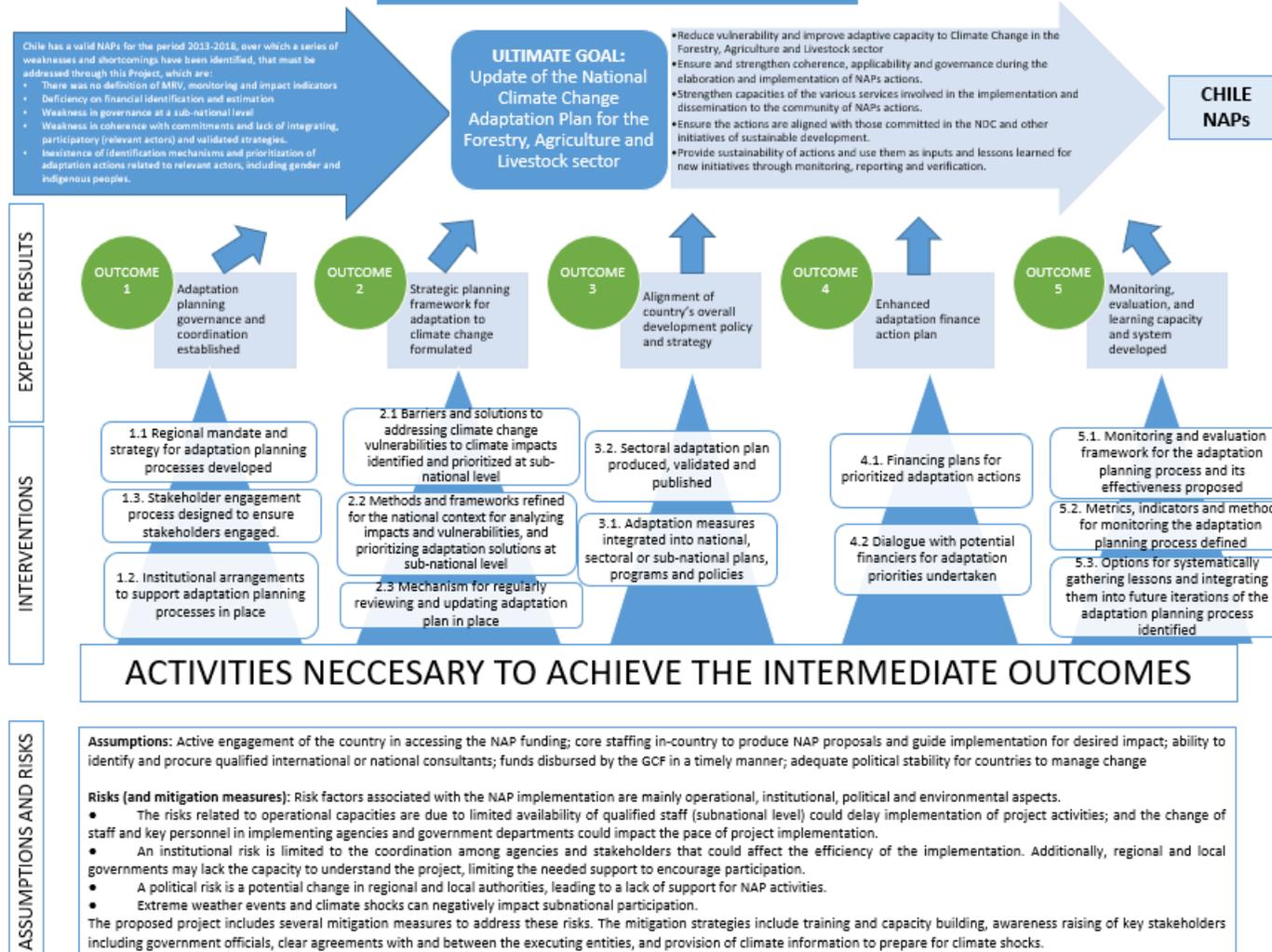
- The weakness of governance at the sub-national level in terms of the lack of coordination with national government policies and commitments is addressed by Outcomes No. 1 and No. 3 as they call for the creation of a specific organizational framework for climate change adaptation and planning coordination within Forestry, Agriculture and Livestock Sector in the MINAGRI. In addition, the updated NAP will be aligned with the MINAGRI climate change structure and the country's development policy and national climate change strategy.
- Given the lack of expertise in participatory processes and the weakness in the participation of a wide range of stakeholders during the development of the previous NAP Plan, Outcome 2 includes a multi-stakeholder process across national and sub-national units. This process will ensure an active participation of private sector, civil society, representatives of indigenous people and representatives of public institutions.
- In addition, the analysis of MINAGRI's experience in the implementation of NAP 2013-2018 has helped to identify mechanisms of identification and prioritization of adaptation actions linked to the relevant stakeholders, considering gender equality and the opinions of indigenous peoples, in order to establish a "bottom-up" relationship, which is directly linked to Result No. 2 of the proposal.
- Given that the previous NAP (2013-2018) did not clearly define the Monitoring and Verification System or associated financing needs, the proposed NAP includes Outcomes No. 4 and No. 5, which will allow for adequate monitoring and clear financing sources.

These outcomes are complementary and mutually reinforcing with the activities of the logical framework. It is a building block process in which the activities are critical interventions performed by the project to achieve five outcomes during its implementation and these outcomes achieve the ultimate goal of updating the National Climate Change Adaptation Plan for the Forestry, Agriculture and Livestock sector. The Chilean new NAP will contribute to reduce vulnerability and improve adaptive capacity to Climate Change in the Forestry, Agriculture and Livestock sector, as well as to strengthen capacities of the various services, ensuring coherence, and governance which are aligned with those committed by Chile in its NDC.

These outcomes are complementary and mutually reinforcing with the activities of the logical framework.

Figure 5. Theory of Change Diagram

THEORY OF CHANGE DIAGRAM



5. BUDGET, PROCUREMENT, IMPLEMENTATION, AND DISBURSEMENT

5.1 Budget plan

Please complete the Budget Plan in Excel using the template available in the [Library](#) page of the GCF website.

5.2 Procurement plan

Please complete the Procurement Plan in Excel using the template available in the [Library](#) page of the GCF website. For goods, services, and consultancies to be procured, please list the items, descriptions in relation to the activities in section 2, estimated cost, procurement method, relevant threshold, and the estimated dates. Please include the procurement plan for at least the first tranche of disbursement requested below and provide a full procurement plan for the entire duration of the implementation period if available at this stage.

5.3 Disbursement schedule

Please specify the proposed schedule for requesting disbursements from the GCF. For periodicity, specify whether it's quarterly, bi-annually or annually only.

Readiness Proposal that falls within a Framework Agreement with the GCF

Disbursements will be made in accordance to Clause 4 "Disbursement of Grants" and Clause 5 "Use of Grant Proceeds by the Delivery Partner" of the Amended and Restated Agreement in the respect of the Framework Readiness and Preparatory Support Grant Agreement entered into between GCF and FAO on 17 May 2018. The Delivery Partner is entitled to submit 2 requests for disbursement each year.

6. IMPLEMENTATION ARRANGEMENTS AND OTHER INFORMATION

6.1 Implementation map

Please describe how funds will be managed by the NDA and/or the Readiness Delivery Partner.

The project will be implemented during a period of 24 months by the Food and Agriculture Organization of the United Nations (FAO) as Delivery Partner of the GCF in partnership with the Ministry of Finance, as well as through the Office of Agricultural Studies and Policies (ODEPA), under the MINAGRI, which is responsible for the Design and Implementation of the National Plan for Climate Change Adaptation in the Forestry, Agriculture and Livestock Sector.

The PMU will be located in the NDA office at ODEPA in order to facilitate the transfer of skills and knowledge.

MINAGRI will be responsible for ensuring the overall coordination of project implementation, as well as coordinating with other institutions participating in the development teams of other National Sectorial Adaptation Plans. ODEPA, in its role as coordinator of the Intra-ministerial Technical Committee on Climate Change (CTICC), will be the ministerial service responsible for Project Management.

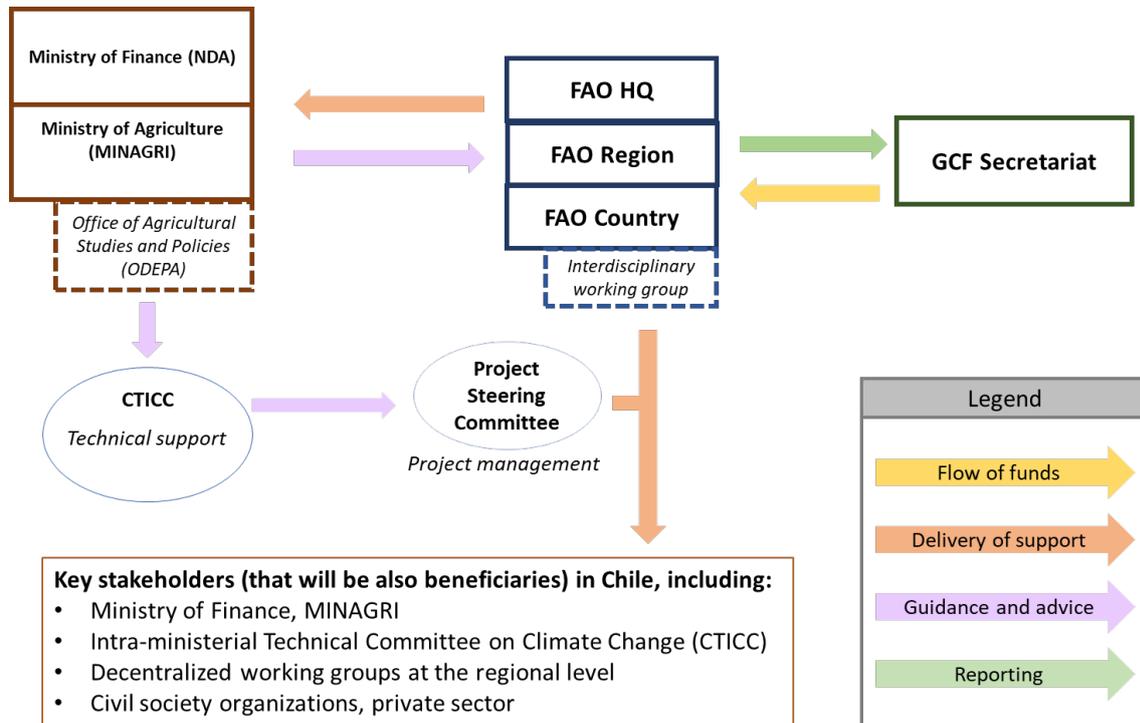
A Project Steering Committee (CD) will be established to ensure organizational effectiveness. The CD will be responsible for supervising the implementation of the project and guiding its activities by providing technical support. The CD for the project will be co-chaired by the Designated National Authority, the MINAGRI, the Ministry of Environment and FAO. The CD is responsible for making management decisions by consensus or majority. To ensure FAO's ultimate accountability, Steering Committee decisions should be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, transparency and effective international competition. In case a consensus cannot be reached within the Committee, final decision shall rest with FAO. The organizational functioning of the Project will be based on the governance structure of the CTICC, made up of representatives of the 12 integrated services in the MINAGRI, which will be expanded for the purposes of the project with the participation of representatives of the Technical Secretariat of NDA, including the Ministries of Finance, Environment and Foreign Affairs, which will act as the Project's Organizational Committee.

The NAP is consistent with national climate policies, and the agreements acquired by the country with instances such as the UNFCCC. The NAP contributes to strengthen the adaptation planning capacity, committed by Chile's NDC.

To ensure greater participation of stakeholders during the execution of the project, the working teams will hold regular consultative meetings with Decentralized Working Groups, created in each of Chile's 16 Regions, to be chaired by the Sub-national Ministerial Secretariats of Agriculture, which are the representatives of the MINAGRI at the regional

level. The mechanism for regional participation will be defined through Activity 1.2 and will maintain communication and coordination with the CORECC, civil society organizations and the private sector. This implementation map is summarized in figure 6.

Figure 6. Project Implementation Map



As Delivery Partner, FAO will be responsible for the technical, operational and financial management, as well as for the supervision of the implementation and evaluation of the project in coordination with the CD. All procurement and contracting processes will be conducted in accordance with FAO policies in consultation with the Executing Agency. The roles and responsibilities of FAO staff are defined by the FAO Guide to the Project Cycle⁵³ and its respective updates.

The FAO Representative in Chile will be responsible for budget and resource management, and will establish an interdisciplinary working group within FAO, to provide guidance in the project execution. The Working Group consists of the Budget Holder (BH), Lead Technical Officer (LTO), Funding Liaison Officer (FLO) and one or more Technical Officers based at FAO Headquarters. In addition, FAO will have the operational support of the existing staff at the FAO office in Chile; the National Operations and Budget Office will be responsible for the financial management and operation of the project, including the preparation of contracts and acquisition of inputs. The FAO Regional Office for Latin America and the Caribbean, based in Chile, also has experts on gender and indigenous peoples who will

⁵³ FAO Guide to the Project Cycle: <http://www.fao.org/docrep/016/ap105e/ap105e.pdf>

provide guidance to the working teams on the integration of gender dimensions and indigenous peoples, respectively, during the project's implementation.

FAO, in coordination with the implementing partners, will establish a Project Coordinating Team, financed by the GCF, to ensure the coordination and execution of the project through the effective implementation of the work plans. The team will be comprised of a National Coordinator and a full-time Technical-Administrative Assistant.

FAO will lead on the works related to gender and IP in close coordination with MINAGRI gender and IP focal points. FAO will apply its Guide to mainstreaming gender in FAO's project cycle⁵⁴ to formulate the NAP's which includes the following sequence and activities:

- (1) Gender analysis will be carried out, to complement the stakeholder analysis;
- (2) The NAP's impact, outcomes, outputs and budget will be determined;
- (3) Gender-sensitive indicators will be discussed and decided upon;
- (4) An institutional assessment of the gender capacity will be conducted.

The Chilean public institutions have a strong record to care of gender and IP issues. All the public institutions (including MINAGRI) have a gender and IP policies and guidelines, including specific indicators to monitor the results. The NAP's process will strengthen this by adapting its contents to adaptation planning.

6.2 Risks, monitoring and evaluation (M&E), and other relevant information

Potential risks of interest

To avoid any possible conflicts of interest deriving from the Delivery Partner's role as an Accredited Entity, the prioritization of technologies, investments and projects in the context of this readiness grant, will be made through a broad consultation process with relevant stakeholders, including other potential implementing entities active in Chile. The final validation of these priorities will be carried out through the countries' own relevant coordination mechanism and institutional arrangements, with the participation of other government agencies, as well as representatives from civil society and private sector as the NDA deems relevant, to ensure chosen priorities are fully aligned with national plans, strategies and Chile's Country Work Programme and adequately includes inputs from consulted stakeholders

Risk Evaluation and Management

⁵⁴ <http://www.fao.org/3/a-i6854e.pdf>

The risks identified through the project life cycle are presented in table 5, including their mitigation measures:

Table 5. Risks identified through the project life cycle

Type of Risk	Description	Impact Level	Likelihood	Mitigation Measures
Gender equality	Difficulty of reaching 30% participation of women in all activities	Moderate	Low	FAO's gender equality mechanisms will be applied
Inclusion of Indigenous Peoples	Difficulty of counting on the participation and validation of the process by indigenous communities	Moderate	Low	An Indigenous Dialogue process will be carried out, which should comply with the CPLI protocol
Participation of relevant actors	Potential difficulty of access and expression of interest on the part of the relevant actors, from both the private and public sectors	Moderate	Low	Adequate monitoring and dissemination, while also establishing sub-national working teams that will promote greater participation

M&E

The monitoring and evaluation of progress in achieving the results and objectives of the project will be based on the activities and deliverables described in the project's Logical Framework. The monitoring and evaluation activities will follow the monitoring and evaluation policies and guidelines of the FAO and the GCF. The monitoring system will also facilitate learning and the replication of results and lessons learned.

The monitoring and evaluation functions and responsibilities will be executed through: (i) continuous monitoring and supervision of project progress, focused on the development of planned activities and deliverables; (ii) semi-annual progress monitoring, which includes technical and financial execution progress; (iii) the mid-term evaluation, which includes the incorporation of mitigation measures and modifications of activities considered in the proposal document; and, (iv) the final evaluation of the project that measures the degree of achievement of expected results.

Other Relevant Information

The start date for implementation will be as outlined in the framework/grant agreement in effect at time of approval unless otherwise agreed to between the Delivery Partner and the GCF..

To avoid any possible conflicts of interest deriving from the Delivery Partner's role as an Accredited Entity, the prioritization of investments and projects in the context of this readiness grant will be made through a broad consultation process with relevant stakeholders, including other potential implementing entities. The final validation of these priorities will be carried out through the country's own relevant coordination mechanism and institutional arrangements, with the participation of other government agencies, as well as representatives from civil society and private sector as the NDA, deems relevant, to ensure chosen priorities are fully aligned with national plans and strategies and adequately includes inputs from consulted stakeholders.

As per article 23.01 of the Accreditation Master Agreement (AMA) between FAO and GCF, the Accredited Entity shall contractually ensure that all Goods and Services procured do not violate or infringe any industrial property or intellectual property right or claim of any third part. In relation to the ownership of assets as per article 23.03 of the AMA applied, indicating if it reasonably deems in the best interest of the continued operation, taking into consideration the objective of the Fund, shall title to such asset. FAO hereby grants to the Government a non-exclusive royalty-free license to use, publish, translate and distribute, privately or publicly, any such material or discoveries within the country for non-commercial purposes. In accordance with requirements of some Resource Partners, FAO reserves the right to place information and reports in the public domain" (Art 13).

Is relevant to notice that the adaptation planning process will continue beyond the project because there is a strong commitment for climate change actions in the Chilean government. The framework of climate change policy in Chile is evolving to adopt a more ambitious revised NDC that includes the first comprehensive Climate Change Law aiming to having a net zero carbon footprint economy by the year 2050, complemented with nine adaptation plans in process of implementation and design. Specifically about this NAP, the adaptation planning process will continue beyond the project with different actions:

- The governance structure established on the project will start to execute the sectorial adaptation to climate change prioritized measures established in the project. This based on the 16 Regional Technical Focal Points (RTFP) as a coordinator and executer at the sub-national level of the actions of the NAP in coordination with the Regional Climate Change Committees (CORECC) for subnational level and with the Intra-ministerial Technical Committee on Climate Change (CTICC) for the national level.

- The work plan developed to increase the institutional capacity of the 12 services of the MINAGRI will start its implementation.

- The private sector with the government will start the implementation of the financing plan established in the project.

-The proposed monitoring and evaluation methodologies for the implementation of NAP measures will start its process to be implemented. Also integrating the indicators and metrics, and the system to integrate lessons learned defined by the project.

-The data from the project will be shared for public knowledge.

As per article 9.03 par. (a), of the Accreditation Master Agreement between FAO and GFC, FAO will apply its own fiduciary principles and standards relating to any 'know your customer' checks, anticorruption, AML/CFT, fraud, financial sanctions and embargoes to comply with the Policy on Prohibited Practices.

With respect to partners already identified for involvement in the project and the sanctions screening conducted in principle FAO already provided all the internal methodologies to the GFC at the time of the accreditation and on yearly basis in the APR/self-evaluation. Also this is covered in the article 10.02 of the Accreditation Master Agreement between FAO and GFC, where FAO shall assess through appropriate due diligence processes the integrity and capacity.

Comparative advantages of FAO as Delivery Partner

The Food and Agriculture Organization of the United Nations (FAO) was accredited by the GFC in October 2016, which allows it to develop donor-funded projects of up to USD\$ 250 million in total size (including co-financing). It is also a partner for the implementation of Readiness proposals (preparing countries for the implementation of proposals to the GFC).

Since FAO's accreditation by the GFC in October 2016, it has supported the development of projects that meet the eligibility criteria of the fund in 28 countries globally. In Latin America and the Caribbean, FAO is supporting the development of 12 proposals through the different GFC financing windows, three of which have already been approved: Paraguay's proposal (USD 25 million), Readiness Guyana (USD 700,000) and Saint Kitts and Nevis (USD 432,000).

FAO's comparative advantage is in proposals that address adaptation to climate change in agricultural planning, rural development and food security, increasing the resilience of family farming (livelihoods and ecosystems), as well as capacity building and innovation for climate change adaptation and mitigation in the agricultural sector.

FAO works closely with member states to promote the planning and implementation of climate-related policies, which include actors in the agricultural sector and underrepresented groups, such as vulnerable communities and women. FAO seeks to improve the coherence of policies to ensure that climate action in the agricultural sectors achieves a transformational change.

At COP22 in November 2016, FAO and the GFC signed a Readiness Framework Agreement. FAO has a solid track record in providing technical assistance related to risk and vulnerability analysis in agricultural sectors, and in facilitating national processes to prioritize adaptation practices and strategies.

FAO provides support in the following key areas:

- Vulnerability, climate risks and impact assessments in the agriculture and rural areas;
- Evaluation of institutional and technical capacities with the aim of improving adaptation capacities at the regional, national and local levels;
- Identification of viable measures for adaptation, resilience and integration of climate change in agriculture and food policies and plans;
- Prioritization of risk reduction, adaptation measures and strategies through cost-benefit analysis in agricultural sectors to improve resilience and food security.

The Guidelines to address agriculture, forestry and fisheries in the National Adaptation Plans, along with the Technical Guidelines of the National Adaptation Plan (NAP) of the UNFCCC, prepared by the Least Developed Countries Expert Group (LEG), help to provide specific guidelines for agricultural sectors. These guidelines aim to support developing countries in the following aspects:

- Reduce the vulnerability of agricultural sectors to the effects of climate change by building capacity for adaptation and resilience;
- Support climate change adaptation in agriculture through the development and implementation of NAPAs; and
- Strengthen the integration of adaptation into agricultural development policies, programs and plans.

Considering the above, the NAP-Ag Guidelines specifically aim to support:

- Those responsible for planning and decisions at the national level working on climate change in developing countries, to better understand the needs and opportunities for adaptation in agricultural sectors.
- Authorities and experts in agricultural sectors that are already making contributions to climate change adaptation and to the development of the NAPs.

In order to facilitate integrated adaptation planning across different economic sectors, the NAP-Ag Guidelines include the same four components as the UNFCCC NAPA Technical Guidelines: establishing baselines and identifying gaps; preparatory support; application strategies, and reporting, monitoring and evaluation. Within each component, several

possible steps related to the agricultural sectors are described. Given that each country pursues its own process at the national level to address climate change, the planning steps described here only offer guidance and are not binding.

Elsewhere in the region, FAO supports the design and implementation of NAPs for agriculture in Guatemala, Colombia and Uruguay.

Project Management Cost (PMC) Up to 7.5% of Total Activity Budget	5021 Travels	Days	50	110.00	5,500.00	31,500.00	Percentage of PMC requested: 7.3%
					-		
					-		
					-		

FOR GREEN CLIMATE FUND'S SECRETARIAT USE ONLY

Breakdown (per budget category)	Total (per budget category)
5011 Professionnal	-
5013 Consultants	127,400.00
5014 Contracts	239,000.00
5021 Travels	7,900.00
5023 Trainings & workshops	76,000.00
5024 Expandable Procurement	-
5025 Non-expandable Procurement	6,000.00
5028 GOE	-
0	-
0	-
0	-
0	-
0	-
0	-
0	-
0	-
Total Outcome Budget + PMC	456,300.00

FOR GREEN CLIMATE FUND'S SECRETARIAT USE ONLY

Total Outcome Budget		424,800.00
Project Management Cost (F)	7.3% requested	31,500.00
Contingency	1% requested	4,248.00
<hr/>		
Sub-Total (Total Outcome Budget + Contingency + PMC)		460,548.00
Delivery Partner Fee (DP) - Up to 8.5% of the Sub-Total		39,146.58
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Total Project Budget (Total Activity Budget + Contingency + PMC + DP)		\$ 499,695.00

Budget Note	Detailed Description
A	National consultant (social participation and/or agriculture or forestry specialist) for 24 working months @ \$1600 per month, total 38.400, to develop the activities 1.1, 1.2, 1.3, 3.1, 3.2
B	National consultant firm with expertise in climate change and/or participatory process, a single contract for @ \$185,000 for a 18 months period, to develop the sub-outcome 2.1., 2.3 and the activities 2.2.2 and 2.2.3 (this includes the delivery of 16 subnational workshops (1 workshop in each region for 1 day for 50 participants) to identify barriers and solutions to address climate change (activity 2.1.1.)). The workshops costs sum \$185,000 and includes: technical expert panelists (\$9300), conference room (\$28000), lunch (\$46000), coffee breaks (\$10000), projector (\$1100), intra-regional transport (\$20300), hotel (\$18500), insurances (\$16000), plane tickets (\$31000), others (\$4790).
C	National consultant (climate finance and agriculture or forestry specialist) for 12 working months @ \$3000 per month, total 36.000, to develop the activities included in the sub-outcomes 4.1 and 4.2
D	National consultant firm with expertise in monitoring and evaluation, a single contract for @ \$54.000 for 24 working months period, to develop the activities included in the sub-outcome 5.1, 5.2 and 5.3
E	National consultant (climate finance and agriculture or forestry specialist) for 9 working months @ \$3000 per month, total 27.000, to develop the activity 2.2,1
F	National consultant for the coordination, administration and direction of the project for 20 working months @ \$1300 per month, total 26.000 (PMC)

Budget Categories
5011 Professionnal
5013 Consultants
5014 Contracts
5021 Travels
5023 Trainings & workshops
5024 Expandable Procurement
5025 Non-expandable Procurement
5028 GOE

Indicate additional budget categories

5.2 Procurement Plan

For goods, services, and consultancies to be procured, please list the items, descriptions in relation to the activities in Section 3, estimated cost, procurement method, relevant threshold, and the estimated dates. Please include the procurement plan for at least the first tranche of disbursement requested below and provide a full procurement plan for the entire duration of the implementation period if available at this stage.

Sub-outcome	Item	Item Description	Procurement Method	Thresholds (Min-Max monetary value for which indicated procurement method must be used)	Estimated Start Date	Projected Contracting Date	
Goods and Non-Consulting Services							
1.1	5021 Travels	16 travels of the Consultant A, to each region of the country to hold bilateral meetings with each SEREMI of the MINAGRI	2,400.00	Direct Procurement	\$2,000 - \$5,000	M04 / Y01	M12 / Y 01
2.1	5023 Trainings & workshops	1 national workshop in Santiago (1 day x 60 participants) to identify barriers and solutions to address climate change with associated reports, this will be organized by the Consultant B. The item includes travel and accommodation expenses of the participants and the leasing of rooms and equipment use during the workshop.	24,000.00	Direct Procurement	\$20,000 - \$35,000	M01 / Y01	M02 / Y 02
3.2	5023 Trainings & workshops	10 indigenous dialogues (1 for each indigenous regions in Chile) (1 day x 25 participants each) for the consultation and FPIC of the National Adaptation Plan. It's consider USD4,000 budget to be assigned to each region. The item includes travel and accommodation expenses of the participants of the workshop.	40,000.00	Reimbursement of documented expenses related to the activities carried out	\$35,000 - \$45,000	M03 / Y02	M 07 / Y02
3.2	5025 Non-expandable Procurement	Printing of the National Plan for Adaptation to Climate Change of the Silvoagricultural Sector (500 copies), for the consultations process and socialization.	6,000.00	3 Quotations Procurement	\$5,000 - \$10,000	M08 / Y02	M12 / Y02
3.2	5023 Trainings & workshops	1 workshop event in Santiago (1 day for 100 participants) to socialize and obtain the official approval from the corresponding institutions at the ministerial and the Ministerial Council of Sustainability as the highest political level of the Adaptation Plan for the Forestry, Agriculture and Livestock Sector (includes venue and catering, transportation must be paid by each participant)	6,000.00	3 Quotations Procurement	\$5,000 - \$10,000	M08 / Y02	M12 / Y02
4.2	5023 Trainings & workshops	2 workshops events in Santiago (1 day each x 25 participants each), with representatives of the Ministry of Agriculture and private actors with potential interest in the financing of adaptation measures for the forestry, agricultural and Livestock sector (includes venue and catering)	6,000.00	3 Quotations Procurement	\$5,000 - \$10,000	M04 / Y02	M09 / Y02

	5021 Travels	Travel expenses for the project coordinator (F) corresponding to 50 days distributed in participation in 15 Socialization Workshops	5,500.00	Direct Procurement	\$5,000 - \$10,000	M04 / Y01	M07 / Y02
PMC	Sub-Total (US\$)		\$ 89,900.00				
Consultancy Services							
1.1, 1.2, 1.3, 3.1, 3.2	5013 Consultants (A)	National Consultant, social participation and/or agriculture or forestry sepcialist	38,400.00	Open Selection process as per FAO's procedures	NA	M01 / Y01	M12 / Y02
2.1, 2.2, 2.3	5014 Contracts (B)	National company or consortium, climate change and/or participatory process specialists	185,000.00	Open Selection process as per FAO's procedures	NA	M01 / Y01	M03 / Y02
2.2	5014 Consultants (E)	National Consultant, climate finance and agriculture or forestry sepcialist	27,000.00	Open Selection process as per FAO's procedures	NA	M07 / Y01	M03 / Y02
4.1, 4.2	5013 Consultants (C)	National Consultant, climate finance and agriculture or forestry sepcialist	36,000.00	Open Selection process as per FAO's procedures	NA	M10 / Y01	M09 / Y02
5.1, 5.2, 5.3	5014 Contracts (D)	National company or consortium, monitoring and evaluation specialist	54,000.00	Open Selection process as per FAO's procedures	NA	M12 / Y01	M11 / Y02
PMC	5013 Consultants (F)	National consultant for the Readiness project coordination	26,000.00	Open Selection process as per FAO's procedures	NA	M05 / Y01	M12 / Y02
	Sub-Total (US\$)		\$ 366,400.00				

\$ 456,300.00